

# On Call

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



## The Gift of Better Health

Companion Animal Fund honors pets through health research

## Catching a Break

Standing CT, developed at UW, fills longstanding need for horses

## Giving Thanks

Celebrating the inspiration and impact of SVM supporters



School of  
Veterinary Medicine  
UNIVERSITY OF WISCONSIN-MADISON

# IN AN EVER-CHANGING WORLD, WE'RE WORKING TO MAKE A DIFFERENCE.



**A Shot at Preventing  
Canine Cancer**

We are one of three sites participating in a groundbreaking five-year clinical trial of a vaccine that could stop common forms of cancer in dogs. If successful in canine patients, this strategy could revolutionize cancer prevention in pets and people.



**Caring for Law  
Enforcement Animals**

Our specialists provide expert-level care for K-9 officers and patrol horses throughout Wisconsin. Through discounted and credited services, as well as first aid and triage training, we keep working animals healthy, happy, and serving their communities.



**Developing Critical  
Diagnostic Tools**

Our experts helped develop a new CT scanner to acquire images of standing, sedated horses without the need for anesthesia. This benefits patients and clinicians with quicker, more accurate scans of the front and hind limbs, as well as the head and neck.



**Leading the Way in  
Shelter Medicine**

Our Shelter Medicine Program helps shelters across the country with infectious disease outbreaks, diagnostic testing, and disease surveillance. Since 2015, the program has assisted more than 644 shelters in 45 states – serving more than 2.4 million animals.



**School of  
Veterinary Medicine**  
UNIVERSITY OF WISCONSIN-MADISON

Explore the wonderful things happening at the UW School of Veterinary Medicine! Visit [vetmed.wisc.edu](http://vetmed.wisc.edu)

## Features



### 'A Game-Changer' for Equine Medicine

Scientists at the University of Wisconsin–Madison and the School of Veterinary Medicine have created the first CT scanner on the market to vertically scan the lower legs of a standing, sedated horse and horizontally scan the head and neck. The system has led to findings undetectable by earlier diagnostic methods and could help prevent catastrophic injuries in racehorses and other equine athletes.

Page 10



### Special Gratitude Section

Giving thanks to all who make a difference for student scholarships, research advancements, facility improvements, and so much more through generous support of the School of Veterinary Medicine.

Page 14



### The Gift of Better Health

For 30 years, gifts to the Companion Animal Fund in honor of pets who have passed away have supported critical health care studies, yielding advancements in the diagnosis, treatment, and prevention of disease.

Page 18

### In Each Issue

#### 4 Message from the Dean

*Our Efforts Rewarded*

#### 5 Menagerie

*A diverse collection of news and information from the SVM*

#### 24 Comparatively Speaking

*A special section for alumni of the Veterinary Science and Comparative Biomedical Sciences graduate programs*

#### 26 DVM Badger Den

*News for and about graduates of the Doctor of Veterinary Medicine program*

### More

#### 5 Ask a UW Veterinarian

#### 5 Socializing with the SVM

#### 28 In the Classroom

#### 29 Awards & Honors

#### 30 Global Impact

### On the Cover

Amy, a 15-year-old West Highland White Terrier, visits UW Veterinary Care for a blood draw as part of a genome assembly project. Amy will serve as the global reference genome for the Westie breed through School of Veterinary Medicine research supported by the Companion Animal Fund. Having breed-specific reference genomes available for multiple dog breeds helps researchers better understand breed-related canine diseases. (Photo: Meghan Lepisto)

©2019 Board of Regents of the University of Wisconsin System



## Our Efforts Rewarded

More than a decade of effort from the School of Veterinary Medicine was rewarded this past summer. With the support of friends such as you, as well as our chancellor and other campus and UW System leaders, Wisconsin legislators, and Governor Evers, the school's building expansion and renovation project was enumerated and signed into law in July. In the state budget, the school was asked to raise \$38 million in gift funds toward our \$128 million project. I am pleased to announce that following a \$15 million gift from the Wisconsin Alumni Research Foundation in September, we have exceeded our \$38 million goal. This means we now have sufficient funds to design and then begin construction of this critical expansion to the school, ensuring our future success and excellence.

Importantly, the school remains focused on continuing to raise the funds needed for the specialized equipment that our complex clinical cases, research laboratories, and teaching spaces require. We're not resting on our laurels, as we will need to fundraise for an additional \$10 million to fully outfit the building.

Design for the building project is already underway and construction has begun on the parking ramp across from the school, to make space for our adjacent expansion. Completion of the garage is scheduled for December 2020. The building expansion is slated to begin in 2021, with completion in 2023.

This issue of the magazine is dedicated to the impact of your gift support on the school's success and its future, and all that you make possible. Whether it be the scholarships we provide, the equipment we can buy, the research we're able to support, and so much more, your generosity makes an incredible difference. We also highlight our development of a standing CT scanner for large animals — just one example of how the UW School of Veterinary Medicine leads this profession. This machine allows for imaging of the front or rear limbs and the head and neck of a standing, mildly sedated large animal, rather than requiring the patient to be anesthetized and recumbent. The technology also has implications for human medicine.

In the coming months, the school will not only revisit its strategic plan, but will begin to meticulously evaluate our curriculum and its impact on our professional veterinary medical students' education. We have begun the process of recruiting a full-time associate dean for professional programs, whose main goal will be to enhance the education we provide to our students so our graduates are even more exceptionally prepared for the broad array of careers available to them.

The School of Veterinary Medicine would not be where it is today without the visionary leaders who helped found the school and the passionate and dedicated assistance of friends such as you throughout our history. I look forward to the coming years as we bring our infrastructure projects to their successful completion, positioning the school to continue to lead the nation. I encourage you to come visit and watch these important projects' ongoing progress so you can see firsthand how they will strengthen the education of our students, the clinical care we provide to patients, and the research we conduct to benefit both animal and human health.



Mark D. Markel

Mark D. Markel, Dean

## On Call WINTER 2019-20

### Administration

**Mark D. Markel**, Dean

**Dale Bjorling**, Associate Dean for Research and Graduate Training

**Ruthanne Chun DVM'91**, Associate Dean for Clinical Affairs and Director, UW Veterinary Care

**Robb Hardie**, Associate Dean for Professional Programs

**Lynn Maki**, Associate Dean for Student Academic Affairs

**Nancy Parkinson**, Assistant Dean for Human Resources

**Ed Rodriguez**, Associate Dean for Budget and Finance

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

**Lauren Trepanier**, Assistant Dean for Clinical and Translational Research

**Ken Waller MS'07, DVM'07**, Assistant Dean for Clinical Affairs

### Editorial

**Editor/Writer:** Meghan Lepisto

**Contributing Writers:** Alejandra Canales, Denise Garlow, Olivia Herken, David Tenenbaum, Kelly April Tyrrell

**Photography:** Michael Forster Rothbart, Denise Garlow, Nik Hawkins, Andrew Hellpap, Meghan Lepisto, Bryce Richter

**Design:** Christine Knorr, University Marketing

**Additional Design:** Denise Garlow, Ashley Voss

### Connect with Us

Please send your feedback and comments to [oncall@vetmed.wisc.edu](mailto:oncall@vetmed.wisc.edu), 608-263-6914, or On Call Editor, 2015 Linden Drive, Madison, WI 53706.

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

[uwveterinarycare.wisc.edu](http://uwveterinarycare.wisc.edu)

[facebook.com/uwvetmed](https://facebook.com/uwvetmed)

[facebook.com/uwveterinarycare](https://facebook.com/uwveterinarycare)

[twitter.com/uwvetmed](https://twitter.com/uwvetmed)

[youtube.com/uwvetmed](https://youtube.com/uwvetmed)

On Call is also available online at:  
[vetmed.wisc.edu/oncall](http://vetmed.wisc.edu/oncall)

The printing and distribution of this magazine were funded by donations to the school. To make a gift, contact Pat Bowdish at 608-332-4750 or [pat.bowdish@supportuw.org](mailto:pat.bowdish@supportuw.org) or Heidi Kramer at 608-327-9136 or [heidi.kramer@supportuw.org](mailto:heidi.kramer@supportuw.org).

## Ask a UW Veterinarian



### When the Human's Away, the Cat Will Play

*This expert response comes from Elizabeth Alvarez, clinical assistant professor of primary care, and Mel Bailey, certified veterinary technician.*

**Question:** My cat loves to chew on things. I am at a loss as to what toys to allow her to play with on her own. Right now I only allow her to play under supervision, but she is very active at night and would benefit from having a toy to play with. This is my first time adopting a young cat so I just want her to be safe.

–Ellen, Sun Prairie, Wisconsin

**Answer:** Concerned and conscientious cat owners, especially of young, active kittens, have to balance the safety of their pets with their cat's deep desire to hunt and play. Our cats' ancestors had to excel at hunting and pouncing in order to survive. Indoor pets no longer need to hunt, but stalking and pouncing help keep them happy and active. To invoke this drive, most cats prefer their toys squeak, chirp, jitter, swing, or vibrate.

Many traditional cat toys include feathers, strings, or sparkles, but cats who chew aggressively will ingest these items so they are best avoided. Intestinal obstruction can be serious and is very common in cats that chew on toys and other objects. Cats who like to chew may enjoy small stuffed toys (sometimes from the dog toy aisle) that are too big to eat but small enough to

be carried around. In general, choose toys with sturdy construction that are manufactured (not just distributed) in the U.S. or Canada; ensure there are no loose decorations; cut off any loops or tags; and immediately remove any pieces that get chewed off.

Paper bags and boxes are among the safest cat toys around and are notoriously adored. Your cat might also like to swat and chase wads of paper (but don't let them eat the paper) or ping pong balls. Feline food puzzles and dispensers are also wonderful for encouraging kitties to "hunt" their daily allotment of food. Just don't give too many treats!

Most cats are indeed active at night. Two good options for independent play are ball track toys, where your cat can swat the ball but the ball can't get out, and interactive, battery-operated cat toys activated by a motion sensor or timer. Cats enjoy visual stimulation, too, so a window to look out, or a video of nature, can be stimulating as well.

Finally, consider rotating the toys available for your cat to prevent boredom and keep items exciting. Enjoy your new friend! Cats are wonderful companions.

### Questions

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

Please send it to the *On Call* editor at [oncall@vetmed.wisc.edu](mailto:oncall@vetmed.wisc.edu).

We cannot guarantee responses to all submissions. For any urgent pet health issue, please contact your veterinarian directly.

### Socializing with the SVM

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



A HUGE thank you to Dr. Bleedorn and all of the fabulous staff at UW for a successful surgery on our boy Heat! We are so grateful for the excellent and leading edge care that they are able to provide!

–Lola's Lucky Day-Wisconsin  
Via SVM Facebook (@uwwvetmed)



This warms my heart & makes me smile. The giraffe skeleton in our lobby @uwwvetmed has new little friends with a new one every few days. Happening completely organically.

–Kristen Bernard  
Via SVM Twitter (@uwwvetmed)

# Veterinarians, Physicians to Jointly Explore Links Between Animal and Human Health

A physician, a veterinarian and a PhD researcher walk into a conference. At the event's conclusion, the medical doctor says: "I had no idea there were veterinary cardiologists like there are human cardiologists."

