

# On Call

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

## Wholly Devoted

Delivering care to underserved communities and the pets they hold dear

## 'Miracle Mutt'

Shot and abandoned, Sarge is now healed and loved



School of  
Veterinary Medicine

UNIVERSITY OF WISCONSIN-MADISON

CUTTING-EDGE DIAGNOSTICS

# FROM HEAD TO HOOF



IN LATE SUMMER 2018, UW Veterinary Care will begin offering standing x-ray computed tomography (CT) to better meet the needs of our equine patients and improve the diagnosis and treatment of limb conditions and diseases of the head and neck.

**>>This state-of-the-art imaging system is one of the first in the world to provide rapid 3D scans of the legs on a standing horse.**



#### MAJOR BENEFITS INCLUDE:

- > **PATIENT COMFORT:** Scan times are suitable for a sedated horse and do not require anesthesia
- > **PRECISION:** Flexible, highly accurate robotic technology allows easy positioning and imaging of the limbs, as well as the head and neck, in a single session
- > **PREVENTIVE SCREENING:** Ideal tool for early detection and monitoring of stress injuries and prevention of fractures



**UW Veterinary Care**  
UNIVERSITY OF WISCONSIN-MADISON

To learn more, please call our Morrie Waud Large Animal Hospital at 608.263.7600.

## Features



### Wholly Devoted

Two SVM outreach partnerships provide veterinary medical care and other social services to underserved communities in Dane County and Milwaukee, empowering both pets and their people and preserving the human-animal bond.

Page 10



### 'Miracle Mutt'

Found shot and abandoned on a snowy winter morning, Sarge is now healed and loved after orthopedic surgery to repair his fractured elbow and months of tender care by a Michigan animal shelter.

Page 9

### In Each Issue

- 4 Message from the Dean**  
*An Exciting Six Months Ahead*
- 5 Menagerie**  
*A diverse collection of news and information from the SVM*
- 16 Comparatively Speaking**  
*A special section for alumni of the Veterinary Science and Comparative Biomedical Sciences graduate programs*
- 18 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**
- 20 Awards & Honors**
- 21 In the Classroom**
- 22 Supporter Spotlight**

### On the Cover

Johnnie, a six-year-old Collie, stands patiently as Priscilla Naula DVM'20 and certified veterinary technician Heather Bonti deliver care at the Wisconsin Companion Animal Resources, Education, and Social Services (WisCARES) clinic in South Madison.  
(Photo: Meghan Lepisto)



©2018 Board of Regents of the University of Wisconsin System

## An Exciting Six Months Ahead

As highlighted in this issue of *On Call*, the school continues to make important advances in infectious disease research, ranging from the creation of a novel universal flu vaccine and a new Ebola vaccine, both now entering human clinical trials, to collaborative efforts to better understand and combat diseases acquired from vectors such as mosquitoes, ticks, and fleas — an ever more critical issue following news from the CDC that incidences of vector-borne diseases tripled in the United States from 2004 to 2016.

We also continue to seek out ways to improve the veterinary medical education for our students by fully utilizing the new Renk Learning Center. We've implemented new lab sessions, electives, and clinical skills training simulations across a range of specialty areas, increasing students' hands-on experience through all four years of their education and preparing these future veterinarians for the full range of professional opportunities that await them.

And the school remains focused on serving those in need, as you'll read on pages 10-15, including the development of a Pets for Life initiative in Madison — a collaboration of our Shelter Medicine Program and the Dane County Humane Society — which provides door-to-door outreach and veterinary house calls where access to pet wellness resources is limited or nonexistent. Our new, expanded WisCARES facility is also dedicated to serving Dane County pet owners who are experiencing or at risk of homelessness or unable to pay for veterinary medical services.

The next six months will be an exciting time for the UW School of Veterinary Medicine as our building expansion moves through the UW Regent process later this summer, with the goal of being included in the Governor's 2019-21 capital budget request in early 2019. The design for the new parking ramp in Lot 62, adjacent to the school, is slated to begin later this summer, with construction to start in the summer of 2019.

Whenever you have an opportunity, I encourage each of you to come visit the school to learn more about all that we do to serve the state of Wisconsin, whether through the veterinarians we train, the clinical care we provide to our citizen's animals, or the research we conduct to benefit both animal and human health.



Mark D. Markel

## On Call SUMMER 2018

### 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
- Ed Rodriguez**, Associate Dean for Budget and Finance
- Kristi V. Thorson**, Associate Dean for Advancement and Administration
- Ken Waller MS'07, DVM'07**, Assistant Dean for Clinical Affairs

### Editorial

- Editor/Writer:** Meghan Lepisto
- Contributing Writers:** Terry Devitt, Denise Garlow, David Tenenbaum, Kelly Tyrrell
- Photography:** Denise Garlow, 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 608-294-7661 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).

A handwritten signature in black ink that reads "Mark D. Markel". The signature is stylized and cursive.

Mark D. Markel, Dean

## Ask a UW Veterinarian



### Talking Tick Prevention

This expert response comes from **Juliet Caviness DVM'17**, primary care veterinarian at UW Veterinary Care and SVM clinical instructor.

**Question:** Are the ingestible tick preventatives okay to use on tiny dogs? My dogs are under five pounds.  
—Denise, Barrington, Illinois

**Answer:** Tick prevention is a key component of preventative medicine to keep your pet free of parasites and reduce the risk of parasite-transmitted diseases. Tick-borne disease (like Lyme disease or Anaplasmosis) is a very common problem in Wisconsin, which makes year-round administration of tick preventative even more important.

There are many options on the market these days for tick preventatives, ranging from topical spot-on products to collars, sprays, and oral medications. Newer oral products (including brands like Simparica, NexGard, and Bravecto) have been shown to be very effective and can avoid the mess sometimes involved with liquid spot-on products (such as Frontline and Advantix), which are applied directly to the skin, usually between the shoulder blades.

Oral products are very convenient for those who might hold their pets often, have small children, or have dogs who love to swim or are bathed frequently due to allergies or other skin conditions, as one concern with

topical medications is that they must remain in contact with the skin for long enough to be absorbed before the pet can get wet.

On the other hand, an oral medication may not be well-suited to dogs with sensitive digestion, as some dogs may experience vomiting or diarrhea as a side effect. Other limiting factors would include the age and weight of your pet. Some oral products are not labeled for use in very young dogs (Bravecto and Simparica are for puppies six months and older) and some are only labeled for dogs just under five pounds and up, such as NexGard and Bravecto. For the tiniest of adult dogs or older puppies, Simparica is available in 2.8- to 5.5-pound doses.

As always, we recommend that you consult with your veterinarian in choosing the appropriate medication for your pet.

### 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

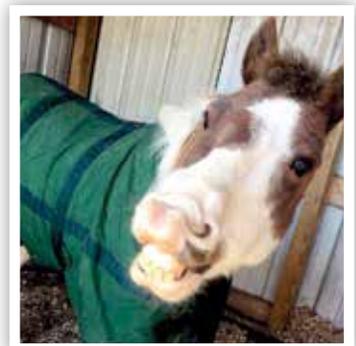
Friends of the school sharing their thoughts (and pets) on social media...



Looks like Riko is recovering very well! Thank you UW Veterinary Care!

—Grant County Sheriff's Office, WI  
(@GrantCtySheriff)

Via UWVC Facebook (@uwveterinarycare)



Daisy was pretty happy to be home after spending 17 days at the UW Veterinary Clinic in Madison! Thank you to all the receptionists, students and veterinarians for the excellent care that was given to Daisy and not giving up on her!

—Lisa Becherer

Via SVM Facebook (@uwvetmed)

## Innovative Vaccines Advanced by World Expert at SVM



Yoshihiro Kawaoka

Two vaccines with origins in the laboratory of Yoshihiro Kawaoka, an internationally known virus researcher at the UW School of Veterinary Medicine (SVM), saw important recent advancements — an influenza vaccine that carries the dual benefits of faster production and broader protection, and a whole-virus Ebola vaccine that offers an important

countermeasure against a disease whose high mortality rate is amplified by a lack of clinically tested vaccines and antiviral compounds.

