

On Call

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



Learning...Centered

New student-focused hub augments DVM program experience

Feline Seizure Cessation

Clinical trial supports easier, less stressful medication delivery method



School of
Veterinary Medicine
UNIVERSITY OF WISCONSIN-MADISON

Features



Learning...Centered

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DVM students utilize the Active Learning Room in the Renk Learning Center, the SVM's new student-focused hub.
(Photo: Nik Hawkins)



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A Greater Place for Teaching and Learning

Welcome to the summer 2017 issue of *On Call*. In these pages, you will get an inside look at the new Renk Learning Center. After years of planning and design, followed by a year of construction, we officially opened the center this past spring. It includes an active learning room that can accommodate all of our students, a dedicated study area with south-facing windows and plenty of light, a dramatically expanded clinical skills training center, an additional dedicated counseling office, a meditation room, a multi-headed microscope room, a new student kitchen, a testing room, and rededicated book resource room.

You can get a glimpse of these spectacular new spaces — and hear from students, staff, and faculty about how they feel the facility is making teaching and learning better — starting on page 12. Better yet, please stop by and tour the center yourself.

It's important to note that its construction was made possible through the generosity of the Renk family, our alumni and friends, and the University of Wisconsin–Madison. From all of us at the UW School of Veterinary Medicine (SVM), we thank you for your support.

As I speak to supporters of the school about all that we do to advance the Wisconsin Idea — whether training the future veterinarians who serve the state, treating our clients' animals at UW Veterinary Care (UWVC), or advancing studies to improve animal and human health — I regularly point out that the SVM is responsible for more than 75% of the infectious disease research performed on the UW–Madison campus. Our studies range from the discovery of new and emerging infectious diseases to the creation of innovative vaccines for influenza to the understanding and treatment of Zika virus infection. And our work goes well beyond that. For example, on page 6, we describe the school's efforts to understand the impact of *Listeria* infection on human and animal development.

Staying at the forefront of infectious disease research is one of the many reasons we are focused on building an addition to the Veterinary Medicine Building in the next four to five years. Another is that we want to continue to provide the highest quality clinical care for our patients at UWVC. Both of these reasons tie into yet another purpose for the expansion — providing the best education possible for future veterinarians and scientists. I am happy to report that we are nearing the halfway mark of our goal of raising \$40 million in private funds for this campaign. We will ask the state for the remaining \$75 million required to fund this project in the 2019-21 state budget. If you wish to learn more about this important endeavor or how to support it, please do not hesitate to contact me.

I hope you all have a fantastic second half to your summer.



Mark D. Markel, Dean



Mark D. Markel

On Call SUMMER 2017

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Ask a UW Veterinarian



Tissue Issue: Cruciate Ligament Rupture in Dogs

This expert response comes from **Jason Bleedorn, MS'15**, clinical assistant professor of orthopedic surgery and board-certified veterinary medical surgeon.

Question: Why is there a one-month waiting period to repair a canine ACL tear? My dog cannot walk — why isn't that considered an emergency?

—Donna, Janesville, Wisconsin

Answer: The cranial cruciate ligament in dogs functions much the same as the anterior cruciate ligament in humans. It stabilizes the knee joint (called the stifle joint in dogs) as it rotates and bends. Cruciate rupture is a common condition in dogs, most often resulting from chronic degeneration of the ligament (unlike in humans where athletic activity is typically the culprit).

Many factors are involved in this condition, but baseline genetic risk, environmental conditions, and an animal's proportional size and shape are commonly involved. The process typically begins with joint inflammation and small ligament fiber fraying and then progresses from partial to complete ligament failure over a variable amount of time. Dogs with a rupture may be able to bear mild to moderate weight, and pain is typically well controlled with medical therapy.

Treatment focuses on alleviating pain, maintaining mobility and muscle

mass, and stabilizing the joint with surgery. Since this condition in dogs stems from a chronic degenerative process, the timing of intervention has little impact on the ultimate prognosis. Although it can be difficult to see your pet limp or show signs of pain, there is some evidence in humans to suggest that actually delaying surgical treatment for several weeks can allow inflammation to subside. This has not been investigated in dogs primarily because it is more difficult to pinpoint when their ruptures occur.

Often, diagnosis and treatment are delayed in dogs because the clinical signs may be mild at the onset and owners may not seek veterinary medical care. Surgery is often recommended for dogs with unstable (full cruciate rupture) joints or those with persistent lameness despite medical management. Ultimately, stifle arthritis is progressive with cruciate rupture despite current medical and surgical options.

Owners are encouraged to speak to their veterinarians about cruciate rupture in dogs. Board-certified veterinary medical surgeons experienced with this condition can also help guide individualized patient care.

Questions

Have a question for our veterinary medical experts?

Please send it to the *On Call* editor at oncall@vetmed.wisc.edu.

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

Socializing with the SVM

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



Big thanks to Dr. Christensen + staff @uwvetmed Our Lucy is feeling so much better. Happy for our time left with her. #Animalsneedheroestoo

—Gina Torry (@GinaTorry)
Via SVM Twitter (@uwvetmed)



Signing autographs (and a few hats) at the UW Veterinary Care booth was a highlight of my weekend at 2017 Midwest Horse Fair!

—Miss Rodeo Wisconsin 2017
Via UWVC Facebook (@uwveterinarycare)



Listeria May Be Serious Miscarriage Threat Early in Pregnancy

Listeria, a common food-borne bacterium, may pose a greater risk of miscarriage in the early stages of pregnancy than appreciated, according to researchers at the UW School of Veterinary Medicine (SVM) studying how pathogens affect fetal development and change the outcome of pregnancy.

“For many years, listeria has been associated with adverse outcomes in pregnancy, but particularly at the end of pregnancy,” says **Ted Golos**, a reproductive physiologist and professor of comparative biosciences at the SVM. “What wasn’t known with much clarity before this study is that it appears it’s a severe risk factor in early pregnancy.” Golos and his collaborators published their results Feb. 21, 2017 in the journal *mBio*.

According to the Centers for Disease Control, listeria makes about 1,600 Americans sick each year — a relatively small number, but a group heavy on newborn babies and older adults with undeveloped or weak immune systems.

“The problem with this organism is not a huge number of cases. It’s that when it is identified, it’s associated with severe outcomes,” says **Charles Czuprynski**, a professor of pathobiological sciences at the SVM and director of the University of Wisconsin-Madison Food Research Institute.