This interaction occurred at a translational health summit coordinated by the University of Wisconsin School of Veterinary Medicine (SVM) in 2018 on the topic of inherited cardiomyopathies — diseases of the heart muscle — in people, cats and dogs. Now, the SVM has been awarded a five-year, \$3 million grant from the National Institutes of Health to further bolster efforts to bring physicians and veterinarians together in support of human and animal health.

"Our goal is to leverage the skills of veterinary specialists and bring them into research teams, helping physicians and PhD researchers see that many of the diseases they study also occur in animals, and what veterinarians know about these diseases in animals can help advance treatment in people," says **Lauren Trepanier**, professor and assistant dean for clinical and translational research in the SVM.

The grant will also help support the development of graduate veterinarians into skilled clinician-scientists and address gaps in knowledge of human and animal diseases.

Trepanier is principal investigator on the grant, in coordination with Professor Christine Sorkness at the UW–Madison School of Pharmacy and partners in the Clinical and Translational Science Award One Health Alliance (COHA) at the University of California, Davis; University of Florida; and University of Minnesota.

Because of their familiarity with the comparative aspects of disease, veterinarians are uniquely positioned



Susanna Solbak, a former resident in Emergency and Critical Care at UW Veterinary Care, examines a Newfoundland held by certified veterinary technician Pam Yessa. A five-year, \$3 million grant to the School of Veterinary Medicine will support the development of residents and other early-career veterinarians into skilled clinician-scientists to advance knowledge of human and animal diseases.

to contribute expertise to translational research teams, Trepanier notes.

"Veterinarians often understand similarities and differences between animal and human diseases because we go to the human medical literature all the time on the clinic floor," she says. "If we're treating a disease in an animal and there's no veterinary study, we look at a human study."

The program will offer two-year funded fellowships for targeted research training for veterinarians just out of residency. Participants can choose from a menu of opportunities, to begin in fall 2020, at 15 veterinary medical schools within the COHA network. Each fellowship mentor team will include a mix of MD, DVM, PhD, and other specialists and focus on diseases common to both veterinary and human patients.

For early-career veterinary faculty, a three-day COHA Translational Research Immersion Program — hosted for the first time

this September in Madison and then biennially — will cover study development, grant writing, research implementation, and more. Trainees will also receive mentoring for any planned grant proposals in the year following the immersion program.

Finally, a series of translational summits across the country will convene established veterinary and human medical researchers who are studying shared diseases across different species. Planned topics range from skin allergies to cancer pain, osteoarthritis, and epilepsy.

Two pilot summits funded by COHA grants to the SVM, including the 2018 workshop on cardiomyopathies, yielded positive feedback and new cross-professional collaborations, says Trepanier. "People said things like, 'This is genius,' 'I've never been to anything like this before,' and 'This is a real eye-opener.'"

*Meghan Lepisto*

## Vaccination May Help Protect Bats from Deadly Disease

A new study shows that vaccination may reduce the impact of white-nose syndrome in bats, marking a milestone in the international fight against this destructive wildlife disease.

“This is a significant step forward in developing control mechanisms to combat the devastating spread of white-nose syndrome in our important bat populations,” says U.S. Geological Survey (USGS) Director Jim Reilly. “Being able to deliver an oral vaccine during hibernation could be a game changer in our ability to combat one of the deadliest wildlife diseases in modern times.”

White-nose syndrome is caused by a fungus called *Pseudogymnoascus destructans*, or Pd, and has killed millions of North American bats since 2006. The disease — named for the fuzzy white appearance of Pd as it infects muzzles, ears, and wings of hibernating bats — is spreading rapidly and there is no cure.

Recent studies by scientists at the USGS, University of Wisconsin-Madison, and Wisconsin Department



A little brown bat displaying white-nose syndrome. A new study shows that vaccination may reduce the impact of this devastating disease.

of Natural Resources demonstrated that bats immunized against Pd were less likely to develop white-nose syndrome or die from the disease in two initial scientific trials. Results were published in May in the journal *Scientific Reports*.

“This work shows the importance of multi-disciplinary teamwork when dealing with devastating diseases

such as white-nose syndrome,” says Professor **Jorge Osorio** from the UW School of Veterinary Medicine, who has extensive experience in developing molecular vaccines.

During the trials, scientists administered several vaccine formulas to little brown bats prior to Pd exposure and hibernation. They found that bats vaccinated orally or by injection survived at a higher rate than unimmunized bats. The bats also developed specific anti-fungal immune responses.

Although work is still progressing to select the best vaccine candidates, the findings suggest that vaccination could potentially protect bats or reduce the effects of white-nose syndrome by providing them with immunity against Pd.

In natural environments, vaccines could be applied to bats in a jelly-like substance that they would ingest as they groom themselves and each other. Bats would also transfer the vaccine-laden jelly to untreated bats.

*U.S. Geological Survey*

## Kibble

### Little bits of news from around the school

Amid growing concern in the veterinary medical community about what appears to be an increasing incidence of **heart disease** (specifically, dilated cardiomyopathy) in dogs on certain types of diets, clinical professor **Rebecca Stepien DVM'87** outlined current resources and recommendations for dog owners. Read online: [go.wisc.edu/DCM](http://go.wisc.edu/DCM).

The detection of 2019's first case of **Eastern equine encephalitis** (EEE) in Wisconsin highlights the need to protect animals and people. Although a vaccine for EEE exists, the affected horse had not been vaccinated. Both horses and people contract the virus through mosquitoes, a reminder to minimize standing water and deter mosquitoes through clothing and repellents.

In August, another horse in Wisconsin was diagnosed with a separate disease called **equine infectious anemia** — the first time in 15 years this often-fatal blood-borne disease has been found in the state. The disease (not a risk to humans) is controlled by annual voluntary testing to detect it; there is no vaccine and no way to eradicate it.

The UW–Madison Global Health Institute has been named a **Center of Excellence** in the Global Virus Network. School of Veterinary Medicine Professors **Tony Goldberg** and **Yoshihiro Kawaoka** will co-direct the center. Other top virologists from within the school — who study everything from Ebola to emerging pathogens to viruses that cause cancer — will serve as center representatives.

## H3N2 Viruses Mutate During Vaccine Production but New Tech Could Fix It

In late March 2019, the World Health Organization and a vaccine advisory committee of the Food and Drug Administration selected the final influenza strains to include in the vaccines produced for the next flu season. These include H1N1, influenza B, and H3N2 viruses.

The goal is to find the best match between the vaccine and the influenza strains most likely to be circulating in the environment, particularly because flu viruses frequently mutate and can differ across time and from region to region. One common problem, however, is that the viruses chosen for vaccines often mutate in the process of production, creating mismatches between seasonal flu viruses and the vaccine in any given flu season. This has been a particular problem with H3N2 viruses.

But a new technology developed by the UW School of Veterinary Medicine's **Yoshihiro Kawaoka** may make H3N2 vaccine development a bit easier. In *Nature Microbiology* in April, Kawaoka and his team described a new cell line that enables better growth of H3N2 for vaccine use. The virus is also far less likely to mutate during production using this cell line, improving the chances of a match between vaccine and circulating influenza viruses.

"The NIH (National Institutes of Health) is interested in using new cell lines to make H3N2 human challenge strains since these recent H3N2 viruses do not grow well in existing cell lines," explains Kawaoka, professor of pathobiological sciences. Human challenge trials help public health agencies identify the best vaccine virus candidates.

Kawaoka has already provided the cell line to public health agencies for testing influenza samples from patients and for testing the effectiveness of antiviral drugs against the circulating

strains. He is also providing them to a UW–Madison graduate, Bharat Biotech CEO Krishna Ella, for the company's work developing cell-based flu vaccines.

Kawaoka says the cell lines will be validated for vaccine use, and the Wisconsin Alumni Research Foundation has filed for a patent.

While influenza viruses used for vaccines are usually grown in eggs, some are grown in specific cell lines such as MDCK. However, H3N2 is different. "H3N2 viruses — the most important human viruses among the four strains circulating — do not grow well in eggs or even in MDCK cells," says Kawaoka. "H3N2 causes epidemics more often and causes more severe disease in humans."

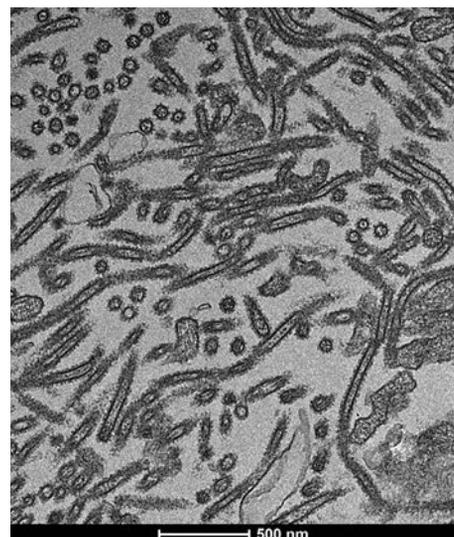
Flu viruses infect cells by attaching to docking stations called receptors on the cell surface. In 2005, Kawaoka's research group at the University of Tokyo, where he is also a professor of virology, modified MDCK cells to include more humanlike receptors. These cells, called AX4, better supported the growth of influenza. However, H3N2 viruses acquire mutations in these cells, too.

For the new study, Kawaoka's team modified MDCK cells by over-expressing human virus receptors and reducing avian virus receptors by using the gene-editing tool CRISPR-Cas9. They found that these cells, which they call hCK, better mimic those found in the human upper respiratory tract.

The researchers also learned that H3N2 viruses grow faster and in higher amounts in hCK cells, and in the new cell line the team could more reliably recover virus particles that came from patient samples.

"This finding is quite important in both public health and in vaccine production," Kawaoka says.

*Kelly April Tyrrell*



An image of H3N2 influenza viruses. New technology developed by UW School of Veterinary Medicine Professor Yoshihiro Kawaoka may make H3N2 vaccine development easier.

### Recent Retirements

Best wishes to these recent retirees from the School of Veterinary Medicine

- Small Animal Internal Medicine Clinical Instructor **Hattie Bortnowski**, whose career at the University of Wisconsin–Madison and UW Veterinary Care spanned four decades of unwavering and enthusiastic dedication to teaching and clinical service.
- Clinical Professor **Howard Steinberg**, who for 29 years served the Anatomic Pathology clinical service, instructed veterinary medical students in pathology, postmortem, and biopsy techniques, and trained post-graduate instructors in pathology.
- Clinical Professor **Karen Young**, whose distinguished research and teaching in clinical pathology advanced the field and inspired countless students and colleagues. Young earned many honors throughout her 35-year career at the SVM, including the Slesinger Award for Excellence in Mentoring, American Society for Veterinary Clinical Pathology Lifetime Achievement Award, and induction into the European Society of Veterinary Clinical Pathology Hall of Fame.

## Finding the Obesity-Breast Cancer Link

Obesity is commonly associated with an increased risk of chronic diseases, including cardiovascular disease, diabetes, and many cancers. Though researchers have long been aware of the link between obesity and breast cancer in post-menopausal women, the reason is still unclear.

**Lisa Arendt DVM'02**, an assistant professor with the UW School of Veterinary Medicine and member of the UW Carbone Cancer Center, is examining how the cellular conditions that arise during obesity influence the environment around growing breast cancer tumors. Her research group studies the effects of obesity using cancer cells in culture dishes and mouse models, as well as with breast tissue samples generously donated by women undergoing elective breast reduction surgery.