### Human Trial for Revolutionary Influenza Vaccine

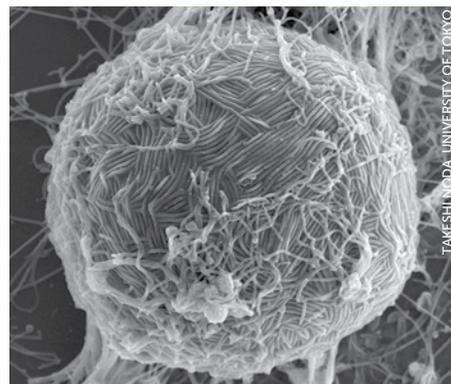
No universal influenza vaccine is currently on the market, but one of the most promising is being developed by FluGen, a spinoff from UW–Madison. The Madison startup evaluated its innovative vaccine in a trial of 100 people this spring.

Due to the long lead time needed to produce vaccines in eggs, today's vaccines must be targeted at viral strains deemed dangerous many months before flu season begins. The problem is that the flu virus can change fast enough to evade those vaccines, undergoing “genetic drift” as it evolves and reasserts

its genetics. Such drift is a major reason why influenza vaccines are only 10 to 60 percent protective.

FluGen's vaccine is made in mammalian cells, not eggs, so faster production should allow less time for genetic drift. Unlike the current vaccine, the virus is alive, and therefore more likely to trigger immunity.

A test of the vaccine in healthy adults, completed in 2016, showed a much broader immune response and no warning flags related to safety. Those results helped to justify a \$14.4 million Department of Defense grant to test



Ebola virus swarms the surface of a host cell in this electron micrograph. Like most viruses, Ebola requires the help of a host cell to survive and replicate.

whether a vaccine based on a 2009 strain of flu can protect against the strains that circulated in 2014-15.

“We're aiming to prove effectiveness after six years of genetic drift,” says CEO Paul Radspinner. The goal is to have initial results by the end of the year.

The essential technology for FluGen's project was discovered by company cofounders **Yoshihiro Kawaoka** and **Gabrielle Neumann**, both at the SVM. Learn more: [go.wisc.edu/flu vaccine](http://go.wisc.edu/flu vaccine)

*David Tenenbaum*

### Ebola Vaccine Inches Toward Clinical Trials

A whole-virus vaccine to confront Ebola, the rare but often fatal hemorrhagic disease that periodically erupts in sub-Saharan Africa, may soon be one step closer to the clinic. With the help of experts at Waisman Biomanufacturing within UW–Madison's Waisman Center, SVM Professor Yoshihiro Kawaoka will lead a \$3 million effort to produce as many as 1,000 doses of an experimental vaccine that has already been proven to work safely in monkeys.

“The goal is to produce a safe and effective vaccine against Ebola virus

for people,” says Kawaoka. The vaccine is planned for use in a phase 1 clinical trial in Japan and is the only whole-virus Ebola vaccine candidate under development.

The technology behind the vaccine was devised by **Peter Halfmann**, a research scientist in Kawaoka's lab who is also an expert on the Ebola virus. It is known as “Delta VP30,” and is a form of Ebola virus that is noninfectious and safe to work with under routine laboratory conditions. The virus is missing a critical gene that makes a protein the virus needs

to reproduce in host cells.

Vaccines work by exposing the immune system to viruses or parts of viruses. The Delta VP30-based vaccine may offer better protection against Ebola virus than others in the pipeline, Kawaoka says, because it is a whole-virus vaccine. Other Ebola vaccine candidates use vector viruses to ferry a single Ebola protein, a surface antigen, to prime the immune system. Read more: [go.wisc.edu/ebolavaccine](http://go.wisc.edu/ebolavaccine)

*Terry Devitt*

## Animal CSI

In April, veterinary medical students participated in the first-ever Animal Forensic Lab at the UW School of Veterinary Medicine, hearing from experts in the field and then practicing firsthand the skills that they learned.

Representatives of UW Veterinary Care, Milwaukee Area Domestic Animal Control Commission, and the Wisconsin Veterinary Diagnostic Laboratory (WVDL) presented on animal forensics and forensic necropsy, common forensic findings, evidence tracking, how a legal case involving animal forensics often proceeds, opportunities for veterinarians to serve as expert witnesses, and examples from the field.

The lab was a collaborative effort of shelter medicine resident **Rebecca Stuntebeck DVM'13**, the shelter animal medicine and pathology clubs, and WVDL.

“All of the feedback was incredibly positive,” says Shelter Animal Medicine Club president **Bailee Stahl DVMx'19**. “Students thought it was an extremely educational experience and a lot of them wanted to spend even more time in the lab.”

## In Memorium

**William Goodger**, a long-time faculty member of the UW School of Veterinary Medicine, passed away in March. Goodger worked as a professor of epidemiology at the SVM with a beloved teaching herd of dairy cows. He was widely published in veterinary medicine and food animal production journals, and also worked with the United Nations and U.S. Department of Agriculture in South America and Asia. He will be remembered for his passion, compassion, and dedication to the school's veterinary medical students.



This spring, SVM Dean Mark Markel (rear center) visited Bill Schultz's Lyn-Vale Farm in Waldo, Wisconsin, with State Senator DUEY STROEBEL (far left) and Representatives TYLER VORPAGEL and TERRY KATZMA (third and fourth from left, respectively). The daylong visit to Sheboygan County included tours of businesses and dairy facilities that the school has consulted with and assisted. At center, Lyn-Vale's YVONNE PREDER holds Rejoice, a recent UW Veterinary Care patient from the farm.

## Combating Ticks and Mosquitoes in the Midwest

Between 2004 and 2016, the number of people who acquired diseases from mosquitoes, ticks, and fleas tripled in the United States. Nine new diseases spread by mosquitoes and ticks, including Zika virus, were discovered or appeared in the U.S. during that time. Wisconsin, specifically, is a hotspot for Lyme disease and other tick-borne pathogens, ranking in the top 20 percent of cases in the country.



These statistics were issued in May in a new report from the U.S. Centers for Disease Control and Prevention (CDC) that stated the nation is ill-prepared to address these challenges. The agency called for greater investment in local agencies' ability to control and prevent the spread of diseases transmitted by insect vectors.

The CDC-funded Midwest Center of Excellence for Vector-Borne Disease is focused on such work. Led by UW-Madison medical entomologists **Lytic Bartholomay PhD'04**, an associate professor in the School of Veterinary Medicine, and Susan Paskewitz, a professor in the College of Agricultural and Life Sciences, the center works together with universities, public health agencies, and mosquito control districts to improve public health associated with vector-borne disease across Wisconsin, Illinois, Iowa, Michigan, and Minnesota.

“We are tackling the growing threat of vector-borne disease by finding new ways to control ticks in backyards, by expanding the ways that we look for vectors and diseases they transmit, by critically testing methods for mosquito control, and by training students to be able to collect, recognize, and control mosquitoes and ticks,” says Bartholomay.

*Kelly Tyrrell*

## Fund Supports 18 New Studies to Enhance Companion Animal Health

Thanks to grants from the school's Companion Animal Fund, faculty and residents at the UW School of Veterinary Medicine (SVM) will launch 18 new research projects aimed at improving animal health care.

Over \$171,000 in grants are being distributed in 2018. Researchers will explore a variety of subjects including the clinical management of tracheal intubation and reflux in dogs; ways to combat equine gastric ulcer syndrome; stem cell creation for disease modeling, drug testing, and patient-specific cellular therapies; and the management of cyclic, antibiotic-resistant urinary tract infections.