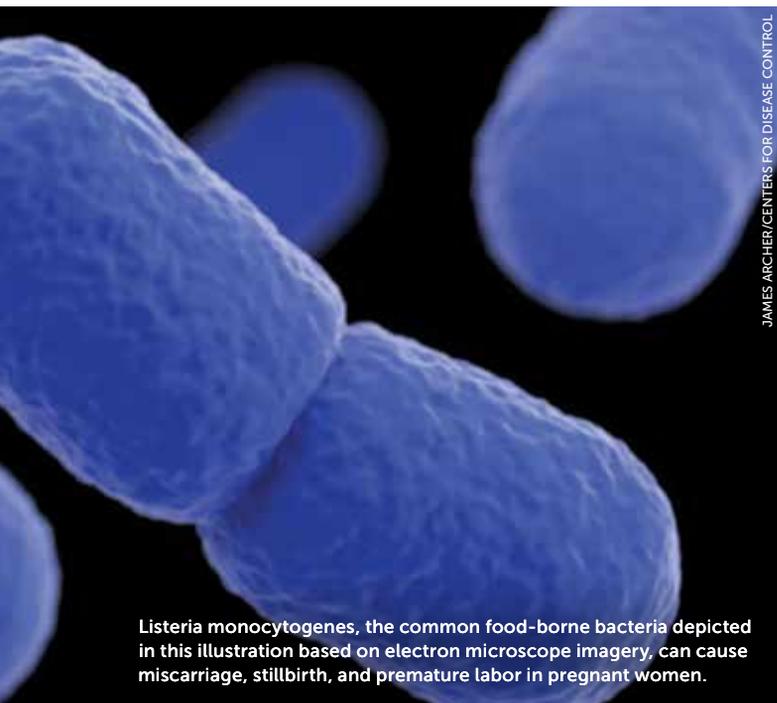
Pregnant women are warned to avoid many of the foods — among them unpasteurized milk and soft cheese, raw sprouts, melon, and deli meats not carefully handled — that can harbor listeria because the bacterium is known to cause miscarriage and stillbirth and spur premature labor. Those severe outcomes have resulted in a zero-tolerance regulatory policy for listeria in ready-to-eat foods. But when it occurs, listeria infection in pregnancy may go unnoticed. The few recognizable symptoms are nearly indistinguishable from the discomfort most newly pregnant women feel.

“It’s striking that mom doesn’t get particularly ill from listeria infection, but it has a profound impact on the fetus,”

says Golos, whose work is funded by the National Institutes of Health. “That’s familiar now, because we’ve been talking about the same difference in Zika virus.”

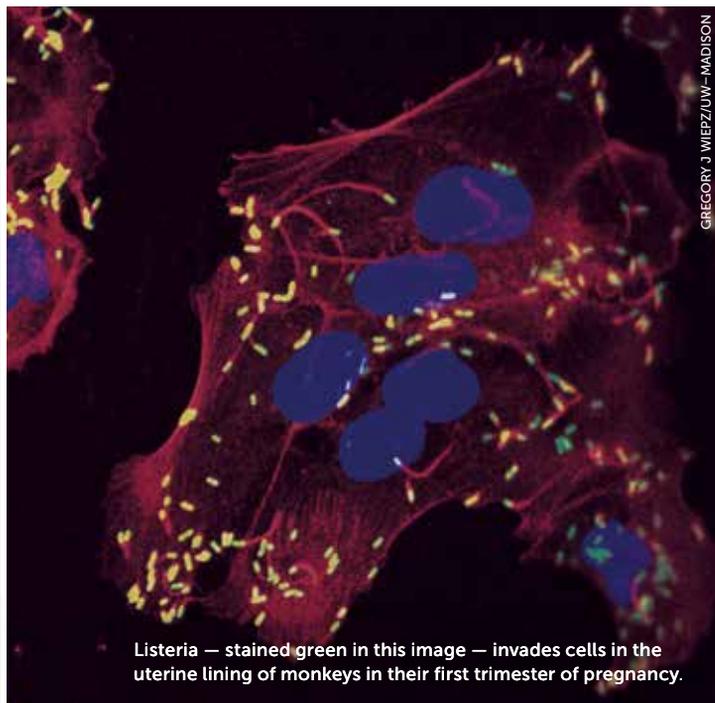
Sophia Kathariou, a North Carolina State University professor of food science and microbiology, provided a strain of listeria that caused miscarriage, stillbirth, and premature delivery in at least 11 pregnant women in 2000. Four pregnant rhesus macaques at the Wisconsin National Primate Research Center were fed doses of the listeria comparable to what one might encounter in contaminated food. **Bryce Wolfe**, a UW-Madison graduate student studying cellular and molecular pathology who is lead author of the study, monitored the speed and progression of listeria’s spread.

“What’s particularly striking about the work Bryce did is the detailed information we now have about the organism,” Czuprynski says. “The animal ingested it; she tracked it being shed in feces and showing up in the bloodstream. They did ultrasound analysis of



JAMES ARCHER/CENTERS FOR DISEASE CONTROL

Listeria monocytogenes, the common food-borne bacteria depicted in this illustration based on electron microscope imagery, can cause miscarriage, stillbirth, and premature labor in pregnant women.



GREGORY J. WIEPZ/UW-MADISON

Listeria — stained green in this image — invades cells in the uterine lining of monkeys in their first trimester of pregnancy.

the fetus and could then show events in terms of where the organism was preceding fetal demise.”

None of the monkeys showed obvious signs of infection before their pregnancies came to abrupt ends. But in tissue samples taken after each monkey experienced intrauterine fetal death, Wolfe found listeria had invaded the placenta — the connection between the mother and the fetus, which usually prevents transmission of bacteria — as well as the endometrium, the lining of the uterus.

“In that region, there’s a rich population of specialized immune cells, and it is exquisitely regulated,” says Wolfe. “When you introduce a pathogen into the midst of this, it’s not very surprising that it’s going to cause some sort of adverse outcome disrupting this balance.”

The researchers believe the inflammation caused by the maternal immune response to the fast-moving listeria also affects the placenta, keeping it from protecting the fetus.

“It should be a barrier,” Golos says. “But we’re hypothesizing that the ma-

ternal immune system’s attempt to clear the bacteria actually results in collateral damage to the placenta that then allows the bacteria to invade the fetus.”

The results suggest listeria (and perhaps other pathogens) may be the culprit in some miscarriages that usually go without diagnosed cause, but the bacteria’s stealth and speed may still make it hard to control.

“There are effective antibiotics available. It is treatable,” Wolfe says. “The issue is that because it’s asymptomatic, the fetus may be infected by the time anyone realizes the mother was infected.”

Golos and Wolfe plan to continue work with listeria to better define how the bacterium targets the reproductive tract, its incubation time, and the problems it causes leading up to miscarriage. Their goal is to provide basic knowledge about the progression of infection and the maternal immune response to intracellular pathogens in pregnancy, which may help other researchers battling similar dangers such as Zika virus.

Chris Barncard



Ted Golos



Charles Czuprynski



Bryce Wolfe

Fund Supports 12 New Research Projects to Improve Companion Animal Health

Thanks to grants from the school's Companion Animal Fund (CAF), faculty and residents at the UW School of Veterinary Medicine (SVM) will launch 12 new research projects aimed at improving animal health care.

Nearly \$110,000 in grants were distributed this year to help SVM researchers explore protein biomarkers in canines with pneumonia, define laryngeal paralysis phenotypes in dogs, map the spread of tick-borne Powassan virus in Wisconsin, compare sedation protocols for feline blood donations, and more.

Special species health is another area supported this year with a study of clinical amphibian anesthetics. In an effort to develop new, species-specific protocols, zoological medicine resident **Taylor Yaw** and zoological medicine faculty members **Christoph Mans** and **Kurt Sladky DVM'93** will evaluate the sedative effects and safety of two different anesthetic drug combinations in poison dart frogs.

"Most of the published literature is research oriented, not clinical. We are interested in a reversible injection sedation procedure, as it is safer and promotes rapid reversal, unlike the standard immersion techniques currently used," says Sladky, a clinical professor of zoological medicine in the Department of Surgical Sciences.

According to Sladky, few organizations fund exotic species studies, and the CAF grants have served as an excellent foundation as preliminary studies for some of his larger grant applications. The CAF grants also support residents and students by providing a strong training component.

