profiles

Summer 2018 \\ College of Veterinary Medicine

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COLLABORATION BLASTS GLIOBLASTOMA

New canine brain cancer study shows promise for dogs and humans

Public and private support is critical

Thank you!

Over the past five years, our College has enjoyed unprecedented levels of public and private support. This has allowed us to hold the line on tuition—a cumulative increase of just 3.3 percent, to replace some of our aging facilities, and to invest in our unique and important centers.

Clearly, our glass is more than half full, especially considering the fact that since 2014, the Minnesota Legislature has invested nearly $51 million in improving food animal medicine. This includes a new infectious disease research laboratory, an expanded Minnesota Poultry Testing Laboratory in Willmar, Minn., 10 new faculty positions, and one-time funding for service improvements to the Minnesota Veterinary Diagnostic Laboratory. And, in a similar time frame, private donors have committed another $53 million toward our priority fundraising goals. These gifts have enhanced our capacity to do the research, education, and service that our state, nation, and the veterinary profession expects us to do.

This public and private support is making a huge difference. But critical gaps remain. We lack sufficient scholarships for students who graduate with an average of $180,000 in college loan debt. And most of our facilities are bursting at the seams, which limits our productivity and ability to recruit and retain the best scientists.

In terms of public support, the State of Minnesota must increase its share of support for the Minnesota Veterinary Diagnostic Laboratory to reflect the many public health benefits a strong D-lab provides. We also need increased state support to avoid large future tuition increases.

For private support, we have set a fundraising goal of $70 million, and the $53 million that we have already raised means that we are 75 percent of the way to achieving this goal. This is part of the University's $4 billion, 10-year campaign, known as *Driven: The University of Minnesota Campaign*. The private funds we have and will raise over the next three years will be used for:

- Conducting essential, field-shaping research to advance animal and human health - $15 million
- Increasing food safety and security for a growing population - $10 million
- Diagnosing and preventing zoonotic diseases that threaten animals, humans, and our economy - $5 million
- Building upon the superior services delivered by the CVM's critically needed centers - $40 million

The health of animals, people, and the environment is inseparable in today's world. The dynamic convergence of these groups has produced complex and unprecedented challenges for our region, nation, and every country around the globe. Our College of Veterinary Medicine is uniquely situated to address these challenges, since the hefty task of doing so requires the advanced problem-solving leaders and cutting-edge research we produce. I hope you will join us during the campaign by considering a major gift to whatever area within the CVM matters to you.

Trevor Ames, DVM, MS, DACVM

profiles

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IN EVERY ISSUE

CVM is first in U.S. to announce compliance with new international education standards

Students earning a DVM from the College of Veterinary Medicine (CVM) are among the world's best-prepared veterinary graduates when it comes to protecting the health of animals and humans through disease prevention, control, and rapid response to emerging issues. This achievement is the result of a partnership between the CVM and Thailand's Chiang Mai University.

While not an imminent threat, the risk of global health pandemics that involve animal health is growing due to increases in globalization and drug-resistant diseases. "Food animals and the people who care for them are crossing international borders more than ever before," observes Dean Trevor Ames, DVM, MS, DACVIM. "Consequently, the likelihood that a foreign animal disease will sweep the globe is greater. Future veterinarians are more likely to be involved in a global health crisis during their career."

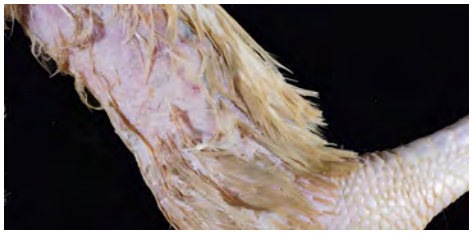
The World Organisation for Animal Health (OIE) established Day 1 Competencies in 2012 for graduating veterinarians at schools around the world. The competencies are designed to help graduates perform entry-level National Veterinary Service tasks that relate to the promotion of animal and public health.

Preparing new veterinarians for these complex challenges involved the development of new coursework and hands-on learning. A partnership between the CVM and Chiang Mai University's veterinary medicine faculty to address those challenges made it possible for both schools to meet the new international standards. The work was funded by the OIE as that organization's first twinning project for Veterinary Education Establishments.