"If we study different breast cancer cell lines in the lab and then implant them into mice, we can look at specific factors that the cells might be making. Then, if we use a high-fat diet model to induce obesity in mice, we can look at what happens to the cells that are actually in the mammary gland. And what does it look like in human cancer? Is it similar? Is it different?" Arendt explains. "This way we can try to pull apart different pieces that contribute to cancer development."

Arendt and her research group have isolated several different cell types from the mammary glands of both lean and obese mice. In a recent study, they showed that obesity profoundly changes the growth of cells — specifically a type of connective tissue cell known as stromal cells — in the local fatty tissue environment.

First, they found that stromal cells from fat of obese mice grow faster compared to those from lean mice. Cells from obese mice also start to resemble muscle-like fibroblast cells, forming a supportive network around the other cells in the mammary gland — problematic when a tumor starts growing. "The cells that are normally in the mammary gland or breast tissue get co-opted into doing abnormal things and growing with the tumor instead of keeping growth restricted," Arendt says.

Arendt and her group showed that when injected into the mammary glands of lean mouse breast cancer models, the fatty tissue stromal cells from obese mice mixed with tumor cells to form larger, more aggressive tumors. She thinks that obesity might promote these changes, because weight loss in the obese mice decreased the tumor-promoting behavior of their cells.

In follow-up studies, Arendt has found that obese mice have more macrophage immune cells in their mammary glands even before tumor formation. Once a tumor starts growing, those macrophages help the tumor by causing an increase in the formation of blood vessels and supplying the tumor with the nutrients necessary for its rapid growth. By depleting the macrophages in the mammary glands of obese mice, Arendt's lab showed that they could decrease blood vessel formation and slow tumor growth to that of the lean mice. A number of clinical trials are now examining macrophages and blood vessel formation as potential drug targets.

*Alejandra Canales*



## Overheard

Recent commentary by and about those at the SVM

"[Mosquitoes] are really sensitive to climate change. I don't think there's any doubt that as temperatures shift, their ranges and places they can go will also change. ... It's the kind of thing that keeps us up at night."

—Professor **Lyric Bartholomay PhD'04**, a vector biologist, in a *National Geographic* story on the warming planet's impact on disease-carrying insects.

"We train our students to improve animal welfare. Veterinarians are not just there to treat an individual animal with an injection of medicine."

—**Nigel Cook**, professor of food animal production medicine, in a *Successful Farming* article about trends and changes in rural veterinary medicine.

"What we're finding is that superantigens are multi-functional. Yes, they can activate the immune system, but they can also dysregulate or manipulate every other tissue that they come in contact with or interact with."

—**Wilmar Salgado-Pabón**, assistant professor of pathobiological sciences, who studies the role of superantigens in multiple diseases.

"We are here to hopefully help reduce the stigma for mental health for students, so that they can start to see that accessing mental health services during school and thereafter isn't anything to be concerned about. We just want to normalize that process that when you're struggling, you go get help."

—**Shelly Wissink-Waller**, a senior counselor and career advisor with the School of Veterinary Medicine's Personal and Wellness Support Services Office.



# An Industry First

Standing CT for horses, developed at UW–Madison, fills longstanding need in veterinary medicine *By Meghan Lepisto*

**A**t California's Santa Anita Park, in a single season, 30 horses lost their lives due to injuries suffered during racing or training. This prompted the temporary closure of the prominent horse racing course in 2019.

This and other instances of catastrophic injuries in racehorses have recently drawn critical attention to the sport. As the industry searches for solutions, scientists at the University of Wisconsin–Madison have created a diagnostic imaging tool that could help prevent these injuries through early detection and monitoring: a standing helical computed tomography (CT) scanner named Equina.

It is the first CT scanner on the market to vertically scan the lower legs of a standing, sedated horse and also the first dual-purpose standing CT machine. This means it can rise up

and down to scan a patient's legs and move horizontally to scan the head and neck — three areas of the body where CT is advantageous in teasing out anatomical intricacies.

The system fills a longstanding, unmet need in the diagnosis and treatment of a variety of conditions facing horses and other large animals. Already, more than 150 horses ranging in size from a miniature horse to a draft horse have been scanned at UW Veterinary Care, the teaching hospital of the UW School of Veterinary Medicine (SVM), using the new system. This has led to findings undetectable by earlier diagnostic methods, including a brain tumor, an orbital tumor behind the eye, and diseases of the feet, teeth, and sinuses.

"The CT has changed the way we can evaluate lameness and orthopedic injury in the distal limb and has vir-

---

"This is a great opportunity to bring novel technology to the state and to our school. There's nobody else that can do this in Wisconsin."

---

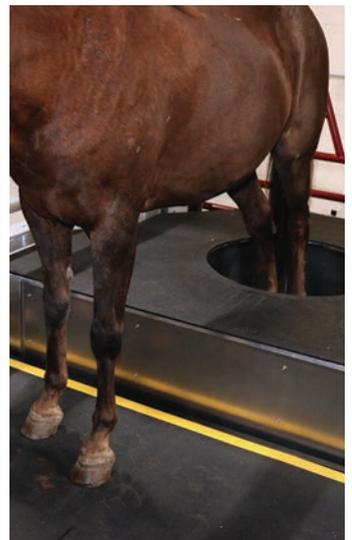
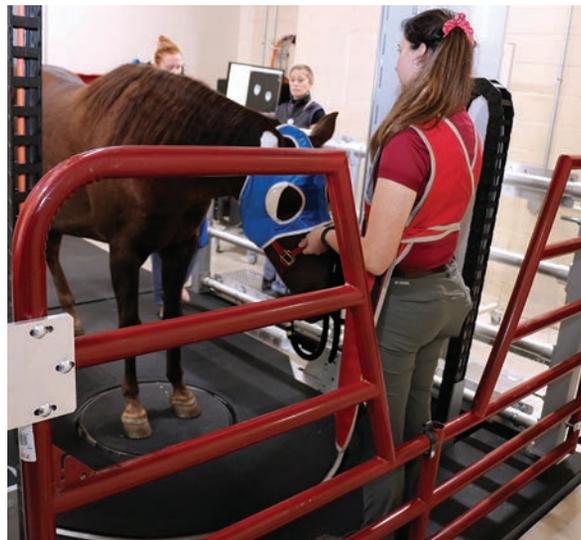
tually replaced radiography (X-rays) as the gold standard diagnostic for disease of the teeth and skull," says **Samantha Morello**, clinical associate professor of large animal surgery at the SVM.

The first Equina machine was installed for evaluation in the winter of 2018 at UW Veterinary Care and the service is now available for patients of

To conduct a scan, the patient is walked to the Equina unit and sedated with intravenous medication, then positioned on the imaging platform. Blinders around the eyes and cotton placed in the ears limit the horse's vision and hearing to help keep the patient calm.



MEGHAN LEPISTO (4)



the Morrie Waud Large Animal Hospital. It is currently the only machine available in Wisconsin.

"This is a great opportunity to bring novel technology to the state and to our school," says **Ken Waller MS'07, DVM'07**, clinical associate professor and section head for diagnostic imaging.

**Standing CT holds several advantages** over other diagnostic tools currently available for horses. For one, CT images provide improved imaging of bone and soft tissue compared to traditional X-rays, aiding more definitive diagnoses and treatment plans.

The technology, says the SVM's **J.R. Lund MS'07, DVM'07**, a clinical instructor in diagnostic imaging, also allows for easier and faster imaging, and improves the ability of clinicians to discern what's happening with their patients.



The Equina machine is the first CT scanner on the market to vertically scan the lower legs of a standing, sedated horse and also the first dual-purpose standing CT machine. This means it can rise up and down to scan a patient's legs and move horizontally to scan the head and neck.



To image the head and neck, the gantry is raised and rotated 90 degrees to scan in a horizontal direction while the horse's head rests on a padded stand. In either position, it takes about 30 seconds for the scanner to collect images. The entire process takes about 10 minutes.

X-rays yield a two-dimensional version of a three-dimensional object, which can lead to obscurities because overlying structures are superimposed upon one another. CT “removes that layer of ambiguity” through three-dimensional, cross-sectional images, explains Waller.

“To use a loaf of bread analogy, I can slice the loaf, take out a slice, and look at it,” he says. “Then I can put that slice back, slice the bread in different directions, and take those slices out individually.”

In addition, because a horse can remain standing in the scanner and only requires sedation, there's no need for general anesthesia — a cost savings for the client and safety advantage for

the patient and hospital personnel. Anesthetizing a large patient like a horse is resource-intensive and carries a risk of complications and stress-related injuries, a limitation of conventional CT machines that require the patient to lie recumbent on a table. Clinicians rarely pursue recumbent CT for horses and other large animals unless they are already planning to anesthetize the animals for surgery.

The ability to image horses and other large animals without general anesthesia now makes CT technology available to “almost every patient and client that walks through our door, since it's safe, fast and cost-effective,” says Morello.

“We're giving veterinarians a technology that they never had access to,” adds David Ergun, an adjunct professor

---

“The CT has changed the way we can evaluate lameness and orthopedic injury in the distal limb and has virtually replaced radiography as the gold standard diagnostic for disease of the teeth and skull.”

---

of medical physics at UW–Madison and CEO of Asto CT LLC, the company founded at the university that developed the Equina imaging system.

Before the standing CT's availability, X-rays would typically serve as the starting point in a patient work-up, followed, if needed, by other diagnostic approaches such as endoscopy, ultrasound, or even exploratory surgery. “Now we can just do the CT, versus running through all of the other modalities to get an answer,” says Lund, noting that hospital clients, as well as veterinarians in the region who can refer patients to UW Veterinary Care for the service, “are beyond thrilled.”

The technology has also proven beneficial for students and veterinarians pursuing training at the SVM. “For teaching opportunities it's outstanding because you can instill confidence in the diagnosis and the imaging fits better with the actual anatomy,” explains Waller.

**The idea for the machine began with Peter Muir**, an orthopedic surgeon at the SVM who for more than two decades has studied bone biology and the mechanism that leads to stress fractures in racing Greyhounds and Thoroughbreds. As he learned more about condylar fractures, a stress fracture common in racehorses, he realized that having new technology to screen for the injuries would be an important innovation.

The types of career-ending fractures suffered by racehorses and other

performance horses often begin as small cracks or stress lesions in the bones of the lower leg, which then intensify under the impact of racing or other equine sports. These early signs of fracture are hard to detect on radiographs, but can be easily seen on CT.

In 2013, Muir approached Rock Mackie, then director of medical engineering at the Morgridge Institute for Research, with the idea of developing a vertical CT scanner for horses. Mackie, a UW–Madison professor emeritus of medical physics, has shepherded to development numerous medical technologies. He had previously worked with the SVM as co-founder of TomoTherapy, a radiation-based cancer treatment machine that was successful in early clinical trials in pet dogs with cancer at UW Veterinary Care. TomoTherapy ultimately found widespread use in human medicine, too.

As Mackie brainstormed with his team, Muir and others from the SVM worked up early prototypes. The end result “is sort of CT in reverse” says Muir. Cutting-edge robotics precisely move a 2,000-pound CT scanner around the horse. The intellectual property behind the technology was patented by the Wisconsin Alumni Research Foundation.