Special species health is also represented with a study of pain management in African pygmy hedgehogs, an increasingly common household pet. The project will evaluate the analgesic efficacy of the opioid drug buprenorphine with the goal of developing species-specific dosage protocols to help veterinarians provide an effective, safe pain control option in ill and post-operative hedgehog patients.

"There is a huge knowledge gap in hedgehog medicine, especially when it comes to how to best provide pain relief," says **Grayson Doss**, who is leading the research with **Christoph Mans**, both zoological medicine faculty members. "The drug dosages that are currently recommended for hedgehogs are based on what works in other unrelated species, like ferrets or rodents. We need better evidence and this grant is a first step towards learning more."

The Companion Animal Fund is made possible by donations from veterinary medical clinics with strong ties to the school as well as individual donors, including many whose animals have been patients at UW Veterinary Care. Through a competitive annual process, the school awards the funds to faculty to further research that will enhance the care of companion animals. This year, because of an increase in gifts, the school funded six more research projects than in 2017 and twice as many as in 2016.

In addition to bolstering research, funds support facility and equipment improvements that help UW Veterinary Care clinicians provide enhanced diagnostics and treatments for patients.

"The response from our donors this year was amazing. We are very grateful," says **Kristi Thorson**, associate dean for advancement and administration. "Investigators, residents and students appreciate the Companion Animal Fund grants because they support early research projects and often serve as preliminary studies for larger grant applications. They're a cornerstone of our commitment to foster academic excellence."



A Companion Animal Fund grant will support research into pain management in African pygmy hedgehogs, providing important new evidence for treating this increasingly common pet.

### Principal Investigators for Companion Animal Fund Projects in 2018

**Heidi Barnes Heller**

Clinical Associate Professor,  
Medical Sciences

**Grayson Doss**

Clinical Instructor, Surgical Sciences

**Tatiana Ferreira**

Clinical Assistant Professor,  
Surgical Sciences

**Cristina de Miguel Garcia**

Clinical Instructor, Surgical Sciences

**Robert Hardie**

Clinical Professor, Surgical Sciences

**Rebecca Johnson**

Clinical Associate Professor,  
Surgical Sciences

**Stephen Johnson**

Associate Professor,  
Comparative Biosciences

**Christoph Mans**

Clinical Associate Professor,  
Surgical Sciences

**Fernando Marques**

Clinical Associate Professor,  
Medical Sciences

**Gillian McLellan**

Associate Professor, Surgical Sciences

**Peter Muir**

Professor, Surgical Sciences

**Amelia Munsterman**

Clinical Assistant Professor,  
Surgical Sciences

**Xuan Pan**

Assistant Professor, Medical Sciences

**Jessica Pritchard**

Clinical Assistant Professor,  
Medical Sciences

**Lesley Smith**

Clinical Professor, Surgical Sciences

**Masatoshi Suzuki**

Associate Professor,  
Comparative Biosciences

**Katrina Viviano**

Clinical Associate Professor,  
Medical Sciences

**Michael Wood**

Assistant Professor, Medical Sciences

Study descriptions can be found at  
[vetmed.wisc.edu/caf-abstracts-2018](http://vetmed.wisc.edu/caf-abstracts-2018)

Donate to the Companion Animal Fund at  
[vetmed.wisc.edu/caf](http://vetmed.wisc.edu/caf).

*Denise Garlow*



Sarge departs UW Veterinary Care in January following orthopedic surgery, escorted by Nate Brandt, a volunteer transporter with Northwoods Animal Shelter in Iron River, Michigan.

# Miracle Mutt

Shot and abandoned, Sarge is now healed and loved

By Meghan Lepisto

**S**arge has come an incredibly long way since the frigid January morning when he was found abandoned on a rural roadside in Michigan's Upper Peninsula, suffering from a broken left front leg and a gunshot wound to the head.

"He was barely stable at the time of intake," recalls Sarah Erickson, manager of Northwoods Animal Shelter in Iron River, Michigan. "He was hypothermic because he had been shot in the very early morning hours and laid outside in the snow."

From the good Samaritans who discovered and stayed with Sarge until help arrived, to the sheriff's deputy who shepherded him to emergency care, to the dedicated team at Northwoods that took the one-year-old pit bull mix under their wing for several months, Sarge's plight launched a series of interventions that set him on a path to the loving adoptive home where he resides today.

Following initial treatment by Four Seasons Animal Hospital, also in

Iron River, Sarge and Erickson made the more than four-hour drive to UW Veterinary Care for specialized surgery. A fracture to Sarge's ulna (one of the two bones of the forearm) near the elbow required delicate repair, set with a bone plate and seven screws.

"It was difficult as it involved the elbow joint, so it was extremely important to anatomically reconstruct the pieces to prevent or minimize arthritis long-term," explains **Jason Bleedorn**, a clinical associate professor of orthopedic surgery who led Sarge's operation.

The team also removed the bullet that could have claimed Sarge's life. X-rays revealed that the bullet entered Sarge's skull near his right eye, tracked along the jaw, fractured parts of his neck vertebrae, then lodged near his shoulder. "The injuries from the bullet could have been much worse," says Bleedorn. "He was very lucky."

Sarge healed tremendously, all the while squirming with energy, tail ever-

wagging, and offering kisses galore.

"From the minute the police picked him up, he was kissing their faces, wagging his tail, even though he must have been in excruciating pain," Erickson told *Michigan Live* this winter.

Sarge's recovery has earned him widespread news coverage and community support, the moniker of "miracle mutt," and a devoted social media following, with over \$4,000 raised online for his medical expenses.

"What happened to him was absolutely awful, but I think it has ultimately turned out to be the best thing in his life," Erickson says.

"Anytime someone brings in a dog rescued like this — traumatized and left on the side of the road — it is pretty amazing to help get him back to a full recovery," adds Bleedorn, crediting Sarge's strength and Northwoods' dedication to his postoperative care. "He is a very tough and stoic dog and the shelter did an incredible job."



# Wholly Devoted

Supporting Pets, Empowering People *By Meghan Lepisto*

**F**or so many of us, a home isn't a home without the love of a pet.

So to be asked to sacrifice one for the other — keep your housing but lose your pet, or keep your pet but lose your housing — is a heartrending dilemma.

Such is the scenario, however, for a number of clients of Wisconsin Companion Animal Resources, Education, and Social Services (WisCARES), a veterinary clinic supporting homeless and low-income individuals in Dane County.

"I couldn't get rid of her," says **Hope Barajas** during a visit to WisCARES in May with **China**, a three-year-old terrier with pristine white

fur and brown brindle spots.

Barajas, who has experienced homelessness in the past, says that over the years she's had to hide China from landlords to be able to keep her. If it came down to it, she says, she would rather be homeless again than lose her companion. "She's like my daughter. She's a family member, not just a dog."

An outreach partnership of the UW School of Veterinary Medicine (SVM) and the School of Social Work, WisCARES was launched in 2014 to provide veterinary medical care, housing support and advocacy, and other social services to Dane County pet owners

who are experiencing or at risk of homelessness, or unable to pay for veterinary medical services, such as vaccinations, that are needed for access to housing.

Within Dane County, approximately 41 percent of households struggle to afford basic needs, 600 individuals are homeless, and 40,000 pet-owning families live paycheck to paycheck.

"The pets aren't a luxury item; it's the veterinary care that is," notes WisCARES Director **William Gilles DVM'13**.

Supported by the university, grants, and private gifts, WisCARES works to keep pets with their owners, prevent sur-

render to animal shelters, and empower people to care for their animals and gain access to the housing, social support services, and health care they need.

“Our ultimate goal is that the family unit, including animals, can stay together and be in stable housing, getting care,” Gilles says.

This spring, WisCARES relocated to a 4,200-square-foot building on Madison’s south side that is five times larger than their previous location. In addition to continuing their original services, the program now also offers subsidized veterinary medical care to Madison’s lower socioeconomic population.