New tools help fight arthritis in turkeys

Arthritis can cause significant losses for chicken and turkey producers—anywhere from 5 to 40 percent of a flock can be lost when a reovirus that causes arthritis takes hold. A University of Minnesota research team has spent the past seven years developing tools producers can use to control this nagging and sometimes devastating condition.

Turkey arthritis reovirus (TARV) and its distant genetic cousin, chicken arthritis reovirus, make birds lie down, reluctant to move, or limp on one or both legs. In turkeys, the condition appears as early as 10 to 12 weeks of age and its severity peaks at 15 to 16 weeks of age. The disease primarily afflicts tom (male) turkeys, and research has found little evidence of disease transmission between chickens and turkeys. The U of MN team of



The skin was removed from the swollen hock joint of a 15-week-old tom turkey to reveal marked accumulation of scar tissue (fibrosis) around the joint.

Another 15-week-old tom turkey from the same flock has an enlarged hock with rupture of the gastrocnemius tendon.

Photos courtesy of Rob Porter

Sagar Goyal, PhD, MSc, BVSc, Sunil Kumar, BVSc & AH, PhD, MVSc, and Rob Porter, DVM, PhD, DACVP, has greatly expanded our knowledge. For instance, they've proven that arthritis in commercial poultry herds is caused by the reoviruses, which have the ability to mutate into different strains. We now know that turkey poults can be infected as early as one week of age, and they can easily transmit the virus to their penmates. The team has found that the reoviruses survive in barn drinkers for up to two weeks and in litter for up to nine days. And their research has found that five readily available disinfectants are highly effective in controlling these arthritis-causing viruses.

So, what remains to be done? The reovirus team is working to improve the speed and accuracy of current testing methods, developing a turkey-specific test for detecting reovirus antibodies, i.e., the bird's immune response, and sequencing the complete genome of the TARVs to identify strain differences that will guide vaccine development.

Real-world science lessons, outside

This summer, The Raptor Center's (TRC) Education Department has embarked on a new mission—to help teachers engage students in real-life science in the outdoors. By the end of the summer, TRC, along with partners LT Media Lab, U of MN Extension, and Wolf Ridge and Eagle Bluff Environmental Learning Centers, will have provided 60 free demonstrations of its newest online science curriculum, Outdoor Investigator, to 600 teachers across the state of Minnesota.

Outdoor Investigator, an interactive online citizen science curriculum, directly engages students in the process of scientific investigation. The curriculum's six sections require that students get outdoors to observe and wonder about birds and the natural world, ask questions, develop research hypotheses, plan a realistic research project that can be tested, and analyze their data. The online tool then helps students draw a conclusion and build a report to present to classmates and teachers, according to education program manager Mike Billington.

"The curriculum inspires these young minds to become more conservation oriented and possibly even consider careers in the environmental sciences," says Billington.

Once teachers became acquainted with the curriculum, early estimates showed that as many as 15,000 students would participate in a citizen science project using Outdoor Investigator by the end of the 2018 school year.

Illustration by Molly Murakami

Photo by Martin Moen

Whether in small groups or large, students are receiving a higher-quality education thanks to the College of Veterinary Medicine's investment in a new classroom.

Classroom upgrade improves learning environment

Vastly improved sight lines and seating are making the CVM's Gross Pathology demonstration and multipurpose teaching laboratory space a better learning experience for students. A $180,000 remodeling project added bleacher seating for 60, a surgical light with a built-in camera, and a large monitor that will help students see what their instructor is demonstrating. It's a big improvement from the days when some students had to stand for the entire demonstration and squint to see the important details.

The remodeled classroom also can record video of the demonstration (which will be used for a variety of courses) and support continuing education courses both on-site and online.

Alumnus elected Regent

College of Veterinary Medicine alumnus Randy Simonson is the newest member of the University of Minnesota Board of Regents. He earned his PhD from the CVM in 1981 and is a veterinary microbiologist and entrepreneur from Worthington, Minn. Simonson joins the Board immediately and will represent Minnesota's first congressional district.