The CAF 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 uses



Poison dart frogs are ideal subjects for studying sedation in amphibians. Safer anesthetic protocols are needed in the field of special species health services for a variety of clinical procedures such as X-rays, blood sample collection, and minor surgical procedures. To work toward addressing this unmet need, professors Christoph Mans and Kurt Sladky and resident Taylor Yaw have received a Companion Animal Fund grant to study different anesthetic drug combinations.

the funds to award faculty and staff with grants to further research that will enhance the care of companion animals. This year, the school funded 12 research projects, three more than during the 2016 awards process.

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

"We are grateful to the donors who sustain the curiosity and academic excellence of our faculty," says Kristi Thorson, associate dean for advancement and administration. "Their gifts make it possible for our investigators to zero in on areas of diagnosis and treatment that need attention and to explore and test new methods and protocols that could directly impact the quality of care for companion animals — both locally and nationally."

Denise Garlow

Principal Investigators for Companion Animal Fund Projects in 2017

Jonathan Bach

Clinical Associate Professor
Department of Medical Sciences

Heidi Barnes Heller

Clinical Assistant Professor
Department of Medical Sciences

Kristen Bernard

Professor
Department of Pathobiological Sciences

Guillaume Leblond

Clinical Instructor
Department of Medical Sciences

Peter Muir

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Department of Surgical Sciences

Xuan Pan

Assistant Professor
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Susannah Sample

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Lesley Smith

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Department of Surgical Sciences

Lauren Trepanier

Professor
Department of Medical Sciences

Katrina Viviano

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Department of Medical Sciences

Julie Walker

Clinical Associate Professor
Department of Medical Sciences

Joel Weltman

Clinical Instructor
Department of Medical Sciences

Study descriptions can be found at vetmed.wisc.edu/caf-abstracts-2017

Donate to the Companion Animal Fund at vetmed.wisc.edu/caf.

A Better Life for Bruce

Story and photos by Nik Hawkins

A neurologist at the SVM has developed an easier, less stressful way to give cats seizure medication and is working to prove its effectiveness through a clinical study – with promising results.

The story of **Bruce**, a young domestic shorthair, is one you may have heard before. One day, a bedraggled tomcat wanders onto the porch of a kind-hearted couple. He makes return visits in the coming weeks, and the enamored pair starts leaving food just outside their door. Before too long, the persistent stray charms his way inside. And just like that, the alley cat becomes a house cat — and the proud new “owner” of two devoted people.

In this cat tale, the people are **Elizabeth “Liz” and Don Martiniak** of Janesville, Wisconsin. They opened their home to Bruce with complete confidence that they would gain a friendly, loving companion. And they

were right. Today, he’s 13 pounds of orange and white fur and affection. But little did they know Bruce also harbored a medical complication, a plot twist in this otherwise familiar story.

Coping with Seizures

In June 2015, Bruce began displaying odd behavior. Every couple of months, he would lose consciousness for a few minutes while his limbs moved sporadically. Following these episodes, he would bounce frantically around the house for as long as an hour at a time. To make matters worse, stressful scenarios, like driving the short distance to their primary care veterinarian, seemed to trigger

similar incidents. For Liz Martiniak, it was déjà vu.

“I had a cat many years before who experienced seizures,” she says. “I was told there was nothing I could do except keep them calm and try not to let them hurt themselves during the seizure.”

Seizures don’t afflict a major proportion of the feline population. But they are one of the most common reasons why cats are referred to veterinary medical neurologists, according to **Heidi Barnes Heller**, clinical assistant professor of neurology and neurosurgery at the UW School of Veterinary Medicine (SVM). They are caused by an imbalance of electrical signals in the brain.



Previous page and above: Professor Heidi Barnes Heller conducts a physical examination of Bruce while his owner, Liz Martiniak, keeps him comfortable. Bruce is enrolled in a clinical study of different methods for administering phenobarbital, a common seizure medication. *Inset:* Barnes Heller holds a syringe containing a phenobarbital ointment that she developed as a more convenient and less stressful alternative to pills.

“If you imagine a teeter-totter, you want to be parallel to the ground as an overall electrical balance in the brain,” says Barnes Heller. “Seizures happen when you have too much excitation or too little inhibition happening in a particular area of the brain.”

An electrical imbalance can stem from idiopathic epilepsy, which is itself caused by a simple chemical imbalance, or diseases that excite or suppress brain activity, like liver failure, low blood sugar, head trauma, brain tumors, meningitis, and strokes. Common clinical signs of seizures in cats include abnormal face or body movement with or without a change in their awareness.

“For example, some cats can lay on the ground and ‘paddle’ their limbs, go unconscious, and urinate,” says Barnes Heller. “Other cats twitch their lips, ears, and face, seem a bit dazed, and then go on about their business, while other cats run around the room like they’ve gone

crazy and then seem confused when they settle down. How the seizure appears is dictated by what part of the brain is activated during the seizure.”

Medicinal treatments for seizures in animals have existed since the early 20th century, although this is perhaps not widely known. Based on their previous experience, the Martiniaks assumed there were no medical solutions for Bruce, so they chose not to bring the issue to their veterinarian. But a fortuitous encounter with an episode of the Larry Meiller Show on Wisconsin Public Radio made them change their perspective.

Seizing an Opportunity

Sandi Sawchuk, a clinical instructor and primary care veterinarian at the SVM, makes frequent guest appearances on Meiller’s show. She typically talks about a variety of pet topics and takes caller questions on the air. Liz

Martiniak often listens to these helpful segments, but one Thursday while out driving, something told her to make the leap to being a caller.

“I decided to pull over and call, and I told her about Bruce,” says Martiniak, “and she told me about a clinical trial for a seizure medication at the UW vet school. I decided to follow through right away.”

It was a good thing she did because many complications can result from seizures in cats, according to Barnes Heller. “Leaving a cat’s seizures untreated risks brain damage,” she says. “The damage may result in progressively worsening seizures — and therefore a more difficult seizure pattern to treat or resolve — or changes in personality, behavior, and attitude.” In addition, if a cat’s seizures remain uncontrolled for a long period of time, it can develop other organ problems. Sudden death resulting from seizures is uncommon in cats, but it does occur.

Not long after Liz Martiniak's conversation with Sawchuk, she and her husband consulted with their primary care veterinarian at Blackhawk Veterinary Hospital, who recommended they explore the clinical study. With a referral in hand, they brought Bruce to UW Veterinary Care for a neurological examination as soon as they could.

Although Bruce did not undergo advanced testing or diagnostic imaging, based on his prior clinical signs and the results of the examination, Barnes Heller determined his seizures were likely caused by idiopathic epilepsy or a previous head trauma. In many ways, this was good news — it did not appear he was suffering from another underlying disease, his seizures were likely treatable, and he was eligible for the clinical study.

Feeling at ease with Barnes Heller, the Martiniaks enrolled Bruce in the study without thinking twice. "Dr. Heidi has been wonderful," says Liz Martiniak. "Everything she does with Bruce she explains so thoroughly — what it's for and why it needs to be done. She handles Bruce so gently. I can tell she really loves him."

"They're such great advocates for Bruce," Barnes Heller says of the Martiniaks. "They approached the situation saying, 'Let's make Bruce better and advance science at the same time.'"

Tale of Two Seizure Treatments

First discovered in 1912, phenobarbital is the oldest anti-seizure medication that is still commonly used as a treatment for people today. For veterinarians, it is usually the first go-to drug for addressing seizures in cats. Initially recognized for its sedative and hypnotic properties, it was later discovered that phenobarbital was an effective anticonvulsant because it suppresses the quick, extraneous firing of neurons in the brain that is associated with seizures. It's been a life-changing drug for many cats — at least, for those that will take it.