“I don’t think I could afford the services if it wasn’t here,” says Barajas during China’s exam. “I’m thankful, and she likes coming here too.”

Barajas first visited WisCARES when China was seven weeks old. As she talks with veterinary medical students at her most recent appointment, she retrieves papers from a red folder she’s brought along that contains all of her records related to China’s care. Barajas lives about a mile from the clinic and departs with a fresh supply of preventative medicine for heartworm, fleas, and ticks; dog food; and a new leash.

WisCARES’ pet food and supply pantry is a vital resource for clients, with items ranging from wet and dry foods to treats and safe toys to collars and harnesses and carriers and crates. Stocked by donations, the items not only support pet nutrition; they also aid healthy animal behavior — in addition to training resources the clinic provides — so pets don’t pose an extra risk for eviction or a barrier for leasing.

During a recent appointment, **Mary Knight** and her 18-year-old cat **Tiny** received an assortment of food for the finicky feline, who has been a patient of WisCARES for a year and a half. “She’s going to like this,” Knight says, browsing the packets while noting Tiny’s preference for pâté.

Tiny earned her name as a kitten. “She was half the size of my hand; everyone kept saying she’s so tiny,” Knight recalls.



WisCARES’ pet food and supply pantry is a vital resource for South Madison pet owners. The surrounding neighborhood is a veterinary desert, with no veterinary clinics and minimal pet care resources.

As **Priscilla Marroquin DVMx’20** conducts a physical exam of the gray cat, Knight shares her gratitude while softly stroking Tiny’s back.

“Without WisCARES, I don’t know where I’d be,” she says. “I swear, if they weren’t here, I don’t know what I’d do.”

## Refuge and Remedies

To date, WisCARES has served nearly 500 clients and more than 600 animals. About half have been seen multiple times; the clinic works to establish long-term, ongoing relationships.

On numerous occasions when the odds were stacked against animals and their families, WisCARES has intervened. Central to this success is a pet boarding and foster program that provides a safe, temporary place for cats and dogs to stay for up to 14 days in boarding or up to three months in a volunteer foster home environment.

“We’ve had a number of families who have been direct referrals from the humane society because they’ve been ready to surrender their animal because of loss of housing or getting evicted,” says Gilles. “We’ve been able to disrupt that cycle on a number of occasions.”

In addition to offering refuge for pets while owners secure housing or emergency shelter, the boarding and fostering is also intended to allow family

members to access inpatient health care, mental health services, or treatment programs, because people often won’t leave their pets to get such care, Gilles says. “We’re learning how as veterinarians we can use the special bond people share with their pets to increase access to health services for people.”

The clinic’s work is guided by a One Health framework, which acknowledges and leverages the relationship between people, animals, and their environment. Dr. Bethany Howlett, a family medicine physician with the UW School of Medicine and Public Health, is developing additional initiatives with WisCARES around this topic.

More than 100 dogs and cats have entered WisCARES’ boarding and fostering, with over 90 percent of animals reunited with their owners. “We try really hard to make sure we get everybody back together,” says outreach coordinator **Levi Sable**.

A grant from the American Society for the Prevention of Cruelty to Animals will allow WisCARES to expand the program at their new clinic with the installation of dog and cat kennels and a dedicated area for exercising animals and hosting visits with pets’ families.

Clinical offerings have also grown at WisCARES’ new location with a larger staff, extended hours, five days a week, broader diagnostic capabilities, laboratory testing, a surgery suite, and



plans in place to provide dentistry services and X-ray imaging (with much of this equipment provided through in-kind donations). And a social work room outfitted with a couch, children's activities, and other comforts provides a private space for sensitive conversations or, when needed, pet euthanasias.

The neighborhood surrounding WisCARES is considered a veterinary desert, lacking veterinary clinics and pet care resources, so the expanded hours and services fill a major void.

"In our old location we had limited offerings — wellness-based care, core vaccines, parasite prevention, and managing some chronic diseases," says Gilles. "Here we have a lot more robust capability. It really expands how we're able to manage cases."

The clinic also hopes to serve as a referral option when Madison-area veterinary clinics are faced with clients who can't afford recommended care.

## Equal Access

Across all of WisCARES' offerings, Gilles aims to thread new connections, free of judgement, between the veterinary profession and vulnerable communities.

"One thing I really want to give our clients and patients is the understanding that our profession is here to help in ways that they need our help, and not to dictate," he says. "There are a lot of pets and people out there who don't have any

connection with the industry. And just because most veterinarians don't see them, it doesn't mean that they're not important."

For **Bridget Holck DVM'18**, providing veterinary medical care to WisCARES patients after establishing relationships with the owners based on trust and mutual respect, and then seeing their appreciation, is something she especially valued about her externship at the clinic this spring.

"Every person I have worked with during my time at WisCARES loves his or her pet and wants what's best for the animal. I don't believe financial restrictions should be a barrier to seeking veterinary medical care and I love being a part of making these services available to people and their pets," Holck says.

Noah Hoeper, a social work major who has volunteered at the clinic for two years, echoes this. "All of our clients are so appreciative," she says. "Having people express that they wouldn't have been able to keep their pets without us makes me feel good. It just speaks to how our clients would rather sacrifice other things in their life than give up their pet."

Gilles adds, "Our clients are incredibly dedicated to their animals. And because we let students form connections with clients, they're able to see the impact the animal has on the family relationship."

One of many animals Holck treated during her time at WisCARES was

**Baby Girl**, a long-haired black and white cat, age eight, who had been experiencing limited vision.

"I need to know if she's going to be okay," the cat's owner, **Dorothy**, says as the appointment gets underway in the clinic's dedicated cat room. "My 'baby girl' is not even enough to describe how I feel about her."

---

**"Our ultimate goal is that the family unit, including animals, can stay together and be in stable housing, getting care."**

---

Registered as an emotional support animal, the cat is inseparable from Dorothy's 10-year-old son, who has autism. "They have a great relationship, she says. "She loves her big brother."

Dorothy brought Baby Girl to WisCARES after learning from a friend about the clinic's free and subsidized care. "Otherwise I wouldn't have been able to take her to a vet."

## Invaluable Experience

Students from the UW Schools of Veterinary Medicine, Social Work, and Pharmacy are an integral part of WisCARES' daily operations, with



MEGHAN LEPISTO (4)

future collaborations planned with the Schools of Nursing and Medicine and Public Health. All told, more than 100 students volunteer annually, in addition to a small staff of licensed veterinarians, a certified veterinary technician, and administrative personnel.

First- through third-year veterinary medical students lead weekly pet wellness clinics each Saturday, while fourth-year students examine patients and manage cases during two-week clinical rotations throughout the year. Social work students assist clients in accessing housing, health care, and other resources, and help address barriers unique to pet owners (for example, conducting landlord outreach and education if a building requires that cats be declawed). And pharmacy students stock medications and observe appointments. As all of these students buzz about the clinic and interface with staff, interprofessional relationships and collaborations develop.

The challenge of delivering exemplary care within a tight budget and technical constraints, “where you don’t have all the bells and whistles we have at the vet school,” helps students develop critical problem-solving skills says **Elizabeth Alvarez**, WisCARES medical director and clinical assistant professor of primary care at the SVM. “Students realize they can do a lot to help these patients and people with just their smarts and a few tests or donated medications.”

Perhaps even more important, the experience allows students to engage with a broader swath of clients and see how outreach and community service can be part of a veterinary practice.

“Students have commented that it’s been a great experience because they get exposure to something they wouldn’t in the rest of their training,” says Gilles. “And for a lot of our students, it’s exposure to something they don’t have any personal history with,” be it poverty, housing instability, or a physical disability.

“If the students don’t actively go out and get these sorts of experiences, they can go through their whole four years of vet school and never really work with a clientele that may not have very much money or are homeless or of a different ethnicity or race,” Alvarez adds.

Journaling and facilitated discussions following students’ rotations show

that the message is clear: love isn’t the limiting factor for these pets and their people, but rather limited financial means or other life circumstances.