Doubling down on diversity and inclusion

Illustrations by Molly Murakami

The College of Veterinary Medicine's (CVM) Diversity and Inclusion Committee (DNIC) has put forward an actionable plan to improve and increase diversity and inclusion around the CVM. The plan was developed by the committee after considering multifaceted and extensive input from college faculty, staff, and students.

The plan has three main goals: to diversify organizational composition, to foster an inclusive culture, and to build an inclusive organizational reputation. Specific objectives of the plan include focusing hiring processes around diversity, implementing regular communication updates between the committee and the CVM, and identifying and celebrating champions for diversity and inclusion around the College.

As part of their efforts to acknowledge those who are committed to developing the capacity of the CVM to celebrate, support, and realize the value of diversity and inclusion, the DNIC awarded one faculty member, one staff member, and one student with the inaugural Diversity and Inclusion Awards on Education Day. The awards recognized the significant accomplishments and innovation of each recipient in achieving and sustaining diversity and inclusion efforts within the CVM's personnel, policies, programs, environment, climate, and constituencies.

The winners—Larissa Minicucci, DVM, MPH, DACVPM, associate professor in the CVM; Jessica McElmury, supervisor of the Primary Care Department; and fourth year veterinary student Rae Richardson—were each awarded a $1,000 stipend. "Each of the faculty, staff, and student winners had clear and concrete examples of initiating or participating in programs working with diverse populations, or helping to create a more supportive environment here in the CVM," says Dawn Foster, administrative director in the Veterinary and Biomedical Sciences Department and co-chair of the DNIC.

Since beginning her work on the DNIC, Foster says, "The phrase 'diversity and inclusion' is included in many more conversations. I've also noticed more willingness of individuals to act as allies for others or stand up for themselves, which is part of the culture we want to create."

Veterinary Isolation Facility completed

Advancements by College of Veterinary Medicine scientists in fighting infectious animal diseases are far more likely now that a new, $29.5 million research facility has opened. The building features the latest in biosecurity and safety systems to give researchers greater control over the many factors that can influence live animal studies while ensuring animal and human safety.

The building features a flexible design with rooms to accommodate animals of varying sizes. Each animal holding room is equipped with its own ventilation system and environmental controls. As a result, the building contains over 7.5 miles of piping and ductwork. It also required four coats of high performance paint on inside surfaces to ensure durability—enough to paint seven football fields.

Photo by Martin Moen

Workers remove the last bits of Veterinary Isolation Building A, which many alumni will remember. Behind it stands the new isolation facility.

In the planning stages for years, the new facility was funded by the 2015 Minnesota Legislature in the midst of the outbreak of highly pathogenic avian influenza.

Bob Morrison

Dr. Bob Morrison Legacy Fund established

Throughout his distinguished career, Bob Morrison, DVM, PhD, MBA, was an integral part of the swine community as a professor, swine producer, researcher, veterinarian, mentor, and valued colleague to many. His passion for helping producers and veterinarians—as well as leading educational programs that built human capacity—transformed the swine industry.

His work at the University of Minnesota helped lead the industry in controlling many swine diseases. Morrison's drive and passion were invigorating and evident in all aspects of his life and work. His boundless sense of curiosity guided those around him to seek answers, and his unique talent for creating relationships advanced the swine industry.

These attributes culminated in his creating the Swine Health Monitoring Project, which is now called the Morrison Swine Health Monitoring Program.

In the spirit of carrying forward Morrison's impact, the College of Veterinary Medicine has established the Dr. Bob Morrison Legacy Fund, which focuses on outreach, integrates research and industry, works with swine practitioners and farmers, and contributes to the success of the swine industry. Contributions to the fund will support a broader community of DVM students, graduate students, practitioners, and researchers to lead the industry in knowledge-based solutions in both health and production.

All corners of CVM represented in one of the biggest pelotons of Chainbreaker 2018

So far, a team of students, residents, faculty, a few staff members, and family and friends of students make up the third largest peloton for the Chainbreaker 2018 ride. With 56 riders committed, the team has a fundraising goal of $84,250. Chainbreaker is in its second year of raising funds for University of Minnesota cancer research.