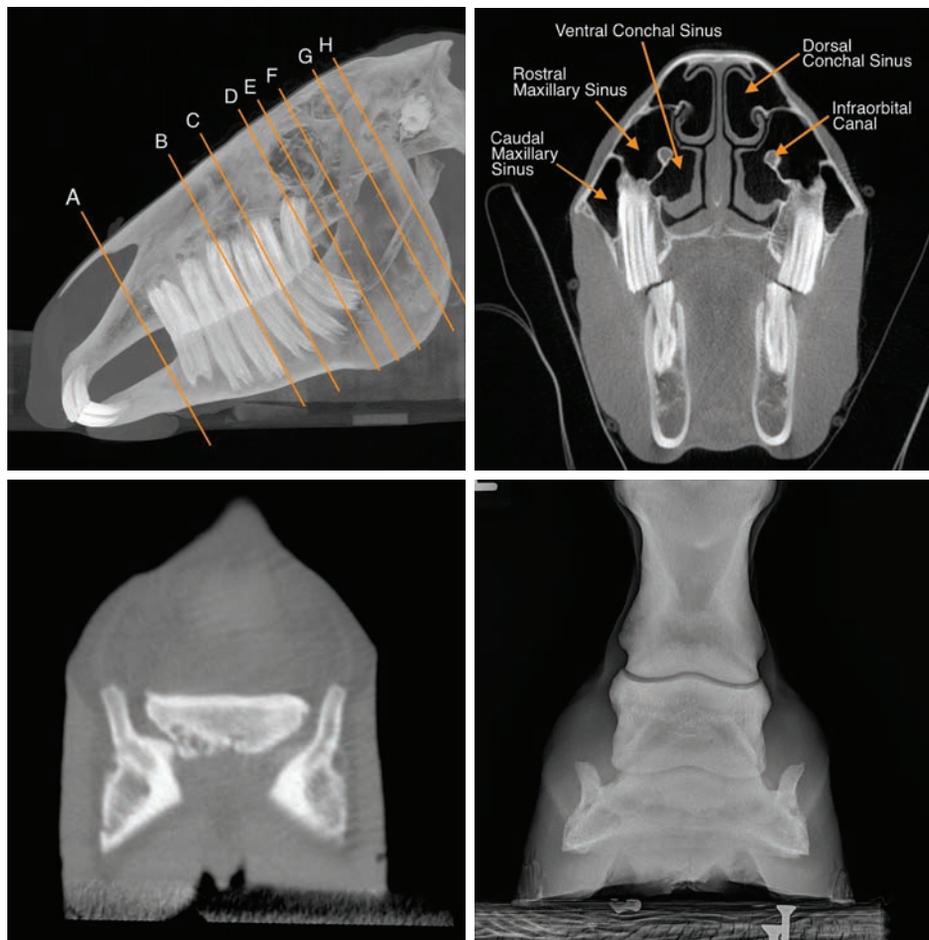
The rugged, armor-plated machine is based on a large baggage scanner, with a number of refinements to accommodate horses rather than luggage and withstand the rigors of veterinary practice.

“In a human baggage scanner, nobody is going to pee on it,” Mackie says with a laugh.

**The system is “designed by veterinarians for veterinarians”**

Ergun notes, and it continues to be refined based on clinician feedback. Units have also been installed at the University of Minnesota College of Veterinary Medicine and the University of Melbourne’s U-Vet Werribee Equine Centre in Victoria, Australia.

Equina’s creators hope that as the technology becomes more widely adopted, horses exhibiting lameness or other signs of injury can be screened



**Top:** Computed tomography (CT) yields three-dimensional, cross-sectional images, comparable to an anatomical loaf of bread that can be cut into multiple slices, which can each then be viewed individually. Here, a horse’s head and mouth is viewed from the side with cross sections labeled (left) and in an individual cross section (right).

**Bottom:** A comparison of computed tomography (CT), left, and radiograph (X-ray), right, imaging of portions of the coffin bone (on the sides) and navicular bone (centrally located) of a horse. Multiple dark regions within the left side of the navicular bone indicate degenerative change consistent with navicular syndrome. CT is more sensitive to these changes than X-ray and allows clinicians to evaluate bones in a three-dimensional manner without superimposition. CT also allows for improved evaluation of soft tissue structures, such as tendons and ligaments, that may be involved in disease processes.

for early signs of a break and treated before the fracture becomes a serious clinical problem.

“Because we can see a fracture on CT that we may not have been able to see with plain radiographs, we can make the decision to treat it much more aggressively and really minimize what the horse is doing so he doesn’t displace the fracture and have a catastrophic breakdown,” says Lund.

Muir and others at the SVM are pursuing multiple areas of clinical research around standing CT to advance equine studies. Asto CT is also licensing

intellectual property from the machine to develop a standing CT for use in human medicine, to more precisely deliver radiotherapy to cancer patients in an upright position and minimize the risk for unnecessary side effects.

“Upright radiotherapy is better medicine for so many types of cancer treatments, but has been hindered by the lack of upright CT scanners,” notes Mackie.

“We’re at the cutting edge of clinical knowledge,” adds Muir. “As this type of scanning technology is more widely adopted, it will drive innovation.”



*Thank You!*

# MAKING A DIFFERENCE WITH DONOR SUPPORT

Hospital clients, clinic sponsors, alumni, community members, industry partners, and more — the UW School of Veterinary Medicine receives the gracious support of donors from all walks of life with gifts of all sizes, all of which make a difference.

We are deeply grateful to all who have contributed. Quite simply, none of our accomplishments would be possible without the generous support of friends of the school. Your gifts have driven substantial new commitments to scholarship support for students; allowed for investments in exceptional faculty, pioneering research, and life-saving discoveries; secured cutting-edge diagnostics and equipment for our teaching hospital; advanced essential renovations and the school's forthcoming building expansion; ensured long-term investments through future estate gifts; and much more.

In the pages that follow, we recognize the impact of just some of this generosity and the people behind the gifts. Online, at [vetmed.wisc.edu/donor-honor-roll](http://vetmed.wisc.edu/donor-honor-roll), you can find a full list of individual and corporate donors who made gifts or pledges of \$100 or more between July 1, 2018 and June 30, 2019, as well as separate listings of cumulative, alumni, and veterinary medical clinic donors.

From the bottom of our hearts — and from our students, faculty, staff, and hospital patients — thank you. Together, with your support, we are training the most outstanding students, providing the highest level of clinical care, and making discoveries that advance understanding of animal and human health.



## 2,871

TOTAL INDIVIDUAL DONORS  
TO THE SVM IN 2018

## \$6.2 MILLION

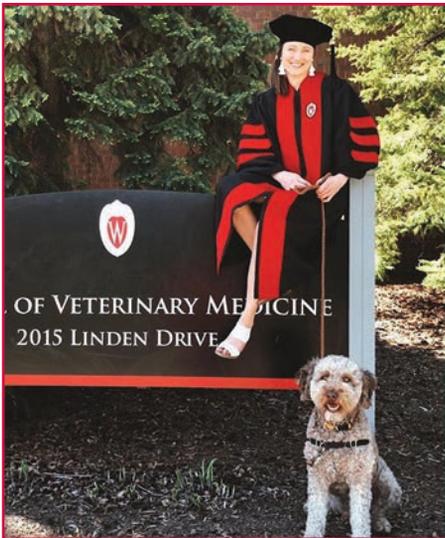
TOTAL GIFTS RECEIVED  
IN 2018



### How to Give

For more information on ways to give to the School of Veterinary Medicine, please visit [vetmed.wisc.edu/giving](http://vetmed.wisc.edu/giving) or contact **Pat Bowdish** at [pat.bowdish@supportuw.org](mailto:pat.bowdish@supportuw.org) or 608-332-4750 or **Heidi Kramer** at [heidi.kramer@supportuw.org](mailto:heidi.kramer@supportuw.org) or 608-327-9136.

# PRIORITIZING STUDENT SUPPORT



EMILY GAVIC

Emily Gavic DVM '19, recipient of the 2019 Rock Valley Veterinary Medical Association Award.

**REBECCA BROTZMAN DVM'07** can remember the pride she felt at the 2007 School of Veterinary Medicine Celebration of Excellence when, as a soon-to-be graduate, she was presented with an award for clinical proficiency in bovine medicine.

"It was a special reward for a job well done and quite an honor to be selected by the clinicians that I worked under," she recalls. "I felt like I was being welcomed into the profession and that I had accomplished what I set out to do. It built my confidence."

Today, as vice president for the Rock Valley Veterinary Medical Association, Brotzman helps to bestow similar support for a graduating DVM student from the organization's home base of Rock, Green, Jefferson, or Walworth counties. For nearly 30 years the group has sponsored a \$1,000 annual award, increased to \$2,000 in recent years, for a fourth-year UW veterinary medical student proficient in clinical medicine and surgery.

The award "is an important part of why we exist and why we do what we do," Brotzman says. "We're welcoming in the next generation by offering this scholarship, but also rewarding hard work."

Even when the organization has faced limited resources, member support for the honor has always persisted. "At a time when we're looking at budgets and considering different costs, it never crosses our mind that we would get rid of the scholarship. It's such a valuable component of us supporting each other in the sense that these students are our colleagues now," she says.

Having experienced the rigors and financial demands of a veterinary medical education firsthand, Brotzman would encourage others to support student scholarships and awards.

"Supporting students is probably one of the most direct ways you can positively impact veterinary medical education," she says. "When you can directly impact the life of a student, I think there will be other far-reaching benefits."

Supporting students is probably one of the most direct ways you can positively impact veterinary medical education.

## For Generations to Come

The School of Veterinary Medicine remains committed to maintaining the affordability of the education that we provide, with our veterinary medical students' indebtedness upon graduation ranking among the lowest in the United States. Gifts go a long way in offsetting students' tuition and other expenses. To give to SVM scholarships and other student support, visit [vetmed.wisc.edu/student-support](http://vetmed.wisc.edu/student-support).

**\$1.8** MILLION

PROVIDED FOR STUDENT AID AT THE SCHOOL OF VETERINARY MEDICINE IN 2018-19

**622**

SCHOLARSHIPS AWARDED

**100%**

OF SCHOLARSHIP APPLICANTS RECEIVED AID

**\$3,131**

AVERAGE SCHOLARSHIP AWARD

## The Rat Pack

### Honoring the loving care of rodent brothers by UW veterinarians

When veterinary medicine students sit at the active learning workspaces bearing the names **Louie**, **Sammie**, **Reggie**, **Lucky**, **Bonzo**, and **Willie**, they may not realize they're helping to memorialize cherished rats.

The two pairs of three rodent brothers found their way into the heart and home of **Christine Hayward** after she went searching for a quiet companion who met her apartment's pet regulations. A first-time rat parent when she adopted Lucky, Bonzo, and Willie from Dane County Humane Society, Hayward quickly fell in love with the species.

"I brought them home and I thought, I just got three rats, am I nuts?" Hayward recalls. "But they became the sweetest guys. They are very smart and very loving."

Hayward enjoyed several years with the first trio before their passing, then adopted a second set of brothers, Louie, Sammie, and Reggie. She can rattle off instances of the rats' silly antics, from teaching them how to walk on two feet and spin, to feeding their affinity for peas, noodles, and ice cream.

There were tender moments as well. Hayward remembers one evening when she wasn't feeling well and Louie was also ailing, when Reggie seemed to take on the role of caregiver. "I was lying in bed and Reggie would come in almost to the dot every 15 minutes to sniff me and wait until I acknowledged him, go back to Louie and play with him, then come back to me and then play with Louie," Hayward says. "I thought, a rat is making sure the two of us are okay — this is crazy."