"Oral phenobarbital has been the standard of care since the 1900s, but

getting some cats to take a pill is difficult," says Barnes Heller. "It's a stressful situation for many cats, and you have to give a repeated dose at the same times every day or the drug won't work."

To help cut down on anxiety for cats and hassle for owners, and to expand the pool of cats that can be treated effectively with phenobarbital, Barnes Heller developed a transdermal version of the drug specifically for cats. The special lotion can be rubbed into a cat's ear twice per day, and the cat's body slowly absorbs the drug in the necessary amounts through its skin.

First, Barnes Heller and the neurology team evaluated the transdermal phenobarbital in healthy cats to make sure it was safe and effective. A total of 18 healthy cats completed the trial and helped verify that transdermal phenobarbital can be successfully absorbed through the skin. Before releasing this drug to the market, however, Barnes Heller wanted to verify that it was comparable to oral phenobarbital when given over a longer period of time to cats with seizures.

To do this, she established a clinical trial with funding from the SVM's Companion Animal Fund, a pool of money donated by generous individuals and clinics that supports vital animal health care studies (see page 8). Over a period of seven months, each participating cat was first given oral phenobarbital and then the topical form, and their responses to the different treatment methods were compared.

"The study has shown that the cats are tolerating the topical treatment, absorbing it properly, and doing well in terms of their seizures," says Barnes Heller. She plans to publish the results and bring the transdermal medicine to the market in the near future.

Seven of the eight cats in the study have experienced positive results, and Bruce is among them. His seizures "responded beautifully" to both the oral and topical delivery methods, says Barnes Heller, and he has been seizure-free since he began the trial in September 2016.

The clinical trial requires multiple blood draws to determine how well the drug is being absorbed. But rather than ask the Martiniaks to make the trek to Madison for each one — and to cut down on stress for Bruce — Barnes Heller and Bruce's primary care veterinarian worked out a system where blood samples could be taken at Blackhawk Veterinary Hospital and sent over night to the SVM for analysis.

"He is so happy now," says Liz Martiniak. "He seems more affectionate and relaxed, as well. Prior to the medication, each seizure he had was worse than the one before. We are so grateful he got this help."

Seeking Cats for More Clinical Trials of Seizure Medication

Heidi Barnes Heller and the Neurology and Neurosurgery Service at UW Veterinary Care are conducting additional clinical trials of seizure medications. They are currently seeking healthy, friendly cats weighing 5 kilograms (about 11 pounds) or more for an evaluation of an oral version of a seizure drug called levetiracetam, otherwise known by the brand name Keppra.

Participants will be asked to give their cat this medication once daily for 10 days. The course of medication will be followed by an overnight stay at UW Veterinary Care where members of the neurology team will draw blood samples for analysis using an IV catheter over a period of 30 hours. Participants will receive free bloodwork, physical examination, neurological examination, and a gift card to a coffee shop.

Contact

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LEARNING ... CENTERED

Story by Ashley Voss Photos by Nik Hawkins

Floor-to-ceiling windows have replaced the bank of non-functional solar panels that once stretched across the school's south facade, shedding welcome, natural light on the educational experience at the UW School of Veterinary Medicine (SVM) — and making room for a whole lot more.

In spring 2017, the much-anticipated Renk Learning Center opened its doors to a new stage in teaching and learning at the SVM. This transformation of underutilized space into a student-focused hub came about thanks to a major gift from two UW alumni — the late Walter and Martha Renk — as well as generous donations from SVM alumni and friends and a significant contribution from the UW–Madison campus.

Prior to breaking ground on the project, the Veterinary Medicine Building had remained largely unchanged since its construction more than 30 years ago, despite dramatic shifts in the classroom that altered how faculty deliver course materials and how students process information.

While SVM instructors embraced these changes by adopting active learning exercises, case-based activities, and flipped classrooms, and by incorporating hands-on clinical experiences into earlier stages of the curriculum, only so much could be achieved within the bounds of decades-old construction. To give innovation more room to grow, demolition and construction of the new student space kicked off in May 2016.

“This new center will help us continue to progress in how we teach and serve our future veterinarians,” says **Lynn Maki**, associate dean for

student academic affairs. “As we learn more about what’s best for veterinary medical students from a teaching and learning perspective and in terms of how we deliver additional academic and support services, we need to rethink, adapt, and expand our methods.”

The extensive remodeling project repurposed storage rooms and renovated limited study areas to clear the way for much-needed improvements. This includes an active learning area for team-based problem-solving and case studies, an expanded Clinical Skills Training Center for practicing core veterinary medical skills, an additional counseling office and meditation room for wellness and mental health support, dedicated study and testing spaces, and much more.

Take a photo tour of the new Renk Learning Center on pages 13–15.

Hands-on Learning

A new active learning room featuring several small group workspaces will better facilitate team-based problem-solving courses within the Doctor of Veterinary Medicine (DVM) curriculum, such as clinical pathology and Active Integrated Learning (AIL).

Kristen Friedrichs DVM'91, clinical associate professor of pathobiological sciences and AIL course co-coordinator, has already seen an improvement in the delivery of her class, which teaches second-year students how to “think and communicate like a clinician.” Working in small groups, students tackle actual and adapted cases, uncovering diagnoses, proposing treatment plans, and building essential skills for interacting with clients and veterinary medical professionals.

“This is not a lecture course. This is a doing course,” Friedrichs says. “We give students some basic principles and a framework, and then we say, ‘go at it.’”

The structure of the new active learning space is much more conducive to collaboration. Previously, large groups crowded around limited lab benches and students primarily worked from individual computers because shared screens were small and far away from their work areas. However, the new space features dedicated workstations, each equipped with a large central monitor where both presentations and case data can be displayed, making it much easier to communicate among team members and consult with instructors.

“We were the guinea pigs to test the room during our active integrated learning and clinical pathology courses. It gave us a much more comfortable space to work through cases, in groups of five or six students, evaluating case data and generating our diagnostic and treatment plans,” says **Carl Magnusson DVMx'19**. “The new room was beneficial for those courses and will also be a great space for group studying.”



Previous page: Diamond Taylor DVMx'19 and Austin Pritchard DVMx'19 confer with each other as they analyze a hypothetical patient case during an Active Integrated Learning course in the new Renk Learning Center.

Top: Clinical instructor Linda Sullivan DVM'87 shares a laugh with Geoff Gieni DVMx19, Jake Nilles DVMx'19, and Cal Melberg DVMx'19 during a class held in the Active Learning Room.

Above: Laura Bunke DVMx'19 works with her small group at one of the workstations in the Active Learning Room.

Right: Clinical associate professor Kristen Friedrichs DVM'91 walks through a hypothetical patient case with a group of students during her Active Integrated Learning course.





DENISE GARLOW



Top: Instructional specialist Kristen Cooley demonstrates how to place an esophagostomy tube in a model inside the new Clinical Skills Training Center.

Above: Kore Chan DVMx'20 and a feline companion offer clinical skills tips for Candace Cottingham DVMx'19.

Left: Susie Nowak DVMx'19 and Priscilla pause for the camera during a clinical skills training session.

Right: Cooley paints a life-size cow model with a dry erase coating in preparation for drawing an anatomically correct diagram of internal organs for use in clinical skills training.