"We've gotten a lot of support from many of our faculty members who have joined our team," says student leader Kristin Snyder. Faculty have donated much time and energy to recruiting fellow department members, hosting training rides and cycling classes, and contributing to various food fundraisers, which have offered everything from pancakes to quesadillas.

Snyder says another contributing factor to the team's success was that she and fellow student leader Marika Klosowski used a one-day-only registration fee waiver to spark interest around the College of Veterinary Medicine in joining the peloton. "In less than six hours, we had 65 riders, and by the next morning, we had already raised $555!" she says.

The peloton has many other irons in the fundraising fire, such as hosting a game night, silent auction, donation yoga class, and even a happy hour at a local brewery.

"I believe strongly in the value of the research performed at the Masonic Cancer Center," says Klosowski, "and I love having fun on my bike!"

The peloton is looking for alumni to join the ride. If you are interested, please contact student leaders Kristin Snyder (snyde727@umn.edu) and Marika Klosowski (kloso009@umn.edu).

THE MIDDLE GROUND:

URGENT CARE SERVICE A BOON TO VMC

BY PAIGE POLINSKY

The Veterinary Medical Center sees clients before and after business hours.

Spring seemed like a distant dream through April this year at the College of Veterinary Medicine (CVM). But the Veterinary Medical Center's Urgent Care Service (UC) was ready and waiting. As the snow thawed, drawing pets and their owners back outside, the UC team greeted a fresh flow of patients. As usual, they were prepared to treat the bug bites, bumps, and bruises that accompany more outdoor play. Since opening two-and-a-half years ago, the UC has made it a mission to provide skilled, efficient care for mild illnesses and injuries.

Success story: Boomer

Kendra Dauenhauer, DVM, recently treated Boomer, a Labrador retriever with a lame front paw. After noticing a painful bump on the paw, Dauenhauer and her team ran a full exam. They took X-rays to rule out broken bones and quickly discovered a massive splinter running through Boomer's paw. The team successfully removed the 2.5-inch wood shard and treated the area to prevent infection. Less than three hours after arriving, Boomer left with his family—a little sore, but lame no longer.

The UC offers worried owners like Boomer's a helpful middle ground. It serves cats and dogs whose ailments, while not apparent emergencies, are concerning enough to address after normal office hours. Owners seeking preventative care (diet recommendations, for instance) can safely wait to make a regular Primary Care (PC) appointment. Severe cases, such as pets exposed to toxins, should be rushed to Emergency Services (ER). The Urgent Care center, meanwhile, covers just about everything in between. As for owners who simply aren't sure where their pet belongs? The UC can provide guidance. Its clinicians triage each case quickly and carefully to ensure each patient is exactly where they need to be.

Success story: Felix

Although UC patients leave the same day they arrive, they remain in the hearts of UC staff long after. Justine Boschee, DVM, remembers treating Felix, a cat brought in for a nosebleed. Felix was already being treated for heart and kidney disease by PC and Cardiology Services when he arrived at Urgent Care. Boschee and her team identified elevated liver enzymes in Felix's blood work, and they determined his cardiac medications were the cause. Adjusting his medication regimen ended the nosebleeds. However, well after Felix left the UC, Boschee took the time to check in with his owner regularly through phone calls. Together, they discussed Felix's health and ways of improving his quality of life.

"Team" is the operative word, as it is the synergy of the experienced staff that ultimately drives the service's success.

Tucked inside the Veterinary Medical Center (VMC), the UC's central location within the hospital allows its clinicians to make fast, flexible treatment recommendations, and gives hospital staff the chance to tackle an animal's health and wellbeing as a whole. Some patients require specialized resources or more critical care. In these cases, further options are right down the hall—the ER is located within the same building. Rather than drive their pet to a new destination, owners can simply stay posted in the VMC waiting room.

The VMC provides other benefits to the UC, too. Urgent Care clinicians have access to the VMC's radiographic services, and they are able to receive reports after-hours. UC clients can easily use the VMC Pharmacy if needed (like the ER, it's under the same roof). The Urgent Care also stocks its own after-hours pharmacy. When the main VMC Pharmacy is closed, this "mini pharmacy" provides owners with products and medications commonly prescribed within the UC.