NIK HAWKINS

Students analyze a hypothetical patient case in the active learning room of the Renk Learning Center. Through a gift to the School of Veterinary Medicine, Christine Hayward named two workspaces in the room in honor of her pet rats.

Several of Hayward's rats were patients of UW Veterinary Care, where she says positive experiences inspired her to support the School of Veterinary Medicine and hospital. Hayward was especially touched by the compassionate approach of **Anna Martel DVM'15**, then a resident in zoological companion animal medicine, who established immediate rapport with the typically shy rats.

"You can tell when someone genuinely loves animals and she clearly did," Hayward says. "The time that she took with them and how much they bonded with her and so quickly, it was just amazing."

When Sammie became ill and passed away suddenly, Hayward says Martel called her immediately to express sympathy. "Sammie wasn't even one of the rats she was treating. That shows how compassionate your team is."

To help train tomorrow's veterinarians, Hayward named two pods in the school's active learning classroom, where small groups of students work through patient case studies using a team-based approach. She also recently documented an estate gift to support the greatest needs of the school and Special Species service. At 33, Hayward may not be among the typical demographic planning her estate, but she says it feels good to be able to give when she's younger and see her gifts at work, while also considering her long-term impact.

"To me it's important that animals are helped in the best way possible and I think a wonderful way to do that is to give both in my living years, which I hope go on for a long time, but in my legacy as well, so that amazing, compassionate vets can come out of your program and continue to help all different types of animals," she says.

# WHEN CELEBRATING ONE PET HELPS MANY OTHERS

*Gifts made in honor of animal companions fund critical health care studies*

**B**etter seizure medications, more effective pain control, improved surgical methods, new insights into debilitating diseases — many advancements have emerged from the UW School of Veterinary Medicine's Companion Animal Fund. These research findings are helping pets live longer, healthier lives, and they all began with a gift in honor of a beloved animal.

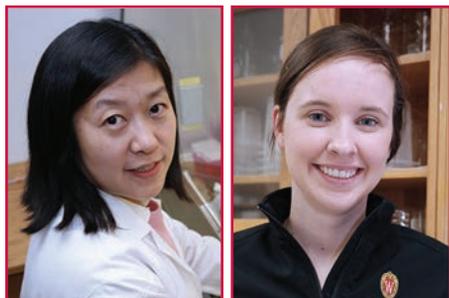
For 30 years, Companion Animal Fund grants have been awarded to SVM faculty studying specific aspects of animal health to improve treatment outcomes.

The fund is a true cycle of compassionate support and academic innovation. Donations most often

originate as gifts made in honor of pets who have passed away. Gifts come from veterinary clinics that have cared for the animals and established strong ties with the school, as well as individual donors honoring animals. In 2019, the fund awarded \$182,000 to 21 faculty members.

On the program's 30th anniversary, we highlight just some of the ways the fund has benefited the school's clinical faculty and research students, and brought tangible improvements to animals in our care and around the world.

*Denise Garlow*



**Left:** Assistant Professor Xuan Pan studies novel anti-cancer therapies.

**Right:** CAF grants often support resident research projects, helping to train the next generation. Elizabeth Wood, a medical oncology resident in Pan's lab, received a Veterinary Cancer Society grant based on work she did with CAF funding.

## *Supporting Oncology Research and Residents*

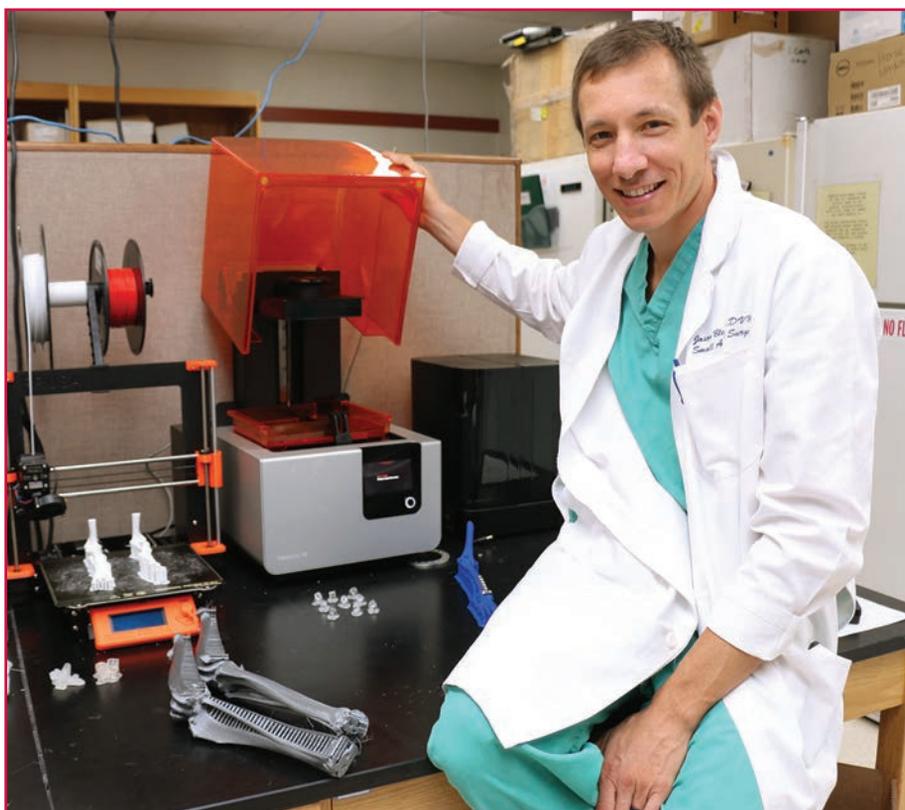
**Xuan Pan**, an assistant professor in the Department of Medical Sciences, has applied her Companion Animal Fund (CAF) grants toward finding optimal dosing regimens of new treatments for dogs with diffuse large B-cell lymphoma (DLBCL). This aggressive blood cancer is the most frequent lymphoma type in dogs. In people, it is the most common type of non-Hodgkin lymphoma. More effective therapies are needed because traditional chemotherapy treatment for the disease is associated with poor overall survival.

Pan used her 2017 CAF award to collect preliminary data for a pre-clinical study of the drug Pevonedistat for the treatment of canine DLBCL. She then used her 2018 grant to conduct an initial Phase I clinical trial of Pevonedistat in dogs diagnosed with the disease — the first known study of the drug's efficacy in dogs.

Dogs are referred to the study from UW Veterinary Care's Oncology service. For the hospital's team of oncology residents (graduate veterinarians pursuing specialized training), studies such as this are an opportunity to work as clinician-scientists. Residents evaluate patients to confirm that dogs meet the study criteria and present and publish research findings, an important criteria for earning board certification. Data from Pan's CAF studies was presented at the Veterinary Cancer Society's annual meeting and published in the *Veterinary Comparative Oncology Journal*.

"By funding our CAF grants, we are able to generate new targeting therapy treatments for canine lymphoma and also train the next generation of veterinarian scientists," Pan says.

By funding our CAF grants, we are able to generate new targeting therapy treatments for canine lymphoma and also train the next generation of veterinarian scientists.



**Above and right:** Jason Bleedorn has created an in-house 3D printing service in the School of Veterinary Medicine that makes pre-surgery models for use by clinicians at UW Veterinary Care and across the country. He especially enjoys problem-solving bone deformities and specializes in models using external fixators – a bracing system for repairing bone fractures and deformities.

## A 3D Printing Service Is Born

For **Jason Bleedorn**, an interest in bone deformity honed during a surgical internship in 2007 led to his current passion for three-dimensional (3D) printing and modeling. A clinical associate professor in the Department of Surgical Sciences, Bleedorn has received three Companion Animal Fund (CAF) grants over the last seven years, most recently to evaluate patient-specific, 3D-printed cutting guides for use in surgical treatment.

This support has enabled him to develop a 3D printing lab at the School of Veterinary Medicine (SVM) and grow a printing service. Bleedorn creates models for use in teaching anatomy to SVM students and serving clients of UW Veterinary Care’s Dentistry and Surgery services. He also consults on cases with other schools of veterinary medicine, making and shipping bone models and surgery cutting guides to collaborators in research and clinical cases.

“As someone who is in the clinic a lot, I have less time to write research grants or run big research projects,” Bleedorn says. “The CAF grants have given me the support to work on useful clinical applications that make a difference in the quality of care.”



**Bottom:** Bleedorn’s 3D printing lab creates custom, patient-specific cutting guides to ensure that cuts are executed precisely during surgery. The stereolithographic material can be sterilized in an autoclave for use in surgery.

“  
The CAF grants have given me the support to work on useful clinical applications that make a difference in the quality of care.”

## Discovering the Genetic Architecture of Disease

**Peter Muir**, the Melita Grunow Family Professor of Companion Animal Health, has been awarded a total of seven Companion Animal Fund (CAF) grants dating back to 2007. He oversees the Comparative Orthopaedic Research Laboratory at the SVM, where current projects include genome-wide association studies of canine cruciate rupture and laryngeal paralysis. These studies scan markers across the complete genome of many dogs to locate genetic variations associated with disease.

Muir's 2010 CAF grant aimed to identify genetic markers associated with cruciate rupture, which would help detect at-risk dogs and facilitate selective breeding strategies to minimize disease risk. Cruciate rupture, caused by fiber tearing in the cranial cruciate ligament in the knee, is the most common cause of hind limb lameness in dogs. "Several billion dollars a year are spent by dog owners on expenses attributed to the condition," says Muir.

Muir's 2015 CAF-supported research explored the genetic correlation between copy number variations — structural alterations to the genome that result in duplication or deletion of DNA segments — and increased risk of cruciate rupture. Based on data generated from this work, lab members applied for and received an extramural grant from the Morris Animal Foundation and a prestigious mentored research scientist award from the National Institutes of Health to continue their studies.

"Leveraging the CAF work into foundation, federal, and institutional training grants for clinician scientists is a rewarding outcome," Muir says.



MEGHAN LEPISTO

Amy, a West Highland White Terrier, will serve as the reference genome for her breed through research supported by the Companion Animal Fund.

Currently, the lab is working with the UW Biotechnology Center DNA Sequencing Facility to assemble the genome *de novo* for the West Highland White Terrier breed, a goal of their most recent CAF grant. Constructing reference genomes from multiple dog breeds with different evolutionary backgrounds will help researchers illuminate genomic differences between breeds and better understand breed-related canine diseases.

"Costs have plummeted; you can do a high-quality genome assembly for \$5,000. It has gone from billions to thousands," Muir notes. "Today one CAF award can cover the cost of an assembly — simply amazing."

## Proof That a Little Can Go a Long Way

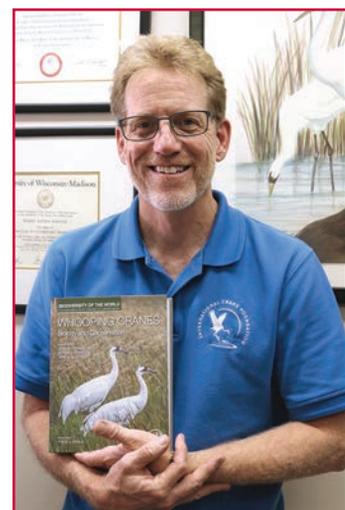
Occasionally the Companion Animal Fund (CAF) has supported research into species not traditionally considered companions if the work will yield important insights for veterinary medicine. **Barry Hartup DVM'93**, a clinical instructor of zoological medicine, is a testament to the decades-long lasting effects of two such grant awards.