Enhanced Skills

The new Clinical Skills Training Center (CSTC) — more than four times the size of the previous space — will enable students to practice core technical veterinary medical skills using models and other learning tools before performing procedures on live patients in the teaching hospital and other clinical settings.

The CSTC is currently used to enhance clinical skills development for first- through third-year DVM students and for small group teaching of fourth-year students during their clinical rotations. It also offers students increased access to trainers, large and small animal models, and equipment and the opportunity for more independent practice and refinement of skills outside of normally scheduled classes.

“The new center is open and available to students 24/7,” says SVM Instructional Specialist **Kristen Cooley**, who oversees the CSTC. “The space is a place to practice things without the fear of hurting an animal or looking silly doing something for the first time. It is safe and low-stress and a 100% judgement-free zone.”

Inside the expanded CSTC, which now allows instructors to work with groups of up to 45 people, students can practice a variety of skills — ranging from basic to advanced. The scope of activities includes instruction on everything from bandaging a canine or equine leg to performing CPR to identifying surgical instruments and performing surgical techniques.

The school is working with faculty to identify clinical competencies within their existing courses and find ways to augment their curriculum with hands-on skills training through the CSTC, with a future goal of launching an individual course that teaches clinically related concepts in both large and small animal medicine.

“Thus far, the development of clinical skills training has been a very organic process whereby faculty have developed skills sessions that are important to their particular specialty and either teach the labs themselves or in collaboration with veterinary technicians from the teaching hospital,” says **Robb Hardie**, associate dean for professional programs and clinical professor of small animal surgery. “We hope that this process continues to grow as more faculty become aware of the opportunity.”



Personal Space

Student wellness and mental health support were key considerations in completing the new space. The Renk Learning Center features several areas where students can join classmates for group activities or take a moment for personal reflection.

A new study area offers students an additional space to gather in between classes, in the evenings, and on weekends to work on their own or in small groups. Reflecting the SVM's commitment to inclusivity, a new testing room will also enhance the school's ability to accommodate students with special exam location and scheduling requests.

Counselors from the school's Personal and Wellness Support Services (PAWSS) office are also more accessible to students thanks to a dedicated second floor counseling room. In addition to offering one-on-one sessions, counselors use this space to meet with the SVM's wellness committee and faculty and staff who teach in the communication curriculum.

PAWSS counselors further help students deal with the high pressure environment of veterinary medical school by hosting resiliency training workshops where students discuss their feelings and stressors in a group setting, and they offered a mindfulness selective course in May 2017.

"There is a growing body of research on mindfulness indicating that it decreases symptoms of depression and anxiety," says **Christina Frank**, associate counselor with the PAWSS office. "Students benefit from knowing that mental health services are available to them if they're needed. My hope is that, if we can help some students, it will have a positive ripple effect on others."

Students can also take a quiet break away from studying and re-center themselves through small group or independent exercises in a new meditation room.

"Besides the rigor of the curriculum and normal, everyday stresses, veterinary medical students have so many other pressures," says **Shannon Gildersleeve DVMx'18**, SVM student wellness committee chair. "They face ethical, moral, and emotional dilemmas daily. Dealing with that without preparation can be completely overwhelming.

"Having a space dedicated to improving mental health in the new facility shows the dedication of the administration to helping students and faculty improve their own mental wellbeing."

Nik Hawkins contributed to this story.

Top: Associate counselor Christina Frank has a one-on-one conversation with a student in the new, more accessible Personal Wellness and Support Services office in the Renk Learning Center.

Middle: Heidi McClean DVMx'18 enjoys the natural light and quiet in the new student study area.

Bottom: This sign thanking alumni donors who contributed to the construction of the Renk Learning Center is mounted in the new study area.



DENISE GARLOW

The Power of Donors

The new student space is called the Renk Learning Center in recognition of two UW alumni, the late Walter and Martha Renk, who made the largest gift for the project. In addition to the couple's donation, nearly 100 SVM alumni and friends contributed to the remodeling project, thanks in part to a matching gift from an anonymous donor through the 512 Wingra Street Fund. Other portions of the learning center bear the names of key donors, including the meditation room (Gary and Cammy Seamans), the testing room (Class of 1987 alumnus Terry Clark DVM'87 and his wife, Irene), the reading room (Class of 1988 alumnus Mark Tetrick DVM'88 and his wife, Catherine), and the kitchenette (Nestlé Purina PetCare Company).

Additional naming opportunities are still available. For more information, contact Director of Development **Heidi Kramer** at heidi.kramer@supportuw.org or **608-327-9136**.



Albee Messing



Laura Moody

Researchers Make Headway toward Understanding Alexander Disease

Researchers at the University of Wisconsin–Madison have made a surprising and potentially crucial discovery about Alexander disease, a rare and fatal neurological disorder with no known cure.

Using a mouse model for this disease, which in humans involves the destruction of white matter in the brain, a research team led by **Albee Messing**, professor of comparative biosciences at the UW School of Veterinary Medicine (SVM) and director of the UW–Madison Waisman Center, found that a protein behind the symptoms of the disease, called GFAP, is broken down more rapidly in the body than researchers previously found in cell culture studies.

The results were published recently in a new study in the *Journal of Biological Chemistry*.

That’s a paradigm shift because “the popular idea was that the GFAP protein would not be degraded as quickly,” says **Laura Moody**, a former postdoctoral researcher in Messing’s lab and first author of the new study. “But nobody had really tested this idea.”

Scientists already knew that GFAP accumulates to excess in some cells within the nervous system, called astrocytes, leading to the loss of motor and cognitive functions in people with the disease and, in some cases, even death. However, they previously thought its accumulation was due to the fact that the cells created too much protein and did not break enough of it down.

The new finding could change the way researchers think about and try to solve Alexander disease.

“This study is an essential foundation for figuring out how to reduce or prevent GFAP accumulation in cells,” says Messing, a professor of neuropathology and faculty trainer in the SVM’s Comparative Biomedical Sciences graduate program. “Previously, we thought that decreasing synthesis or increasing degradation of GFAP would be the way to go. But now it appears as if the cells have already tried to adapt to the higher levels of GFAP by increasing degradation, so we can now focus on finding ways to decrease GFAP synthesis.”

Moody and Messing worked with colleagues at the UW–Madison Biotechnology Center to calculate the rate at which GFAP protein was being made and degraded in mice with or without Alexander disease mutations.

They fed the mice food that contained known quantities of two different versions, or isotopes, of nitrogen, a component of all proteins. The two isotopes — one heavy and one light — are not radioactive and don’t harm the animals.



Albee Messing, a professor of comparative biosciences at the UW School of Veterinary Medicine, is also director of the University of Wisconsin–Madison’s Waisman Center, which focuses its research, training, outreach, and clinical service efforts on human development, developmental disabilities, and neurodegenerative diseases. The center is located just blocks from the Veterinary Medicine Building.

The heavy isotope of nitrogen occurs very rarely in nature, so usually it makes up only a minute fraction of proteins. But the mice were fed food containing higher-than-normal levels of the heavy isotope so that when the mice ate this food, their bodies absorbed the nitrogen isotopes and used it for several purposes, including to make GFAP molecules.

The researchers then used a technique called mass spectrometry to track the increase of heavy nitrogen in GFAP protein in the mice. Then, they used that information to calculate how quickly GFAP was being made and degraded, or turned over in cells.