“Students will say things like ‘I can’t believe this client was willing to give up a bed at a homeless shelter because they wouldn’t take her dog, so she instead decided to live in her car because of the bond she has with her pet,’” notes Alvarez. “That part of what we’re teaching seems so much more profound.”

Holck’s experience at WisCARES, “providing veterinary medical care with limited resources to those animals who need it most,” has inspired her to seek out additional opportunities to serve low-income communities as she continues in her career.

“Veterinary medicine is about helping to preserve the bond between animals and their people, and WisCARES does just that every day,” she says.



## Supporting WisCARES

Financial contributions support WisCARES’ efforts to provide Dane County pet owners with equal and consistent access to veterinary medical care, social support, and human health services.

To give, visit: [go.wisc.edu/wiscaregift](https://go.wisc.edu/wiscaregift).



## Opening the Door to Pet Wellness

The Shelter Medicine Program at the UW School of Veterinary Medicine (SVM) is helping to make pet care more accessible through an innovative initiative that delivers veterinary medical care direct to the doorstep of underserved pet owners.

Together with the Wisconsin Humane Society, SVM Shelter Medicine faculty, staff, and students have since 2016 conducted door-to-door outreach in several Milwaukee neighborhoods where veterinary clinics and other pet resources are limited or non-existent. The team provides free wellness care, vaccines, pet food and supplies, and more through veterinary house calls. Free training classes and spay/neuter surgeries are also offered to the community.

The work is part of a nationwide program, Pets for Life, developed by The Humane Society of the United States to extend the reach of pet well-

ness resources to those with the least access. Through relationship-building and an ongoing neighborhood presence, the program aims to keep pets in the homes they already have, improve their quality of life, and elevate the human-animal bond.

“In the communities we serve there’s not even a pet store or vet clinic,” says **Sandra Newbury DVM’03**, clinical assistant professor and director of shelter medicine at the SVM. “But the love for their pets and the need for their pets to be part of the family unit is incredibly strong.”

As part of an SVM clinical rotation in shelter animal medicine, fourth-year veterinary medical students travel to Milwaukee every other week to participate in Pets for Life house calls. With only the supplies that can fit into bags they carry, the team has diagnosed and treated ear, skin and parasite infections, eye problems, minor wounds, and even

managed some fractures, in addition to providing guidance around pet care.

One case — a small black and white dog (above) with curly hair and seriously infected ears — sticks out to Newbury as emblematic of the power of these visits. A young girl in the home had placed hair bands around the dog’s ears in an apparent attempt at doggie pigtails, but when the hair bands were forgotten and masked by the dog’s fluffy locks, they cut into the skin and the wounds became infected.

Noticing that the dog’s ears smelled badly, the family requested care. When the team arrived and the problem was revealed, initial tension amongst the family then developed into a tender teaching moment.

“The little girl was obviously terrified about what the possible outcome would be, but I was able to explain and invite her to help,” Newbury recalls. “We had to clean and give antibiotics, and the



WISCONSIN HUMANE SOCIETY (4)

girl went from being scared to interested and happy. In the end she's sitting there with her happy dog on her lap and it was clear she did not mean to hurt the dog. Everybody loved the dog."

Under another set of circumstances, without their assistance, a scenario such as this could have ended badly, Newbury says. When options or finances aren't available for veterinary care, pet owners often must surrender or even euthanize their animals. "You could see everything could have gone one way, but just a little bit of help makes everything go in a different direction," she says. "A tiny little intervention, at the right time, in the right way, can change everything."

"We've had numerous people say to us, 'Thank you so much; if you hadn't done this, we'd have to give our dog up,'" she continues. "And we don't want them to give their dog up for a whole host of reasons."

Newbury sees this type of work as representing the future of shelter medicine and animal welfare — "getting into communities and supporting the human-animal bond before it's broken and before animals end up in shelters," she says. "Prevention is really our primary route to solving the problem of animal homelessness."

This summer the Dane County Humane Society (DCHS), in partnership with the UW Shelter Medicine Program, is launching Pets for Life in South Madison. The Shelter Medicine

team will provide house calls modeling the program in Milwaukee, while the Wisconsin Companion Animal Resources, Education, and Social Services (WisCARES) clinic will provide spay/neuter surgeries and ongoing medical care for animals served by the program. Pets for Life will also support a yearlong internship for a graduate veterinarian through the UW Veterinary Care Primary Care service who will work four days each week at WisCARES.

"It's this win-win situation. WisCARES opened their new clinic right next to our target neighborhood just as we were making the decision to move forward with Pets for Life. The timing was unbelievable," says Newbury.

Data collected by DCHS and the Shelter Medicine Program around pet health and other community metrics in South Madison will inform a four-year research study, in collaboration with the University of Denver, measuring the effect of Pets for Life interventions.

As Newbury and colleagues serve and learn from the community, she is proud to advance the Wisconsin Idea, which emphasizes the university's service to the state and its impact on lives beyond the classroom. Children's enthusiasm around the team's work has been an especially gratifying aspect for Newbury, who recently gave a presentation at a Milwaukee youth center about careers in veterinary medicine in response to this interest.

She says it's important for veter-

inarians to engage with underserved communities — "to show up and show that you get it, that they care about their pets too."

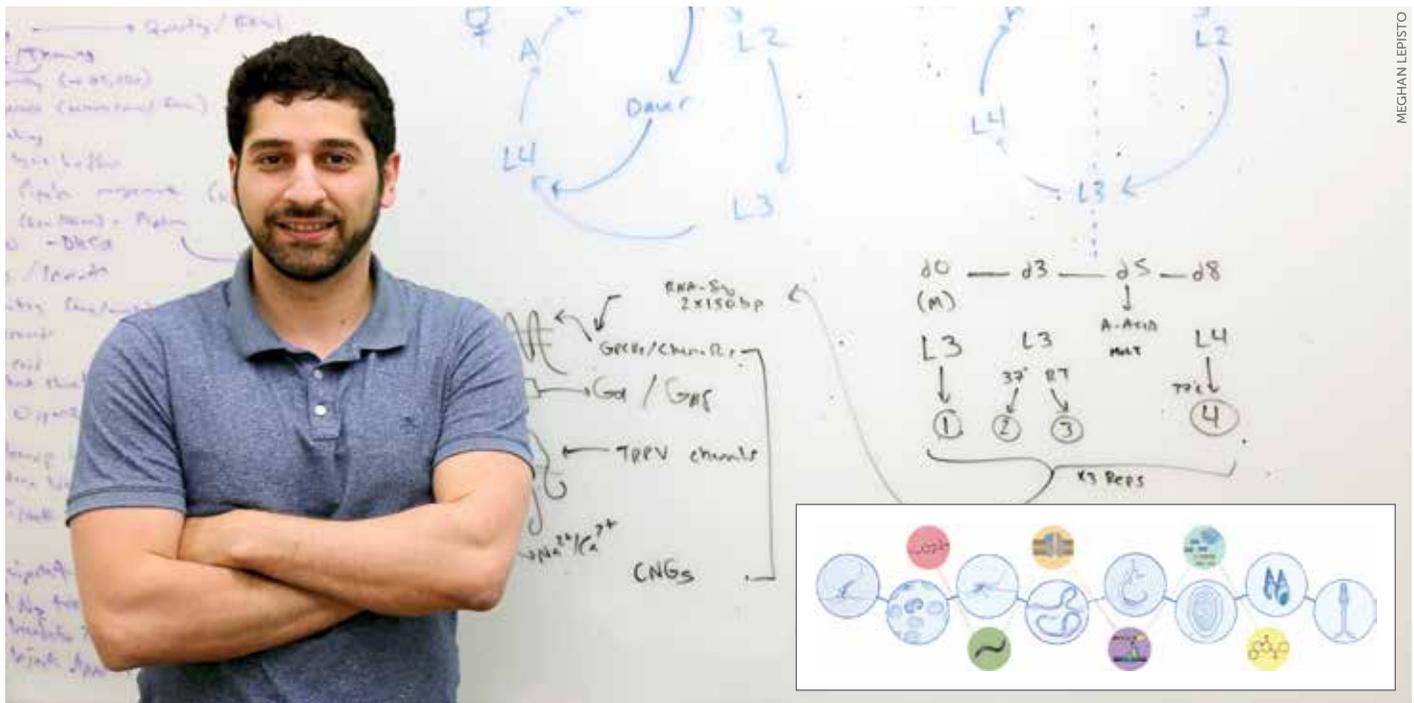
"Every time we go out and work in the communities, we learn more about what they know, what they don't know, what they have access to, and what resources they need," she adds. "That informs our program, our understanding of animal welfare, and why things go wrong or why they go right."