Though small, the core UC team is backed by solid experience and open communication. "Team" is the operative word, as it is the synergy of the experienced staff that ultimately drives the service's success. Both primary care doctors Boschee and Dauenhauer have ER backgrounds, and their confidence is reflected in the rest of the team, which makes for an encouraging experience for the fourth year CVM students that perform their clinical rotations there. According to Michelle Haralson, CVT, the students are consistently impressed by how nice the staff is to each other. "They hope to experience a similar atmosphere once they're out in the 'real world.'"

Success story: Ela

The UC team's assured, compassionate approach keeps patients coming back—sometimes simply to say hello. Ela the standard poodle was first brought to the UC in 2016. Boschee and her team successfully treated Ela, then just a puppy, for a skin infection. More visits over the next few months made Ela and her owner a favorite duo at the UC. Ela's owner is one of several that have dropped in just to chat with the team, with or without their pet.

"Over the past two and a half years, we have seen dramatic growth in our department, both within and outside the University community," said Boschee. And she expects the UC to develop and expand even further. Looking ahead, the team hopes to hire a third vet tech and include full-time CVM students in every shift. Another major goal is to acquire more tools. Topping the team's wish list is a tonometer, a device used to detect glaucoma. For both the UC and its patients, the future looks bright.

Photo by Ela's owner, Randy Roberts

Ela the standard poodle

Photo by Chris Cooper

CELEBRATING 10 YEARS AT THE LEATHERDALE EQUINE CENTER

2007 – 2017

Dedicated to horse health and the future of veterinary medicine

On October 15, 2007, years of planning culminated to welcome nearly 1,000 horse lovers to the new $14 million, 50,000-square-foot University of Minnesota College of Veterinary Medicine Leatherdale Equine Center (LEC).

Donor support made the facility possible, which would come to represent the College's dedication to education for future veterinarians and a research focus that would change horses' lives worldwide.

Ten years later, the Leatherdale Equine Center has exceeded those aspirations and more.

Breaking new ground in equine instruction

A decade after launching the LEC, veterinary students and staff are enjoying additional equipment, opportunities, and techniques that further the training of equine veterinarians and increase the odds of a precise diagnosis and treatment.

The College's equine curriculum includes third year courses in equine medicine. In the fourth year, an equine track is available for students wishing to be strictly equine veterinarians. For practicing veterinarians, continuing education provides opportunities for lifelong learning.

Some faculty, such as Erin Malone, DVM, PhD, DACVS, professor in the Department of Veterinary Population Medicine and director of the College's clinical skills program, remember teaching equine medicine and surgery in the Large Animal Hospital before the LEC was built. "Students now have improved access for practicing physical exams, as well as increased exposure to the DVMs and other staff," she says. "In the past, students learned skills during lab but didn't have any way to practice. Now they have the Practice Zone."

Created in 2015, The Practice Zone has surgery tables, an anesthesia machine, small animal models, and a model horse head that allows students to practice eye and nose treatment. Its centerpiece is "Princess Neigha," an equine model with intestinal and reproductive tracts. "We've really ramped up clinical skills teaching and offer more hands-on skills opportunities," says Sally Lightner, laboratory services coordinator for Malone.

And, technological updates, which further the immersive nature of the LEC's approach to education, abound.

The standing MRI captures hoof, pastern, and fetlock images while the 3T MRI adjusts higher to cover hocks and knees. A new neonatal ICU has specialized monitoring equipment and a crib area, allowing nursing and medical care to take place while mares and foals remain in contact. The hospital's new gastroscope provides remarkable image quality and allows standing stomach exams on even the largest horses. Meanwhile, a new, wireless telemetric ECG unit allows clinicians to evaluate the electrical activity of a horse's heart.

Hands-on experience, cutting-edge technology, and inspiring instructors are among the benefits of a University of Minnesota equine veterinary education. As Anna Firshman, associate professor of large animal internal medicine in the Department of Veterinary Population Medicine says: "Better facilities equal better learning, and happier horses equal safer learning."