“We found that in tissue culture there was no difference in how quickly GFAP was being turned over,” says Moody. “But surprisingly, in the animal models, GFAP was turning over more quickly in animals with Alexander disease mutations than in ones without those mutations.”

The new finding could change the way researchers think about and try to solve the rare, fatal disease.

While not a direct measure of protein degradation, the increased rate of GFAP turnover in mouse models of Alexander disease strongly indicates that degradation is, in fact, increasing as well, says Messing.

Moody says the finding will change the way therapeutics for Alexander disease are devised.

“Now that we know that GFAP is being synthesized and degraded more quickly in Alexander disease, it opens up new avenues for research,” she says. “It seems that if we can slow down the synthesis of GFAP, we should also be able to slow down its accumulation and develop therapies to treat Alexander disease.”

Other authors of the study include Gregory Barrett-Wilt and Michael Sussman, both at UW–Madison. The work was largely supported by donors to the Jelte Rijkaart Fund.

Adityarup “Rup” Chakravorty

Aliota Receives WAA 'Forward Under 40' Award

He’s an expert on tropical mosquito-borne diseases, but **Matthew Aliota PhD’10** also runs grand experiments in communication, and the Wisconsin Alumni Association (WAA) has recognized his efforts with a 2017 Forward Under 40 Award.

In 2015, the pathobiologist was one of the first scientists to discover the presence of the Zika virus in Colombia. By the next year, an epidemic of the virus — believed to cause damage to the developing human brain — had spread to at least 50 countries.

“Zika virus caught the world off guard, but it should not have,” says Aliota, who works as a research scientist at the UW School of Veterinary Medicine.

His expertise dates back to his work as a UW undergraduate researcher, when he began studying how mosquitoes and microscopic parasites can affect people in underdeveloped countries. He went on to research mosquito- and tick-borne diseases for several years as a fellow in a New York state public-health lab. “I was fascinated by the complexity

of the biology I was learning and simultaneously heartbroken by the global impact of these diseases,” he says.

Aliota is also an expert at communicating his findings with the public. His recent Zika research includes developing a mouse model to study how the virus affects the brain as well as confirming that a particular type of benign bacterium can prevent transmission of the virus in mosquitoes.

Aliota wants to share discoveries like these not just quickly but far and wide. It’s when research findings are made public and more people can share in knowledge, he says, that science can more quickly lead to virus-blocking strategies and improved public health. To that end, Aliota makes it a point to collaborate with many bright minds. He is part of a research team that includes



JEFF MILLER

fellow faculty, undergraduate researchers, graduate students, and scientists who visit from regions affected by mosquito-carried disease.

And he invests his time in outreach to students in K–12 classrooms, elected officials, news media, and fellow alumni. “I believe scientific communication is an important responsibility,” he says.

Read more at go.wisc.edu/aliota.



DANA CRARY

Top Dog in Brown County

When is a veterinarian more than a veterinarian? When they show as much care for people as they do for animals. That definitely defines **Patrick Warpinski DVM'91**.

Warpinski is the owner and operator of The Animal House, an award-winning Green Bay animal services business that he established in 2004. Along with providing veterinary medical care, boarding, grooming, and training, The Animal House initiated a local partnership with Paul's Pantry to provide low-cost pet care for individuals in need.

"My wife and I are proud to contribute to the greater good in Green Bay and the surrounding area," says Warpinski. "We're always looking for ways to care for the community as a whole — not just pets."

Along with Paul's Pantry, the Warpinskis donate to the local YMCA summer camp programs that help kids stay on the right track and sponsor a miniature veterinary medical clinic in the Green Bay Children's Museum, among a variety of other charitable endeavors. "We do it because it's the

right thing to do," Warpinski says.

When it came time to attend college, Warpinski also knew what to do. "It was UW-Madison or nothing for me," he says. "Academically, it's obviously a top-notch school. And I couldn't have gotten a better veterinary medical school education any place other than Wisconsin."

Warpinski earned his bachelor's of science and doctor of veterinary medicine degree from UW-Madison. But when he first enrolled, he didn't necessarily know those would be the degrees he'd earn or the career path he'd take.

"I used to spend lots of time on our family farm," he says. "And I liked science, so I thought that maybe this is what I should do, and I made an effort at achieving that goal."

He achieved that goal and more. Most recently, Warpinski was named president of the Bay Area Humane Society, and he traveled to China in 2015 to participate in the pilot Nobivac Global Health Veterinary Exchange program. He was one of 10 veterinarians across the world chosen to participate in the program, which offers the chance to visit

UW-MADISON CONNECTIONS IN BROWN COUNTY

722 UW students

4,449 UW alumni

102 UW employees

Source: University of Wisconsin Service Center

other clinics around the globe to exchange knowledge and experience.

"I learned to take nothing for granted while at UW-Madison, and that I can do whatever I put my mind to," says Warpinski. "And that's helped give me an attitude of perseverance that I've used to achieve many of these things in my life."

Brian Klatt

Editor's Note

These alumni profiles originally appeared on the University of Wisconsin-Madison's comprehensive campaign website, allwaysforward.org, as part of a series highlighting connections between the campus and each of Wisconsin's 72 counties. The series featured several alumni of the UW School of Veterinary Medicine. We highlighted Kurt Hallgren DVM'02 in the September/October 2016 issue of our Alumni E-news and Margaret Meier Jones DVM'96 in the Spring 2017 issue of *On Call*.

For the Love of Animals in Oneida County

On her family's 10-acre hobby farm just outside of Ashland, Wis., **Chelsea Retaskie DVM'14** grew up with a love of animals — and a menagerie of chickens, cats, ducks, rabbits, and dogs.

Like many kids, she had a dream of becoming a veterinarian. But Retaskie made her dream come true, earning a pre-veterinary degree at Northland College and coming south to study at the UW School of Veterinary Medicine (SVM).

Armed with that education, Retaskie headed back up north, where she was hired at Minocqua's Northwoods Animal Clinic as a small animal veterinarian.

"This job is a great opportunity, working with experienced veterinarians who can mentor me," Retaskie says. "It's close to my family, and I hunt a little bit, and like fishing a lot."

Retaskie provides care for dogs and cats, though she also sees guinea pigs, ferrets, and the occasional chinchilla. She also focuses on dental care and soft tissue surgery. At the clinic, she enjoys using her SVM skills in her work and to expand her knowledge.

Along with her clinic colleagues, Retaskie provides veterinary medical care at the nonprofit Northwoods Wildlife Center, which offers rescue and rehabilitation services for wildlife and public education for the community. She and other clinic veterinarians also take turns at providing health care at the Vilas County shelter, ensuring that adopted pets go home in tip-top shape.

Retaskie's SVM education prepared

her well for all of these roles. "It's been amazing. You're in college for eight years, and then to apply the knowledge I've gained in real life is exciting," says Retaskie.

"I love working with animals and their owners and seeing the love people have for their animals," she says. "They're part of their family, and it's special to be part of that."

Dennis Chaptman



A Message to DVM Alumni

Meet Morrie



The Class of 2015 has a distinguished honorary classmate, Morrie Waud, who shadowed the class from orientation in fall 2011 through their graduation. He wanted to see how students learn all that they need to know to become a practicing veterinarian in four short years. This is just one way Morrie has demonstrated his commitment to students and to the school. Thanks to his generosity, recent students have benefited from impactful scholarships, practical gifts, social opportunities, and gift cards that help them take a much deserved break from the rigorous demands of being a veterinary medical student. Our students, clients, and patients have all benefited from the support he has provided to care for large animals — one of the many reasons our large animal hospital bears his name.