The house calls also help SVM students appreciate firsthand the barriers facing vulnerable communities and the impact of outreach and direct service.

"It's one of the students' favorite parts of our rotation," says Newbury. "There is something about being in the community, talking to people and seeing them with their animals, that brings up a kind of empathy you could never possibly teach, but you can show. And that showing is incredibly valuable."




  
 Learn more:
   
[uwsheltermedicine.com](http://uwsheltermedicine.com)



MEGHAN LEPISTO

## Small Worms Behind Big Diseases: Unraveling Their Secrets

More than 1.5 billion people around the world — about one in five — have a parasitic worm living inside them. In domestic animals and wildlife, the distribution is even more widespread. Sit with those uncomfortable statistics for a minute and you'll understand the impact of the research conducted by **Mostafa Zamanian**, an assistant professor of pathobiological sciences and trainer in the Comparative Biomedical Sciences graduate program at the UW School of Veterinary Medicine (SVM). Zamanian joined the SVM in 2017 to study parasites that challenge human and animal health.

"Most people don't know how big a part of our ecosystem they are and how important they've been historically to the development of our immune systems," he says. "Before there were treatments, almost every human on earth was filled with a few different parasites."

Zamanian himself wasn't aware of the devastation wrought by parasites until his final rotation in graduate school landed him in a parasitology lab.

"When I joined that lab, I had never been exposed to even the names of the diseases that were being studied or the impact of these parasites around the world," he recalls. "It was shocking to me that I could go through much of my life having never heard of diseases that had this much impact."

He was pulled in by parasites' complex biology, "still rich for discovery," and by genome sequencing projects then

getting underway "that would allow us to tackle questions that previously were not approachable," he says. "The constellation of those things excited me and pushed me to go down this path. I haven't looked back since."

Below, Zamanian describes his research program and what's at stake for global health.

### **On Call: What do you study in your lab?**

**Zamanian:** We're broadly interested in neglected tropical diseases. These diseases are labeled neglected because relative to the global burden they cause, they're considered understudied. There has been a concerted effort to raise their profile and push for new means of therapy and disease control.

In human medicine they're diseases of poverty and are distributed mostly throughout the developing world. These diseases bring about a great deal of morbidity, but also sometimes mortality. They are associated with poor development in children and a wide range of other clinical manifestations that cause physical disability and disfigurement.

My laboratory focuses on two vector-borne parasitic worms in particular: mosquito-transmitted worms that cause elephantiasis and snail-transmitted schistosomes, which are human blood flukes. Elephantiasis infects 120 million people; about a third are significantly disfigured and suffer from swelling of the limbs.

---

## How do these parasites connect to veterinary medicine?

Almost all parasites studied in human medicine have closely related counterparts in animal medicine. We use many of the same drugs to treat humans and animals, and in fact the anti-parasitic drugs used in human medicine mostly came from research done in a veterinary environment.

The filarial parasites that we study [e.g. *Brugia malayi*] are closely related to heartworm [*Dirofilaria immitis*]. We study the filarial worms alongside heartworm and they give us a model to compare and contrast.

## What do you aim to achieve through your research?

We have two broad goals. One is to identify new drug targets in these parasites and validate these targets for eventual screening. The second is to uncover the basis of resistance to anti-parasitic drugs and what mechanisms might be involved.

For most of these parasites we have drugs that work, but resistance to the drugs threatens future control. This is already a huge problem; anti-parasitic drug resistance is very widespread in veterinary medicine and it's an emerging threat in human medicine.

## How do you conduct this work?

In the case of finding new drug targets, we use molecular and computational tools to identify specific proteins that if targeted by a drug would prevent parasite survival and/or transmission. In the process we learn more about the rich fundamental biology and fascinating life cycles of these parasites. In between infecting mammals, they have to go through an intermediate host. In the case of filarial parasites, those get passage through a mosquito. How they interact with the mosquito, how they are passed from the mosquito to a human, and how they develop and eventually cause disease are all points of potential intervention for us.

## Can you describe the research tools you use?

We're involved in international projects to decipher the genomes of an unprecedented number of human and animal parasites, dig into those genomes computationally, and prioritize what are likely to be good drug targets. But these approaches can only take you so far; you want to then do experiments in the laboratory. We have a wet lab where we can culture parasites, study their behaviors, and clone genes that we're interested in as potential drug targets, to investigate whether these targets could lead to a new method of therapy or interruption of the transmission of disease.

Receptors fundamental to parasite biology are one of our biggest focuses. Some of these receptors are involved in how parasites perceive and navigate their environment, others control neuromuscular movement or reproduction. These are areas we can exploit to try to develop new therapies. We're also interested in finding how existing drugs operate at that same interface between parasite and host.

## What are some important findings from your work?

One thing we've been focusing on is that the mechanism of action of the drugs most commonly used to treat parasitic infections, which are administered to millions of people around the world, are not clearly understood and might differ substantially from parasite to parasite.

In collaboration with others we have recently shown that ivermectin (which was discovered by an alum of UW–Madison and the veterinary science program [William Campbell MS'54], who won a Nobel Prize) is likely to act through a mechanism that interferes with how filarial parasites interact with the host immune system. We've identified new players — small vesicles, or membrane-bound cargo — that parasites release when in the host and we have shown that ivermectin abolishes the release of these vesicles.

This realization has opened up new avenues and caused us and other laboratories to start thinking about how we can better measure outputs of drug response. There is a big disconnect between drug screening done outside of the host and what translates to success in the host environment.

## What has your time on campus been like so far?

I was excited to be able to start my lab in this environment, where there are so many infectious disease investigators with an incredible amount of expertise to share. This was an ideal destination for me. Infectious disease is clearly a big strength at the school and the university. And both within the vet school and across campus, it's a very collaborative environment.

## Looking ahead, what do you hope to accomplish?

I would be happy if in say five to ten years we had made significant progress in better understanding the interaction between parasites and their hosts for developing new therapies, but also have a better fundamental understanding of parasite biology. I hope that in the process we deliver new insights and tools to the larger parasitology community, because what our lab does can help seed what other people do as well. We would like to get to a place where a lot of this early work will lead to very tangible outcomes.

*Meghan Lepisto*

## At Work With: Diane Larsen DVM'90, PhD'99

### First a doctor to animals, Larsen now develops medicines for them

The mind can go in many directions while washing dishes. For Diane Larsen, it led to her role today, heading drug development for the global pharmaceutical company Boehringer Ingelheim.

Looking “to get some extra cash” as a UW School of Veterinary Medicine (SVM) student, Larsen began washing dishes in the lab of virologist **Virginia Hinshaw**, who was then at UW–Madison studying avian influenza. The job quickly became much more than a source of spending money.

“I didn’t know how interested I would be until I got into the lab,” Larsen recalls. “As I got more involved, Virginia started giving me projects that were more related to the science. I became very, very interested in research.”

The spark that was ignited in that lab has continued to burn throughout Larsen’s career, outlined below.

For 17 years, Larsen has worked at the global animal health company Merial, which in 2017 was acquired by Boehringer Ingelheim.