Hartup received CAF support in 2008 and 2011 and is still citing the resulting findings in publications eight years later; most recently in the *Journal of Wildlife Diseases*. He serves as director of conservation medicine for the International Crane Foundation, headquartered in Baraboo, Wisconsin, but his research takes him to far-away places and has fostered collaborations with organizations including the U.S. Geological Survey and Canadian Wildlife Service.

"What we know about whooping cranes is based mostly on observation," he says. "CAF helped me get into the field and funded health assessment studies of these endangered birds. These studies, performed in their native habitats, had never been done with this species."

Nine peer-reviewed journal articles stemmed from data Hartup collected with CAF funding, as well a book chapter and multiple conference presentations.

"It made a lot of things possible," he says. "It helped me get projects off the ground and leverage bigger directives and cooperative efforts. You'd be amazed at how much good-quality published information and knowledge we get for the dollar through the Companion Animal Fund."



DENISE GARLOW (2)

Barry Hartup's chapter in *Whooping Cranes: Biology and Conservation* — a result, in part, of work supported by the Companion Animal Fund — is considered essential reading in the world of crane conservation biology.



Veterinarians Mary Kraft, Erin Haroldson, and Natalie Schweitzer, from left to right, of All Pets Veterinary Clinic hold a few of the many thank you cards they've received from clients whose pets the clinic has memorialized with a gift to the Companion Animal Fund.

## Clinic Sponsors Drive Companion Animal Fund

The UW School of Veterinary Medicine receives tremendous support every year from veterinary medical clinics that make a donation to the Companion Animal Fund (CAF) when a client's pet has passed away. These donations are kind and thoughtful gestures at times of great sadness and loss.

All Pets Veterinary Clinic, located in Middleton, Wisconsin, has been a Companion Animal Fund clinic sponsor for the last 25 years. "When we opened in 1995, we were happy to have a way to provide a tribute," notes **Mary Kraft DVM'90**. "Many owners are thankful for their pet being memorialized. That the CAF program also helps find cures and better treatments for companion animals is all the better."

**Erin Haroldson DVM'04**, also with All Pets, says clients are surprised and happy to learn that a Companion Animal Fund gift made in honor of their pet will go toward research supporting companion animals.

"More often than not we get thank you cards in the mail. People don't send mail anymore, so that says a lot about the program," she says. "Sometimes we get two cards — the first for helping them through a difficult time, and the second one thanking us for giving a memorial gift in honor of their pet after they receive a letter about the gift."

"CAF reaches to better places and obtains a greater good," concurs another partner with the All Pets team, **Natalie Schweitzer DVM'11**.

The School of Veterinary Medicine is grateful for Companion Animal Fund clinic sponsors who share in our efforts to ensure that all companion animals lead longer and healthier lives. Thank you to the veterinary medical clinics, at right, for their generous participation in the Companion Animal Fund Clinic Sponsor Program from July 1, 2018 through June 30, 2019.

## Companion Animal Fund Clinic Sponsors

Years of Clinical Participation  
Effective June 2019

### 30-35 Years

Appanasha Pet Clinic  
Dodgeville Veterinary Service  
Hartford Animal Clinic Inc  
Omro Animal Hospital  
Park Pet Hospital  
Shorewood Animal Hospital  
Thiensville-Mequon Small Animal Clinic  
Wright Veterinary Service

### 20-29 Years

All Paws Animal Hospital  
All Pets Veterinary Clinic  
Animal Hospital of Oshkosh LLC  
Country View Animal Hospital  
Family Pet Clinic SC  
Jefferson Veterinary Clinic SC  
Kaukauna Veterinary Clinic LLP  
Layton Animal Hospital  
Loyal Veterinary Service  
New Berlin Animal Hospital Ltd  
Northside Veterinary Clinic  
Oregon Veterinary Clinic  
Pewaukee Veterinary Service SC  
Tecumseh Veterinary Hospital  
West Salem Veterinary Clinic Inc.  
Woodland Veterinary Clinic

### 10-19 Years

Bark River Animal Hospital  
Lake Country Veterinary Care  
Muller Veterinary Hospital  
New Canaan Veterinary Hospital  
North Country Veterinary Clinic Ltd  
Russell Veterinary Hospital PC  
Token Creek Veterinary Clinic  
Wittenberg Veterinary Clinic  
Companion Animal

### 1-9 Years

Delafield Small Animal Hospital  
Dr. Noah's Ark Veterinary Clinic  
High Cliff Veterinary Service  
Lakeside Veterinary Medicine  
Marshfield Veterinary Service  
Metro Animal Hospital  
Northwoods Animal Hospital  
Olde Naples Animal Wellness Center  
Queen Creek Veterinary Clinic

# GRATEFUL CLIENTS GIVE BACK



Mickey Michuda and her cat Charlie.

## Loyalty at Length

**Mickey Michuda** hasn't always been a cat person. It was dogs who first held her heart, until she met her late husband Jim Baughman in 1990.

As Michuda and Baughman began spending more time together, she says it was as if she was also being courted by his cat, **Andre**. "That cat won me over. He was quite the little bon vivant."

She recalls one dinner date at Baughman's house where she sat in the kitchen while Jim cooked. All the while, Andre sat attentively in the chair next to her. "Jim said it was like his roommate was homing in on a date," she laughs.

Following Andre's passing there was **Carla**, a kitten taken in as a stray, then two additional cats, **Grady** and **Sammy**.

Through the years, UW Veterinary Care has served as their home base for annual checkups and other veterinary medical care. A proud alumna of UW-Madison, Michuda valued the campus connection. "I am incredibly proud of this university. And the fact that we have a vet school here makes it even better," she says.

Michuda also appreciated the chance to help teach the next generation of veterinarians.

"I thought as long as my cats have to come to a vet, they might as well come to where somebody else could benefit, in addition to knowing I'd get good care," she says. "I loved it. The vet students were all superb."

In appreciation of the care received in the hospital, and in particular the compassionate approach of veterinarian **Sandi Sawchuk** of the Primary Care service, Michuda has made an annual gift to the UW School of Veterinary Medicine for 24 consecutive years. She especially takes joy in ordering the school's annual holiday cards to distribute good cheer to four-legged members of her extended family. "I send them to my animal relatives and sign it with the cats' names," she says.

Michuda also recently purchased four bricks (one for each of her past felines) in the Walk of Honor that welcomes clients to the small animal hospital, and she has pledged a leadership-level gift for the next five years to the Feline Health Fund. This fund supports research aimed at improving the health and well-being of cats through better diagnostics, treatment, and prevention of a broad range of common diseases and conditions.

These are just some of the ways Michuda gives back to both animals and people. She has since relocated from Madison to Cedarburg, where she serves as a cat socializer and animal care volunteer with Wisconsin Humane Society. She also helps children and adults with special needs at Helping Hands Healing Hooves, a therapeutic equine-assisted riding program. While living in Madison she served in similar roles with Dane County Humane Society and the therapeutic horsemanship center Three Gaits, Inc.

"It's very, very rewarding," she says.



We have such an outstanding vet school and I want to see it flourish and help in my own way.



## *'A Culture of Compassion'*

When **Geri Naymick** learned that a memorial gift had been made to the School of Veterinary Medicine (SVM) in memory of her cat **Cocoa Puff** by the team at Oregon Veterinary Clinic, she was beyond moved.

"I was so touched, because it really changed my focus," she recalls. "You go through this whole grieving process, but you want the memory to be positive."

For more than 20 years, Oregon Veterinary Clinic has honored patients upon their passing with gifts to the SVM's Companion Animal Fund. The positive feelings that Naymick experienced are exactly what **Jim Stevenson DVM'00** and his colleagues hope to inspire through donations to the fund.

"We have clients who come in with their animals over long periods of time and these gifts are just one thing we can do to show that we recognize their good care of their animal companions," he says. "It shows clients we care and it continues the animal's life a little bit."

Stevenson co-owns Oregon Veterinary Clinic with **Rachel Orvick DVM'00**. The clinic's six veterinarians are all alumni of the SVM. The Companion Animal Fund's mission — to support a range of health care studies to advance the diagnosis, treatment, and prevention of diseases that afflict companion animals — resonates with these alumni. "As graduates, we're very supportive," Stevenson says.

When a gift is made to the Companion Animal Fund, the recipient is notified of the donation through a letter from the school's dean, **Mark Markel**. Clients have told Stevenson that learning of the gift and its impact in their animal's name holds special meaning. "They've maybe gotten over the acute pain of the animal's loss and it makes them feel good that some bit of good came out of their pet's passing," he says.

For Naymick, the clinic's gift in honor of Cocoa Puff inspired her to think more broadly about her own legacy and that of her animals. She has since included the SVM in her will, driven by the "culture of compassion" that she says she experienced with Cocoa Puff at UW Veterinary Care. "When it came to looking at my will and estate, I thought what can I do that would have a lot of meaning? I wanted to have a positive memory and legacy, and I think that's what this gift is."

After Cocoa Puff developed heart complications in the summer of 2017, he was referred to UW Veterinary Care's emergency and critical care unit, where he required overnight hospitalization. As a retired pharmacist with extensive experience in health care facilities, Naymick was struck by the patience, kindness, and expertise exhibited at the teaching hospital.

"I worked in a hospital and I know what it means to connect with and care for patients, but here I saw it in a different context," she says. "I saw so much compassion on the part of the vet staff and I saw the gratitude that people had for the care."



Naymick's beloved cat Cocoa Puff.

“When it came to looking at my will and estate, I thought what can I do that would have a lot of meaning? I wanted to have a positive memory and legacy, and I think that's what this gift is.”

A few specific gestures, such as being able to return to the hospital with a familiar toy for Cocoa Puff to provide comfort during his stay and a reassuring call from a veterinary medical student early the next morning still stick out in Naymick's memory. "It meant so much," she says.

Following several months of treatment and palliative care in coordination between UW Veterinary Care's Cardiology service and the Oregon Veterinary Clinic, Naymick said goodbye to Cocoa Puff in fall 2017. With her medical background, she says she was reassured by the innovative, evidence-based approach she encountered at both clinics and she is proud that her estate gift will help train future generations of veterinarians like Stevenson and his team.

"When the school was treating Cocoa Puff, I had so much faith in them," she says. "And the fact that my vets had a connection with the vet school, they were able to provide that same kind of high-quality, cutting-edge treatment. I really saw the expertise and clinical judgment."

Stevenson has been honored to learn of occasions where Companion Animal Fund gifts have triggered additional generosity.

"We give these small gifts frequently that over time accumulate," he says. "In some ways, it helps multiply itself; certainly in Cocoa's case it did. And the best benefit is that the Companion Animal Fund uses that money in really good ways to further veterinary medicine."

### Veterinary Medicine Professor Leads Largest Biomedical Coalition



**Hannah Carey**, a professor of comparative biosciences in the UW School of Veterinary Medicine and trainer in the Comparative Biomedical Sciences graduate program, became the new president of the Federation of American Societies for Experimental Biology (FASEB) in July. FASEB was formed in 1912 and now represents 29 scientific societies with a membership of

more than 130,000 researchers worldwide.