Through his most recent gift to the school's building expansion project, Animals Need Heroes Too, Morrie has not only provided the single largest lifetime gift to the school; he has created an opportunity for the SVM family to have a significant impact on the campaign. He

understands that our alumni, faculty, staff, and students appreciate how important the expansion is and that they want to help make it a reality.

Because of the Morrie Waud Match, gifts from the SVM family will have an even greater impact. I hope you have received the letters from the Alumni Advisory Board and the school about how the match lets you double, triple, or even quadruple your commitment to the building campaign.

This is a remarkable opportunity from a truly remarkable man. Paraphrasing Morrie, he hopes you will join him in making the building expansion a reality and help improve the lives of animals and people around the world. I hope you will too.

Kristi V. Thorson

Kristi V. Thorson

Associate Dean for Advancement and Administration

P.S. You can learn more about the Morrie Waud Match and how you can help at vetmed.wisc.edu/morriewaudmatch.

Awards & Honors



NIK HAWKINS

Newbury Receives Hero Award from Maddie's Fund

Sandra Newbury **DVM '03**, clinical assistant professor at the UW School of Veterinary Medicine and director of the UW Shelter Medicine Program, has been officially recognized as a hero by Maddie's Fund, a national family foundation that seeks to "revolutionize the status and well-being of companion animals."

Newbury was one of 15 animal welfare leaders from across the nation who were honored with Maddie Hero Awards for their outstanding efforts in furthering the organization's "no-kill nation mission through shelter medicine, community lifesaving, and big picture thinking."

Each recipient received a \$10,000 grant for their respective organizations in recognition of their work to advance the welfare of companion animals in the United States through their innovative ideas, progressive thinking, and lifesaving actions.

The awards were announced on April 26, 2017, in celebration of what would have been the 30th birthday of the organization's inspiration and namesake, Maddie the Miniature Schnauzer.



COURTESY KAWAOKA LAB

Kawaoka Secures GHI Seed Grant

Yoshihiro Kawaoka, professor of pathobiological sciences at the UW School of Veterinary Medicine, has received a seed grant from the University of Wisconsin-Madison Global Health Institute (GHI) to identify neglected and new human viruses in Africa.

Kawaoka, who established collaborative research in West Africa during the Ebola virus outbreak, will catalog viruses circulating among the population of Sierra Leone with an eye to improving diagnoses, identifying new viruses and, potentially, preventing the next epidemic.

"Neglected viruses ... and novel viruses represent a major health risk for human populations," Kawaoka writes in his application. Ebola, which was not considered a major threat prior to the 2013 to 2016 outbreak, is an example. Without early diagnosis, the outbreak grew.

"The global health community must remain vigilant. The increase in global travel, overlap of human and animal habitats, climate changes, and bush meat trafficking may facilitate the emergence and reemergence of viruses in the human population, potentially resulting in devastating outbreaks," Kawaoka says.

Drawing on expertise from schools and colleges across the UW-Madison campus, the 2017 GHI grant recipients showcase the breadth of disciplines needed to ensure health for all. The Seed Grants especially are designed to launch new global research projects and make them competitive for sustained external funding. Seed Grants carry the largest awards of up to \$50,000 each.

A red poster for a "TAILGATE and Continuing Education Event" for "WISCONSIN VS. NORTHWESTERN" on "SEPTEMBER 30, 2017". The poster features the School of Veterinary Medicine logo at the top left, a stylized graphic of a football field with an arrow pointing to the right, and a small flag with a "W" on it. The text is in white and pink. The URL "vetmed.wisc.edu/tailgate" is at the bottom.

School of Veterinary Medicine
UNIVERSITY OF WISCONSIN-MADISON

TAILGATE

and Continuing Education Event

WISCONSIN VS. NORTHWESTERN

SEPTEMBER 30, 2017
Veterinary Medicine Building
vetmed.wisc.edu/tailgate

Rachel McMahon Earns AVMA/AVMF 2nd Opportunity Research Scholarship

Rachel McMahon DVMx'19, has been named one of five individuals from universities across North America to receive the 2017 AVMA/AVMF 2nd Opportunity Research Scholarship.

The award from the American Veterinary Medical Association and American Veterinary Medical Foundation is intended to provide support for students who have previously conducted a summer research project and are seeking to gain a second summer of research experience.

McMahon will work on a research project titled, "Obesity Promotes Breast Tumor Development and Metastases in an Immunocompetent Mouse Model."

Selection for the scholarship, valued at \$6,000, is highly competitive. Finalists are selected by the AVMA's Council on Research. The funds are to be used toward the recipient's research project and to offset travel expenses to attend the Veterinary Scholars Program 2017 Symposium at the National Institutes of Health.



Arendt Awarded \$100,000 Poultry Research Fellowship

Maria Arendt MS'15, DVM'17, PhDx'19, a student in the UW School of Veterinary Medicine's Comparative Biomedical Science graduate program, was awarded the 2017 Poultry Research Fellowship by Merck Animal Health.

In partnership with the Poultry Science Association Foundation, Merck Animal Health offers a \$100,000 research grant through the Poultry Research Fellowship to be put toward the recipient's work in poultry science.

Arendt is in the process of writing her dissertation, "Role of mucosal interleukin-10 (IL-10) in Eimeria infection." Her research explores how suppression of IL-10, a protein which inhibits immune response, imparts resistance to infection by Eimeria, a parasite known to cause intestinal disease in cattle and poultry.

Upon completion of the project, Arendt hopes to better understand the mechanisms by which Eimeria induces the release of IL-10 in its hosts and to highlight new targets for immunotherapy. Her work may contribute to the search for alternatives to antibiotics in preventing disease and help address increased consumer demand for antibiotic-free food production.



ASHLEY VOSS

UWVC's Accreditation Renewed

UW Veterinary Care (UWVC), the UW School of Veterinary Medicine's teaching hospital, has been granted accredited status from the American Animal Hospital Association (AAHA) for a three-year period, the full timeframe that can be assigned.

UWVC earned its recent reaccreditation after undergoing a comprehensive self-evaluation process and hosting a team of surveyors at its Small Animal Hospital in March 2017. AAHA does not currently evaluate large animal hospitals.

Following a review of UWVC's compliance with approximately 900 standards associated with patient care, customer service, employee safety, and adequacy of its facilities and equipment, the surveyors found that the hospital exceeds the standards in all 20 evaluation categories.

"I never had any doubt that we would measure up well to the AAHA standards, but it is gratifying to receive the official rating to recognize the excellent work that our team does every day at UW Veterinary Care," says **Mark Oglesbay**, UWVC's associate director.

Ashley Voss

Compiled by Ashley Voss and AnnaKathryn Krueger

Hooves in the Hands of a Master

On Dean Johanninger's first day as the farrier at the UW School of Veterinary Medicine's large animal hospital in 1985, he remembers feeling a bit intimidated. But when it came time to talk equine lameness evaluations with staff and specialists, he felt right at home. He attributes this to his prior work with M.E. "Babe" Cullen, a third generation equine veterinarian, which prepared him to look beyond the hoof.

"The great thing about being part of a therapeutic team — listening to ideas and considering new approaches — is that we are not focused on finding what's wrong," says Johanninger. "We're looking at the horse and asking each other what can be improved? What positive thing can we do for the horse? When we have a lame horse, it is a whole-horse problem."