The company is focused on disease prevention and health management, producing a number of therapeutic drugs, parasite-control products, and vaccines.

As head of pharmaceutical development projects, Larsen plans and supervises national and international research.

Five project leaders report to Larsen, managing all technical deliverables for new pharmaceuticals from the late research stage to launch.



Once there is proof of concept (when it’s been demonstrated that a particular molecule is showing promising results), project leaders step in.

They gather collaborative, cross-functional teams that can include formulators, clinicians, manufacturers, engineers, marketers, and regulatory staff. “You don’t have direct authority to any of these people, so you have to finesse them into wanting to deliver, and to deliver on time,” she says.

Together, these teams determine the final drug formulation and dose, demonstrate safety and efficacy, ensure that the product can be scaled up to production at a commercial level, anticipate potential regulatory hurdles, and more.

Project leaders also interface with regulatory agencies in Boehringer Ingelheim’s major market areas of the United States, Europe, Latin America,

and Asia, with each agency having slightly different requirements.

Larsen could spend days describing the details of this work, “which is what makes it so exciting for me. It’s such a nice mix of basic science, veterinary medicine, marketing, and manufacturing.”

NexGard, a chewable flea and tick control product, is one that Larsen oversaw the production of, as well as NexGard Spectra, a similar product available in the European Union.

Creating a chewable NexGard formulation that’s highly palatable for dogs but doesn’t contain any meat, with food industry equipment and ingredients, presented challenges.

“You’re trying to take a food product and make it fit into the restrictions for a regulatory pharmaceutical product.”

There were tense moments along the way. “People were not afraid to come to me and say ‘We’ve got a real challenge here and we’re not sure how to fix it.’ But if you have a highly functional, cohesive team, you can brainstorm and get through it.”

Throughout her time in the industry, Larsen has seen a shift toward products focused on ease of use, for example medicines that are longer-acting or taste good to pets. “If owners have to pill their animal, that is something they don’t want to do. But if they’re giving them a treat, that’s a totally different story,” she says.

Upon graduating from the SVM, Larsen’s ultimate destination was yet unknown. “When I left I had in the back

of my mind that research was still of interest to me, but I wanted to get into practice and experience it for at least five years. So that's exactly what I did."

Larsen was a practicing veterinarian at the Animal Hospital of Verona, a clinic founded by **Bill Gengler**, who joined the UW SVM faculty as Larsen was finishing her DVM training.

Then, when the school launched a doctoral program specifically for those with DVM degrees, Larsen returned, earning a Ph.D. while conducting influenza research with Professor **Chris Olsen**.

Next she was on to a postdoctoral position at the USDA Southeast Poultry Research Facility in Athens, Georgia, studying under Stacy Schultz-Cherry, daughter of SVM Professor Emeritus **Ron Schultz**.

Meanwhile, she kept in touch with **Kevin Schultz** (no relation to Ron and Stacey), a former SVM professor who was now in Athens as global head of research and development at Merial. When a position of interest opened there, she applied and was hired.

"So all roads lead back to the UW in some way," Larsen says. Thus, her advice to students: "Take advantage of the many resources here. So many people can play such a major role in your future career."

Larsen encourages veterinary medical students to consider the varied careers available to them. "I had no idea I would be interested in industry. I started vet school with the idea I was going to be a practitioner, period. But then you get exposed to other things."

That's one of the great things about veterinary medicine, she says. "There are so many pathways you can take."

Larsen is headquartered in Duluth, Georgia, and travels often to Boehringer Ingelheim offices in France, Germany, Japan, and other locations.

The chance to engage with different cultures excites her. "It's such an eye-opening experience to be exposed to all of this and to constantly be learning something new, which is critical for me."

Though it can require deft planning. In Madison this spring for a meeting of the SVM Board of Visitors, which Larsen serves on, she was next off to foreign lands. "When I leave Wisconsin I am heading to my car at the airport, switching suitcases in the trunk of my car, and am headed to Germany."

*Meghan Lepisto*

## A Message to DVM Alumni Planning for Success



Five years ago, the School of Veterinary Medicine released its updated strategic plan, leading with a vision that "the University of Wisconsin School of Veterinary Medicine creates the future of veterinary medicine through unparalleled excellence in education, clinical medicine, and research that benefit animal and human health." So where are we at today?

Each year, the school's leadership team carefully reviews progress towards our strategic priorities — eight in all — and updates progress on the initiatives in support of those priorities. Some initiatives are completed, some are continued, and some new ones are added. This active review ensures that the strategic plan remains vital and relevant and holds the school's leaders accountable for progress to all of our stakeholders, including you, our alumni.

What are the results? Between 2012 and 2017, the number of faculty has increased 10 percent, hospital revenues have

increased 38 percent, research expenditures increased 58 percent, scholarship support increased 96 percent, and we built a \$2 million teaching and learning center.

The numbers are just one way to tell the story of what really matters — that we are committed to providing an exceptional education to our students, preparing them for a broad range of careers and for future leadership in the profession. And as part of that education, offering exceptional animal care and making research advancements that benefit animal and human health.

When you tell people you have your DVM degree from the University of Wisconsin, you're letting them know your training and experience was with the best.

*Kristi V. Thorson*

**Kristi V. Thorson**

Associate Dean for Advancement and Administration

P.S. I invite you to visit [vetmed.wisc.edu/strategic-plan](http://vetmed.wisc.edu/strategic-plan) to learn more about our strategic plan, priorities, and progress.

## Awards & Honors

### Research Into Maternal Breathing Dysfunction and Increased Autism Risk Receives UW2020 Award

A UW School of Veterinary Medicine (SVM) study exploring the relationship between maternal breathing dysfunction during pregnancy and increased risk for psychiatric disorders in offspring has received a UW2020: WARF Discovery Initiative grant.

Led by Associate Professor **Tracy Baker** and Professor **Jyoti Watters**, both in the Department of Comparative Biosciences (CBS), the research project will examine whether and how maternal disordered breathing during pregnancy causes autism-like behavior in offspring, and will reveal new targets to enable early

diagnosis and therapeutic intervention for neurodevelopmental disorders.

Each year, over half a million women develop sleep-disordered breathing by the third trimester. The condition is characterized by recurrent partial or complete cessation of breathing during sleep, causing drops in blood oxygen levels often hundreds of times each night. It is a potent inflammatory stimulus, inducing chronic inflammation that, in turn, causes many illnesses in affected individuals. There is a growing scientific consensus that maternal inflammation



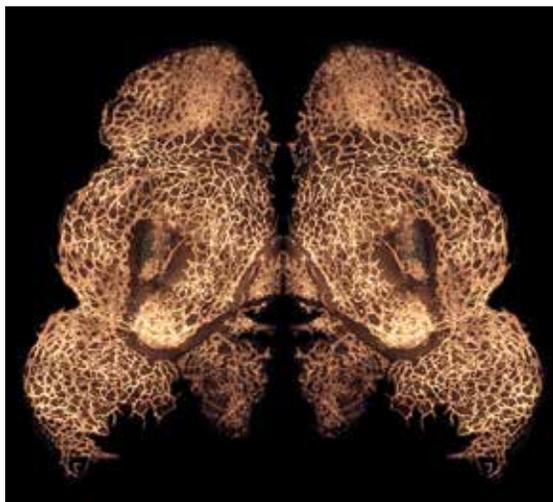
increases susceptibility to autism.

Funded by the Office of the Vice Chancellor for Research and Graduate Education and the Wisconsin Alumni Research Foundation, UW2020 aims to stimulate and support cutting-edge research at UW–Madison. CBS faculty members **Ted Golos** and **Sathish Kumar** are co-investigators on another UW2020 project to advance the use of CRISPR-mediated genome editing technology to model human disease.