The new FASEB president, who studies hibernating mammals, answers several questions in this edited interview.

---

**“We must continue to develop better ways to help the public understand what we do and why it matters.”**

---

**You’ve worked on hibernation for most of your career. What is the most significant result from that work?**

We and our colleagues have demonstrated that a natural adaptation that enables some mammals, including bears and ground squirrels, to survive a long winter dramatically changes their physiology and metabolism during a period when they neither eat nor drink.

We’re still pursuing the ultimate roots of this adaptation, but we’ve shown that it helps a variety of tissues resist tissue damage caused by the stoppage and restoration of blood flow. This so-called reperfusion injury can occur during surgery, organ transplants, strokes and heart attacks, to name a few, so it’s got practical importance.

This stress resistance can persist when hibernating squirrels are in the aroused phase, when body temperature returns to normal levels for brief periods throughout the winter. And while we still don’t know how to apply this stress resistance in medicine, hibernation still has lessons to teach. We are now studying how the microbial population in the gut changes with hibernation status and how those changes affect the animal’s biology.

**What do you bring to the FASEB position, and why would you spend valuable time on federation activities?**

I’ve been involved in one way or another with professional scientific societies for all of my career in Madison. I am a past president of the American Physiological Society, one of the founders of FASEB. I view serving the organization as a way to help maintain our discipline’s voice in science policy, advocacy, and research funding. And it helps pay forward by supporting the next generation of scientists.

Only four other women have served as president of FASEB, and it’s important to have women, and other underrepresented groups, in scientific leadership roles.

**As you ponder the role of science in public life, how do you deal with changing public attitudes toward data, facts, and evidence? All of these are fundamental to the scientific enterprise.**

This is exactly why it’s important that scientists take time to speak to the public, and to meet elected officials in their districts or on Capitol Hill. We need to explain in a concise, understandable way what we do and why it has value. Professional societies can make this task easier.

If the scientific community keeps to itself, people may not understand how we strive to generate significant, accurate, and repeatable results that can lead us to reliable conclusions about the world around us, including how living beings like ourselves work. We must continue to develop better ways to help the public understand what we do and why it matters.

**How else is FASEB working on the credibility issue?**

One focus is reproducibility. Generating and reporting methods and results that other investigators can reproduce is the crux of the scientific method. However, legitimate questions have arisen about rigor in science. FASEB’s recent report, “Enhancing Research Reproducibility,” addressed this issue through a series of dialogues with member scientists, federal agency representatives, and other experts to consider ways to enhance reproducibility and address public concerns. These recommendations were distributed widely to researchers, institutions, professional societies, journals, federal funding agencies, as well as on Capitol Hill.

The benefits of science — to health, the economy, to society — are all around us, but we can’t assume that everybody is familiar with them. And at the bottom line, it’s largely taxpayer money that supports our nation’s scientific enterprise. We owe this.

*David Tenenbaum*

## Celebration Fit for a Laureate

In July the School of Veterinary Medicine (SVM) welcomed **William C. Campbell MS'54, PhD'57**, co-recipient of the 2015 Nobel Prize in Physiology and Medicine, back to campus to recognize him for his many contributions to the University of Wisconsin–Madison and beyond.

The celebration featured remarks from Chancellor **Rebecca Blank**, Dean **Mark D. Markel**, and other representatives from the SVM and campus communities.

Campbell and Satoshi Omura received the Nobel Prize in Physiology and Medicine for the discovery of the drug avermectin (and its derivative, ivermectin). These drugs were found to be highly effective against a wide variety of parasites, with enormous impact on both veterinary and human medicine. Today, ivermectin and related derivative drugs are responsible for alleviating the burden of many parasitic infections in domestic livestock, companion animals, and, most notably, in millions of people worldwide suffering from elephantiasis and river blindness.

Campbell's interest in, and research on, parasites and parasitic diseases started as a graduate student at UW–Madison in the Department of Veterinary Science, the precursor to the SVM's Comparative Biomedical Sciences graduate program. Campbell recently provided a gift to the university to establish the William C. Campbell Excellence in Parasitology and Vector Biology Award, which will support an annual award for graduate student training and research in the areas of parasitology and vector biology.



Chancellor Rebecca Blank, William C. Campbell, and Dean Mark D. Markel.

DENISE GARLOW

## In Memoriam

**The UW School of Veterinary Medicine regrets to announce the loss of a former faculty member.**

**John R. Andersen** passed away in August. In 1970, Andersen joined the UW–Madison Department of Veterinary Sciences, where he became professor emeritus after serving as extension veterinarian for 26 years.

## From the CBMS Director

### New Faculty and Initiatives Bolster Graduate Program



The Comparative Biomedical Sciences (CBMS) graduate program had a laudable 2018-19 academic year in a variety of ways.

The interdisciplinary breadth of the program was expanded with the addition of new trainers who add strengths in the disciplines of fungal immunity, lupus and autoimmunity, bone remodeling, bioinformatics, toxicology and ecology of

toxins, developmental biology, and neurobiology. As in the past, graduate students in the program were successful in garnering highly competitive fellowships from the National Institutes of Health and the National Science Foundation.

I am also pleased to report that CBMS launched initiatives to support the professional development of graduate students, including the award of dissertation fellowships, biannual travel fellowships to attend and present in scientific conferences, and financial support to

attend workshops and learn new and emerging technologies.

This summer, the parasitology and vector biology trainers of the CBMS program welcomed back to campus William C. Campbell, an alumnus of the program (previously known as Veterinary Science). The event was a great opportunity for graduate students to meet, greet, and get inspired by Campbell.

This fall, the CBMS program invited an outstanding group of incoming graduate students. In the year ahead we will strive to sustain and enhance the professional development of graduate students and explore avenues to foster an environment that promotes inclusiveness, sound professionalism, and integrity.

A handwritten signature in black ink, appearing to read 'M. Suresh'.

**M. Suresh**

John E. Butler Professor in Comparative and Mucosal Immunology,  
Department of Pathobiological Sciences  
Director, Comparative Biomedical Sciences Graduate Program

## ‘Humbled to Have the Opportunity to Make a Difference’



**Doug Kratt DVM'98** didn't set out to become a veterinarian. With a knack for math, he envisioned a career in data management. As an undergraduate he also worked at Walt Disney World through the company's college exchange program, learning firsthand how to deliver an exceptional customer experience.

His time at the happiest place on Earth inspired a renewed drive. He returned

to campus at UW-La Crosse focused on merging two other subjects he enjoyed — science and animals — by pursuing a career in veterinary medicine.

Since 1998, Kratt has served as a small animal practitioner and owner of Central Animal Hospital in La Crosse. Building on several leadership positions with the Wisconsin Veterinary Medical Association (WVMA) and American Veterinary Medical Association (AVMA), in August he was selected as the 2019-20 AVMA president-elect.

As Kratt prepares to take the helm of AVMA, one of the oldest and largest veterinary medical organizations worldwide, he spoke with the school about his path to the presidency and his passion for supporting the profession and fellow veterinarians.

**On Call: What does it mean for you to represent Wisconsin and veterinary medicine in this role? And how will your experience at the UW School of Veterinary Medicine benefit you?**

**Kratt:** It's a huge honor to be elected. And it's a huge honor to feel that I would represent Wisconsin; Wisconsin is my roots completely. I represent our whole profession in this role, so I'm humbled to have the opportunity to make a difference.

I've said it numerous times — I'm where I am because I went to the University of Wisconsin School of Veterinary Medicine. I still have friendships with classmates, I've stayed close with instructors, and I've been fortunate to work with all three deans of the school during my time as a student and in my leadership within Wisconsin and at the national level. Those relationships have taken me to where I am today.

**Looking ahead to 2020, what do you see as important initiatives to undertake as AVMA president?**

There are numerous challenges affecting our profession. How we handle those challenges is what defines us. There

are economic issues, such as graduate debt load and being able to make a living and thrive, and some are worried about consolidations within our industry. Not completely separated is the mental health and wellness aspect, which we hear about on a daily basis.

I do see positives around mental health and wellness — we are now talking about it, versus a decade ago when those conversations were in more hushed tones. And we have active initiatives and are able to diagnose the problem, so to speak, and come up with treatment plans.

It is my belief that we need to listen and have open lines of dialogue and communication with the membership. Sometimes we get caught up in 'knowing' what everyone needs and not listening to what they want. It's my job to help steward that.

---

**“We need to advocate for ourselves and our profession. If we aren't members together, we don't have as strong of a unified voice.”**

---

**Why is it important to be part of organized veterinary medicine and what advice would you share with others to get involved?**

I use the symbolism of Lego blocks. We're all blocks in the build of our profession. If we can work together, we can accomplish great things. If we're individuals out there, we lack the knowledge base and can't have that group think.

I think it's really important to come together to discuss issues. And we need to advocate for ourselves and our profession. If we aren't members together, we don't have as strong of a unified voice. It gives us a community and resources we wouldn't have if we were sitting on an island by ourselves.

In Wisconsin and a lot of the Midwest there are local veterinary medical associations. That's where I started; I got to meet colleagues and ask them questions. Being able to talk in a casual setting with people going through what you're going through, it's a bit of a support network. Up the line, WVMA is a strong and thriving organization and is always looking for volunteers at different levels, with different time commitments.

**Your wife, Kimberly Kratt DVM'00, is also an alum and you work together at Central Animal Hospital. What has it been like for veterinary medicine to be a shared profession and family affair?**

It has overall been fantastic. We get to talk about our cases and we have a better understanding of what each of us is going through on a daily basis, including raising a family together.

That we would work together wasn't our intent when we got married. In fact, it was probably our intent not to work together. But at this point in my life, I don't know how it could have worked out any better than it has, being able to navigate this journey together.

Veterinary medicine has been great to my family. It allows us to participate in organized veterinary medicine, to give back to our communities, and to live our life fulfilled.

**You mentioned supporting the community. Why is that an important aspect of your work?**

I think we all want to live in enjoyable places. And to put roots down you need to be part of the community. We've been involved with Oktoberfest, a local festival that makes millions of dollars of economic impact in our community; we give back to the police canine units; and we've done work for animal shelters and other charities.

If we can all do our part to make our small sphere better, I believe that's infectious. And I think that's our job as veterinarians, to not just take care of the animals, but

to take care of ourselves and the people around us. We can raise that bar and buoy everybody up along with us.

**Is there anything else you'd like to share?**

I want people to realize we are in one of the best professions and to get involved however they best see fit. I was told early on if we don't take on some of the challenges meeting our profession, who's going to do it for us? And will it be part of our profession that does it, or will we give that away? I just want people to stay engaged, do what they can, and ask questions and ask for help. We can do this together.

*Meghan Lepisto*

## In Memoriam

**The UW School of Veterinary Medicine regrets to announce the loss of an alumnus.**

**Craig Schley DVM'00** passed away in July as a result of a motorcycle accident. Schley met his wife Rachel Orvick DVM'00 at the SVM; they were married in 2003. The couple had two sons, Oliver and Alexander, who were Schley's pride and joy.

## A Message to DVM Alumni

### Building Something Mighty



One of my favorite lyrics comes from an Indigo Girls song — "The Mississippi's mighty but it starts in Minnesota at a place that you could walk across with five steps down." As I think about the School of Veterinary Medicine's building campaign, I can't help but reflect on this idea that big things start small — and they become great because they connect with others.