This story was repurposed from two stories by Sue Kirchoff and Karin Winegar that originally appeared in the Leatherdale 10th anniversary brochure.

Photo by Sue Kirchoff

Fourth year veterinary students with Kelly Vallandingham *(second row, far right)*, teaching specialist, and Tigger, a teaching horse.

An evergreen education

BY KARIN WINEGAR

Alumni look back with gratitude at aspects of the many relevant experiences and practical opportunities provided at the LEC.

Melanie Jackson, '15 DVM

"State-of-the-art equipment, the arena for doing lameness testing, the advanced imaging capacities, and a design with horses in mind to limit further injury to horses and to humans—it is all there," says Melanie Jackson, '15 DVM, associate veterinarian at We Care Animal Hospital in Clintonville, Wisc.

"The LEC staff is amazing, the technicians fantastic," Jackson says. "They care about what they do and about all the animals that come through, and are always willing to help students. All the professors, teachers, and clinicians made sure we were learning and providing the best medicine for all our patients."

Casey Rabbe, '14 DVM

Casey Rabbe, '14 DVM owns an equine ambulatory practice in Fairmont, Minn., and a small-animal practice in Ankeny, Iowa, where she lives with her clinic partner and husband, Dane Tatarniuk, DVM, '15 MS, DACVS-LA, a former LEC instructor in surgery and lameness.

"I use everything I learned at LEC," says Rabbe. The U's research herd was particularly useful, she says, for instruction in reproductive medicine, vaccines, exams, and blood draws.

Rabbe chose the University of Minnesota because of the LEC's great reputation for clinicians and teachers. "I got a lot of one-on-one attention with doctors," she notes. "They all knew your name, knew a bit about you, and the areas you were interested in—that meant a lot to me." Rabbe still calls many CVM faculty to consult on cases and stay in touch. "Not only are they great instructors, but I respect them as people."

Alex Bianco, '11 DVM, DACVIM

"As a student, you don't really realize how good you have it until you get out into practice or talk to students from other schools," says Alex Bianco, '11 DVM, DACVIM, who joined the CVM faculty as an instructor after completing her specialty training at Purdue University. "You are much more influenced by the clinicians and teachers than you are by equipment or research."

Both as student and instructor in large animal internal medicine, Bianco found that the LEC's ratio of technicians to clinicians "allows everyone to spend more time discussing cases and teaching without worrying that patient care is suffering." She says she feels fortunate to have gone to the U as an equine-oriented veterinary student.

Photo by Kelsey Schwalbach

Brady Bergin, Kerry Kuhle, and Sara Wefel

West Metro Equine Practice

When owners west of the Twin Cities need care for their horse, many rely on West Metro Equine Practice's ambulatory medicine team. The West Metro team—Brady Bergin, DVM, Kerry Kuhle, DVM, and Sara Wefel, DVM, DABVP-ES—provides services that run the gambit: vaccinations, blood testing, dentistry, upper airway endoscopy, lameness evaluations, reproductive ultrasounds, and minor field surgeries. The team also provides a two-week equine ambulatory clinical rotation for fourth year veterinary students. Students join the clinicians on farm calls and follow-up visits while discussing cases as calls are made.

"We enrich the students' experience by providing hands-on training whenever possible and incorporating students into the diagnostic workup and treatment plan for every case we see," says Bergin. "I have a lot of pride in this service. We have a good team and students value and enjoy learning what we have to teach."

Encouraging a foal's will to live

BY MARTIN MOEN

It's no exaggeration to say that Ghazillionheir CA is like a cat with nine lives—the 4-month-old Arabian foal is defying the odds. To start with, he's the product of 20-year-old semen. Add in his difficult journey to good health, and it is remarkable to see him thriving at his mother's side in a stable at Conway Arabians outside Chatfield, Minn.

"He just didn't look right," is how owner Lori Conway remembers Ghazillionheir CA's early days. "You could tell he didn't feel well—wasn't eating or as active as we like our new foals to be."