### A VOICE for Diversity and Inclusion

The UW SVM chapter of Veterinarians as One Inclusive Community for Empowerment (VOICE) received the VOICE National Programming Excellence Award at the Student American Veterinary Medical Association Symposium in March. The award honors the most outstanding demonstration of leadership, creativity, and initiative in building diversity and maintaining the goals and ideals of VOICE. The chapter also received a Social Justice Advocacy Award at the annual UW–Madison Bucky Awards Ceremony in April.

A student-run national organization, VOICE seeks to increase awareness, respect, and sensitivity to differences among all individuals and communities in the field of veterinary medicine; to celebrate diversity and cross-cultural awareness within the profession; and to provide leadership and mentorship to youth, particularly from underrepresented backgrounds, who are interested in careers as veterinarians.



Hannah Chung, a graduate student in the Department of Comparative Biosciences, earned a winning spot in the campus Cool Science Image Contest with this microscope image of blood vessels developing in the face of an 11-day-old mouse embryo. The vessels are most concentrated in areas that will become the upper lip, while the two empty spots will become nostrils. Facial development in mice and people is so similar that this is much what a human embryo's facial blood vessels look like at 34 days. Chung studies facial development in the lab of SVM Assistant Professor Rob Lipinski; the team seeks to identify genetic and environmental factors that contribute to birth defects such as cleft lip and palate, helping to develop therapeutic and prevention strategies.

### Other Notable Honors

**Lyric Bartholomay PhD'04**, associate professor of pathobiological sciences and co-director of the UW–Madison-housed Midwest Center of Excellence for Vector Borne Disease, has received a Vilas Faculty Mid-Career Investigator Award from the university, recognizing research and teaching excellence. The award provides flexible research funding for one year.

**Marulasiddappa Suresh**, a professor of immunology in the Department of Pathobiological Sciences, is the first recipient of the John E. Butler Professorship in Comparative and Mucosal Immunology. The five-year award will extend through June 2023. The professorship was established at UW–Madison through the generosity of **Dr. John Butler**, a recognized authority in developmental immunology.

## In the Classroom

### Handle with (Cuddly) Care

Third-year students at the UW School of Veterinary Medicine gained vital hands-on experience with a variety of little creatures at a small mammal handling lab in February. Students learned to handle and conduct wellness exams on rats, ferrets, chinchillas, guinea pigs, and rabbits.



DENISE GARLOW (7)



# From Cats to Cows

### Long-time SVM supporter lends valuable industry perspective



“It all starts with the cow,” says **Janet Raddatz**, who recently retired as vice president of quality and food safety systems at Sargento Foods Inc., headquartered in Plymouth, Wisconsin. “The quality of milk produced is directly related to the health of the animal, and the vet school plays a critical role in that.”

At Sargento, Raddatz worked with over a hundred cheese suppliers across the state and the country. Her knowledge of the dairy industry runs deep, as does her involvement with the UW School of Veterinary Medicine (SVM). Since 2006 she has served on the school’s Board of Visitors, lending a unique business perspective while gaining new insights into the SVM’s impact on food production. “Everyone has a role to play along the supply chain — the key is in helping each other out,” she says.

These two worlds perfectly intersected recently when Raddatz helped coordinate a forum, hosted at Sargento, on the value of public-private partnerships in the food supply chain, part of a daylong series of events and farm tours with local legislators in Sheboygan County that spotlighted School of Veterinary Medicine connections to Wisconsin farms and food producers. The roundtable discussion included local veterinarians, cheese procurement and sales representatives, SVM faculty and food safety experts, and dairy farmers that the school has consulted with and assisted, who spoke passionately about the role that the SVM and its Dairyland Initiative play in supporting the health and efficiency of their herds.

“Many of the folks around the table didn’t realize the full extent of involvement that the vet school has in dairy herd health across the state,” says Raddatz. “I found the experience so gratifying. Walking out it felt like my two families were finally meeting — my vet school family and my work family. I could feel the synergy and felt a swell of pride for both.”

Raddatz’s introduction to the SVM came in 1992 when she first brought her cat, **Ambrose**, to UW Veterinary Care for treatment for luxating patellas, a rare feline condition where the kneecap dislocates or pops out of its normal location. Ambrose was the first feline to have corrective surgery for the condition at the teaching hospital. As his health began to fail in old age, a serendipitous event brought new companions into the lives of Janet and her husband **Andy**.

“A few weeks before our beloved cat Ambrose passed, a young cat came out of the woods with a litter of nine kittens to take up living on our porch. Watching over the kittens and letting go of Ambrose was a precious time,” Janet recalls. The couple kept two kittens from the litter, Bella and Otto, to join their two other cats, Helena and Bradshaw.

In early 2000, when another Raddatz cat, Ivan, faced diminished kidney function, they turned to their local veterinarian, alumna **Patricia Connors-Scherer DVM’87**. “She went above and beyond in caring for him,” says Janet. This inspired the couple to show their support to the school. “Our first gift was to the Companion Animal Fund for feline kidney research in honor of Ivan, who passed in 2002.”

Based on more gratifying experiences with the SVM and its alumni, Andy and Janet worked with school development staff to set up a planned gift, including the SVM in their estate plans.

“Over the years we’ve been increasingly impressed by all the wonderful work the school does, work that goes far beyond caring for cats,” says Janet. Now the couple directs their gifts to the SVM’s general discretionary fund, no longer feeling the need to name a specific fund. “We’ve come to trust leadership to make the right decisions for the students, the school, and the animals in their care.”

From 10-pound cats to 2,000-pound cows, the Raddatzes continue to support the school in large and small ways. For nearly 20 years, for example, they have sent about 40 of the SVM’s annual holiday cards to friends and family in their pets’ names. “Everyone gets a kick out of it,” Janet quips. “It’s a surprisingly easy way to raise awareness and contribute.”

*Denise Garlow*



BELLA AND OTTO, TWO MEMBERS OF THE RADDATZ'S FELINE FAMILY.

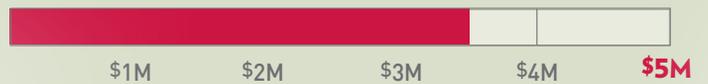
# Morrie Waud Match

Morrie Waud, long-time friend and donor, has committed \$5 million to match gifts and pledges toward the School of Veterinary Medicine's Animals Need Heroes Too building expansion campaign – the most important project the school will undertake in the next 30 years.

All gifts and pledges of \$5,000 or more qualify for the **dollar-for-dollar** Morrie Waud Match.

TOTAL COMMITTED (TO DATE)

**\$3.5M**



To learn more or make a multi-year pledge, contact:

**Heidi Kramer**

Director of Development

[heidi.kramer@supportuw.org](mailto:heidi.kramer@supportuw.org)

608-327-9136



**“PLEASE JOIN ME IN MY EFFORT TO MAKE THIS BUILDING EXPANSION A REALITY, AND HELP IMPROVE THE LIVES OF ANIMALS AND PEOPLE AROUND THE WORLD.” MORRIE WAUD**

To make your Morrie Waud Match gift today, visit [supportuw.org/giveto/morriewaudmatch](http://supportuw.org/giveto/morriewaudmatch).



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

## Animals Need Bucky Too

Brightly adorned with one peacock, six dogs, three cats, two sheep, a cow, an iguana, and several other species, the life-size Bucky Badger statue *Animals Need Bucky Too* pays tribute to all of the creatures, great and small, treated by the UW School of Veterinary Medicine. Created by local artist **Kathy King** and sponsored by **Karen Walsh** and **Debbie Cervenka**, co-chairs of the SVM's *Animals Need Heroes Too* building expansion campaign, the statue is one of 85 on display through September across Madison and Dane County as part of the free public art event *Bucky on Parade*. Spot all the animals on the statue in person at the intersection of East Washington Avenue and South Pinckney Street. Or see photos online: [go.wisc.edu/onparade](http://go.wisc.edu/onparade). With Karen and Debbie's generosity, the statue will be displayed at the school permanently once the parade is complete.