There's been talk of an expanded SVM building for some time. Over five years ago, that project began in earnest with a feasibility study to determine the school's needs and potential in terms of space and equipment. From there, the project grew with support from alumni like you who partnered with other friends of the school to donate to and advocate on behalf of the building campaign. Those efforts combined with support from UW–Madison, UW System, and Board of Regents leaders who

learned more about the school and the constraints of our current facility and made the expansion project a priority. Then others got involved, including, critically, state elected officials, who this summer included our expansion project in the state budget.

And so here we are with a goal that is becoming a reality. As I write this, construction vehicles are tearing up pavement in the east half of Lot 62 to make room for a five-story parking garage that will allow space for the expanded School of Veterinary Medicine. Architects are here every other week to learn more about our needs so they can design an expansion and remodel that will support the school for the next 30 years. Shovels should be in the ground for the expansion in spring of 2021.

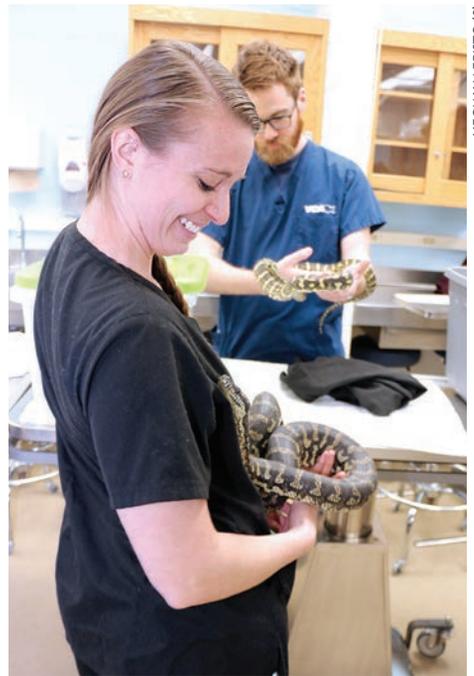
Collectively, we have done something mighty. Thank you.

*Kristi V. Thorson*

**Kristi V. Thorson**

Associate Dean for Advancement and Administration

## In the Classroom



MEGHAN LEPISTO (9)



## All Creatures Great and Slithery

From python snakes to painted turtles to crested geckos and frilled-neck lizards, each spring third-year students at the UW School of Veterinary Medicine gain vital hands-on experience with a variety of reptiles as part of a required exotic animal course. The class includes several live-animal handling sessions devoted to small mammals, birds, and reptiles.

The labs teach students how to handle and conduct wellness exams on the species, many of which are kept as

household pets and are likely to be encountered in future clinical practice. “If students are not comfortable handling and examining these animals, how are they going to provide veterinary care for them?” says **Christoph Mans**, clinical associate professor of zoological medicine.

The sessions provide a relaxed environment to practice examining the animals comfortably, safely, and with as minimal stress as possible — for both patient and practitioner.

# Awards & Honors

## Lifetime Achievement Award



**Karen Young**, clinical professor of clinical pathology at the UW School of Veterinary Medicine, has been named the 2019 recipient of the American Society for Veterinary Clinical Pathology Lifetime Achievement Award. The award recognizes members of the society who have contributed greatly to the advancement of the field of veterinary clinical pathology. It was presented to Young at the organization's annual meeting in November in San Antonio, Texas.

Young, a member of the School of Veterinary Medicine faculty since 1985, has taught over 2,500 veterinary students, mentored 20 clinical pathology trainees, authored 40 pathology book chapters, and published 40 pathology-related scientific articles.

"During my three years as a resident, I was endlessly impressed with every aspect of Dr. Young as a pathologist. She was incredibly knowledgeable in the field of pathology but remained endlessly inquisitive," Erica Behling-Kelly, now an associate professor at Cornell University, writes in nominating materials for the award. "I take pride in saying I was trained at Wisconsin, because I think across our profession the caliber of the program she leads is well recognized, as is her skill set as a pathologist."

"Through selfless service, Dr. Young prepares her students, academic institutions, and our profession to face the challenges of the future with hope and optimism," adds **Kristen Friedrichs DVM'91**, clinical associate professor at the SVM.



NIK HAWKINS

## Other Notable Honors

**Tim Yoshino**, professor emeritus of parasitology, is the recipient of the 2019 Distinguished Service Award from the American Society of Parasitologists, a diverse group of scientists from academia, industry, and government involved in the study and teaching of parasitology.

**Chad Vezina**, professor in the Department of Comparative Biosciences, has been honored with a Vilas Faculty Mid-Career Investigator Award from UW–Madison, recognizing research and teaching excellence.



MEGHAN LEPISTO

## Employer Support of Guard and Reserve Awards

In September, Colonel Mike Williams, Wisconsin state chair for Employer Support of Guard and Reserve, presented **Lynn Maki**, associate dean for student academic affairs at the UW School of Veterinary Medicine, with the Seven Seals Award and Patriot Award for the school's outstanding support of DVM student **Paris Bassett** throughout her military duties. A member of the Class of 2021, Bassett is part of the Wisconsin Army National Guard and has been deployed to service in Afghanistan.



ANDREW HELLPAF

## African University Gets Course on Pollution Problems

**C**ommunities in Sierra Leone will have more tools to combat serious pollution and contamination issues with the help of a course created by graduate students at UW–Madison.

The curriculum, built by nine toxicology graduate students, was designed as a user-friendly guide to different pollutants specific to the northwestern African country, as well as ways to minimize their effect.

“The idea is that we would make it here, and then we would hand off the materials to basically anybody,” said Rachel Wilson, one of the lead graduate students on the project. “A facilitator with little to no training in toxicology could teach the course anywhere in the world.”

The curriculum includes activities, games and discussions, and objectives and guidelines for effective teaching, even by non-professional educators.

Sierra Leone’s pollution is severe, but education on toxicology in the country of more than 7 million people is non-existent, according to **Alhaji N’Jai**, a native of Sierra Leone and

fellow in the UW School of Veterinary Medicine’s Department of Pathobiological Sciences.

“This is an area where it’s important, but it’s not being taught in Sierra Leone,” he said, “and there’s a lot of issues from both the human safety aspect, but also there is an environmental health aspect.”

N’Jai said the country suffers from air and water pollution, waste management issues, vehicle emissions, drug and cosmetic pollutants, and heavy metal pollutants that come from the large mining industry — mostly diamond mining — that the country is known for.

“These are all things where we don’t have the capability and the people trained to help communities understand,” he said.

The course is the first formal toxicology education done at the University of Sierra Leone, and was first taught in a classroom this past February by N’Jai. The curriculum was finished in October 2018, but the university’s semester was postponed due to nationwide protests over an election.

“It’s been really positive,” N’Jai said about the first pilot of the course, which has been chosen for inclusion in the university’s regular curriculum. He said he knows the class is important because of the dedication of the students, some of whom travel hours on public transportation to get there, others who walk from their jobs to attend.

The instructional effort will be expanding by reaching out to younger children at workshops, offering certificates to professionals, and offering an advanced course for those who want to learn more.

Wilson hopes to travel to Sierra Leone next year before the class is taught again in the spring, hoping to present the curriculum and speak at workshops about the work. She said the project has meant a lot to her.

“This is pretty cool. I feel pretty lucky,” Wilson said. “As a grad student you’re so focused on your tiny little protein, or whatever you’re working on, and when you get to do something that’s actually impacting someone’s life right now — it’s pretty awesome.”

*Olivia Herken, Wisconsin State Journal*

2019



FEBRUARY

**\$5 MILLION**

Morrie Waud Match completed  
(TOTAL IMPACT: \$9 MILLION)

JULY

**\$90 MILLION**

STATE SUPPORT

SVM building expansion project included in State of Wisconsin's 2019-21 budget



AUGUST

Building design planning process begins



OCTOBER

Construction of Lot 62 parking garage begins



**\$15 MILLION**

Commitment from the Wisconsin Alumni Research Foundation (WARF) puts the school over the private giving requirements to initiate construction

TOTAL RAISED TO DATE:  
\$130.6 MILLION  
(\$90M state support,  
\$40.6M private gifts)

2020



DECEMBER

Projected completion of Lot 62 parking garage

2021



SPRING/SUMMER

Projected start of new building construction in area now occupied by Lot 62



School of  
Veterinary Medicine  
UNIVERSITY OF WISCONSIN-MADISON

BECAUSE OF YOU

**WE ARE READY**

**TO BUILD OUR**

**FUTURE**

**THANK YOU** to Governor Evers and the Wisconsin legislature, our alumni and the veterinary medical community, and the generous friends of the school for supporting the UW School of Veterinary Medicine's building expansion project. The construction of this critical new space would not be possible without you.

Our work to support this project does not end here. We will continue to fundraise for the specialized equipment that our complex clinical cases, research laboratories, and teaching spaces demand.



KEEP UP WITH OUR PROGRESS:

**ANIMALSNEEDHEROESTOO.COM**



**School of  
Veterinary Medicine**  
UNIVERSITY OF WISCONSIN-MADISON

2015 Linden Drive  
Madison, WI 53706-1102

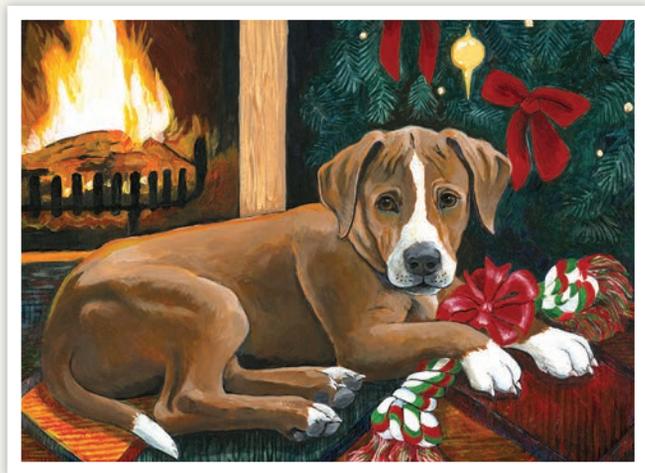
Non Profit Organization  
U. S. POSTAGE PAID  
MADISON, WI  
PERMIT NO. 658

## A Holiday Card that Helps Advance Animal Health

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

Each year, the SVM is pleased to present original artwork for its holiday card fundraiser. This year, “Can’t Wait” (right) features the work of Wisconsin artist Birgit Bach. For a suggested \$10 donation per card, the SVM will send a holiday card to the recipient of your choice — a thoughtful gift for family, friends, neighbors, veterinarians, or even special pets! This heart-warming, full-color card will include a greeting stating that a donation was made to the SVM in the recipient’s name and that proceeds will support projects that advance animal health.

**NEW THIS YEAR**, you can place your order online. To purchase cards online or download an order form, visit [vetmed.wisc.edu/holidaycard](http://vetmed.wisc.edu/holidaycard). Questions may be directed to Marsha Callahan at **608-262-5534** or [marsha.callahan@wisc.edu](mailto:marsha.callahan@wisc.edu).



### Meet the Artist

Birgit Bach has always been inspired by science and nature. Before beginning graduate school, she spent many months in Mozambique where she fell in love with the colors and patterns of the African art she saw there. That influence, along with her passion for animals and the natural world, is reflected in her art. She resides in Madison with her husband, two dogs, two cats, and a horse.