Being curious and methodical are at the core of Johanninger's character, and they are qualities that led him to connect with two of the greatest minds in the farrier industry — Gene Ovnicek and Ric Redden. Ovnicek's encyclopedic knowledge of methods and Redden's thorough understanding of mechanics form the basis for how Johanninger works today.

However, Johanninger's methods have evolved over the years out of necessity. "If I wouldn't have changed, I wouldn't be here," he says. "New ideas for improvements came along, and my career grew with them. I hit walls and went through them." In 2011, Johanninger was recognized for his boundary-breaking work when he was inducted into the International Horseshoeing Hall of Fame. And he has continued adding to his extensive body of knowledge, acquiring certifications as an American Farrier's Association (AFA) Journeyman Farrier, Natural Balance Farrier, and Natural Balance Barefoot Trimmer, and in Live Sole – Hoof Mapping.

As an independent contractor, Johanninger works closely with UW Veterinary Care's team of equine surgeons, internists, radiologists, and residents. "To have Dean here is the most wonderful resource," says **Samantha Morello**, clinical assistant professor of large animal surgery. "His base of knowledge is just so rich."

He educates both students and staffers on the importance of proper foot care. Effective therapeutic equine footwear allows a horse's heels and toes to rock, which reduces stress to the structures of the foot and promotes healing, according to Johanninger. As with running and hiking, special products now play an even bigger part in therapeutic farriery. "Now we use cushions and arch supports just like humans," he says.

In 1998, Johanninger became a HoofTalk Certified Equine Natural Hoof Technician, a credential based on training in the natural shoeing methods of Lyle "Bergy" Bergeleen. Using this knowledge, his ongoing goal is to shift the mindset



DENISE GARLOW

of owners and trainers toward giving restorative methods a chance to work. "Pain is really caused by a deeper, soft tissue injury, and every horse is going to take longer for inflammation to go away and become sound," he says. "Muscle soreness is often a result of having to protect the soft tissue injury."

Karen Anderson encountered this with her horse, **JJ**. "He literally couldn't walk," she says. "There was no light in his eyes. Every step was painful for him."

Anderson, who travels to the UWVC Morrie Waud Large Animal Hospital for appointments from Glen Ellyn, Illinois, recalls watching as Johanninger went to work, putting clogs on JJ's uneven feet — the result of an unfortunate shoeing incident. "He walked out sound," says Anderson. "JJ had his personality back."

From working with clients like Anderson, Johanninger understands deeply the humility of being with horses and their people. This awareness influences how he communicates across the spectrum of individuals involved with ongoing care. "You've got to educate the owner on the plan and the progress — giving recommendations and allowing the client to make the decisions," he says. "I give options, and I get their permission to make changes because shoeing affects the overall well-being of the horse."

Johanninger's plans for his impending semi-retirement sound as full as most people's working years. He's looking forward to consulting with industry on farrier products and working with young farriers-in-training by traveling to their workshops and giving advice — a continuation of his life as a devoted mentor. "If it weren't for Dean ... I wouldn't have made it this far," says John Heral, a farrier from South Beloit who has been training with Johanninger since 2011. "What I see in one day with him would have taken me five years to learn out in the field."

Denise Garlow

A Special Opportunity for SVM Alumni

Morrie Waud Match

Morrie Waud, long-time friend, donor, and honorary member of the Class of 2015, has committed \$5 million to match gifts and pledges toward the UW School of Veterinary Medicine's Animals Need Heroes Too campaign for a building expansion—the most important project the school will undertake in the next 30 years.

DOUBLE YOUR IMPACT

Gifts and pledges of

\$500-\$999

will be matched 1:1

TRIPLE YOUR IMPACT

Gifts and pledges of

\$1,000-\$4,999

will be matched 2:1

QUADRUPLE YOUR IMPACT

Gifts and pledges of

\$5,000+

will be matched 3:1

Gifts or pledges from SVM alumni and students, and their immediate families, as well as faculty and staff (past and present) will be matched. Commitments can be made as a single gift or multi-year pledge. The match is projected to end in summer 2018.

For more information, please contact Heidi Kramer, Director of Development, at 608-327-9136 or heidi.kramer@supportuw.org.



“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

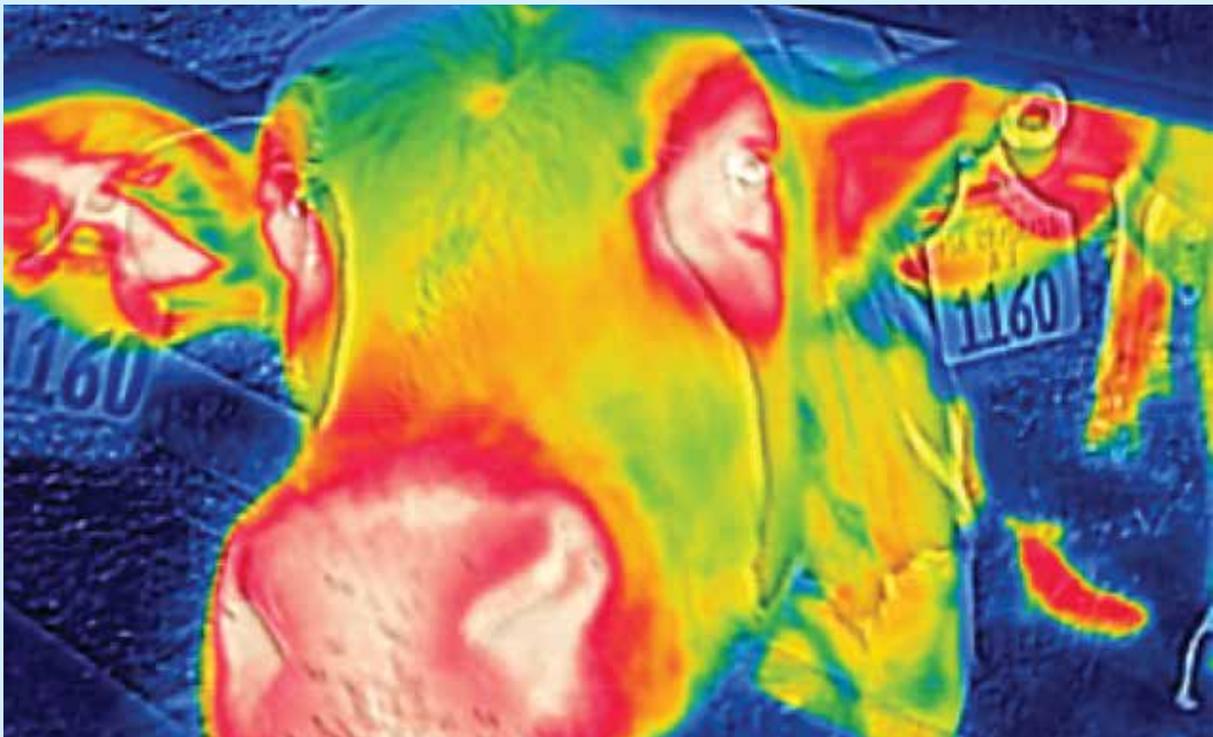
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Spotted Cow

A decrease in eye temperature can indicate stress to a cow's nervous system, giving researchers the opportunity to monitor the animal's well-being. This thermal image by **Kyle Karlen DVMx'20**, which was taken as part of a research project on calves' response to a common procedure for dairy cattle, was selected as one of the winners of the University of Wisconsin-Madison's 2017 Cool Science Image Contest.