Three days after his birth, Conway decided to bring the foal to the Piper Equine Hospital at the LEC. The foal and his dam were quickly loaded onto the trailer the Conways keep prepped and ready for emergencies like these.

It proved to be a wise decision. Conway Arabians—recognized as a premier breeder of Arabian and half-Arabian horses in North America—has been bringing their more challenging cases to the Piper Equine Hospital for five years. The farm currently has more than 150 horses and saw a record 23 foals born in 2017.

"Our foals are incredibly valuable," says Lori's husband, Peter, who purchased his first Arabian more than 25 years ago. "In our business model, we need successful pregnancies and great medical care. And we get that from our local veterinarians as well as the team at Piper Equine."

When Ghazillionheir CA arrived at Piper Equine Hospital, Anna Firshman, BVSc, PhD, DACVIM, DACVSMR, associate clinical professor in large animal internal medicine, and her team noted his critical condition. After initial tests and imaging, abdominal surgery was deemed necessary. Led by Francisco Rodriguez, DVM, the surgical and anesthesia team removed five feet of dead intestine, presumed to be due to severe enteritis.

"This condition isn't uncommon," Firshman says, "but you don't often see a positive outcome. He definitely has a strong will to live. Getting him here so quickly and rapidly instituting specialized treatment likely saved his life." Ghazillionheir CA spent 11 days in the hospital, where large animal resident Brittany Welch, DVM, veterinary students, and technicians made sure he received the best possible care.

Photo by Peter Conway

The 4-month-old foal, Ghazillionheir CA

Firshman says it is partnerships like these—dedicated owners, experienced local veterinary care, and high-level expertise at a regional medical center—that ensure a strong future for Minnesota's equine community.

The next decade: building on our success

When it opened in 2007, the LEC represented a great leap forward for quality and expanded capacity in equine teaching, clinical service, and research. Continuous improvements in the decade since have kept the facility and its programs at the forefront of national and international expertise. But what comes next? Continued success will require a focus of effort and resources.

Priority areas for expansion include ensuring that our equine-track graduates are successful in obtaining high-quality practice jobs and internships, and acquiring scholarships for equine-track students and ongoing support for the equine teaching herd. We also hope to expand our equine sports medicine program by creating an endowed chair of equine sports medicine that can focus his or her efforts on expanding research and clinical applications in sports medicine and rehabilitation. And we aim to bolster our critical care and emergency medicine by adding a new isolation facility at the LEC—which will optimize patient care and efficiency—and upgrading the facilities for neonatal foal care to match our state-of-the-art patient care capabilities.

If you are interested in supporting our equine education, research, or clinical services areas, please contact Mindy Means, development officer, at the College of Veterinary Medicine at 612-626-5482 or mkmeans@umn.edu.

Photo courtesy of the LEC

Sue Loly performs a standing MRI on an equine patient.

Photo courtesy of Miranda Shaw

Miranda Shaw as a third year veterinary student after receiving her white coat

BLAZING NEW TRAILS

Miranda Shaw builds community for the VetLEAD program

BY CAROLYN BERNHARDT

Miranda Shaw, '18 DVM, gets things done. After graduation, she headed to the Chicagoland area for a job at Banfield Pet Hospital in Niles, Illinois.

"I have always been interested in veterinary medicine," she says. "I was always into science and excelled at school. Whenever I travel, I have to see the local zoo."

Hailing from Indianapolis, Indiana, Shaw is not unfamiliar with the Midwest. However, she headed southward for her undergraduate degree, attending Florida A&M University in Tallahassee, Florida, for a bachelor's in animal science.

Florida A&M is the University of Minnesota College of Veterinary Medicine's (CVM) primary partner institution for the Veterinary Leadership through Early Admission for Diversity (VetLEAD) program. To meet the increasing demand for veterinarians and to promote diversity within the veterinary profession, the CVM introduced VetLEAD, which creates a pathway into veterinary school for high-ability students at partner institution Florida A&M University. VetLEAD was modeled after the successful Veterinary Food Animal Scholars Track program (VetFAST), an early decision program that the College created to recruit talented students to fill a shortage of food animal veterinarians nationwide.

"Florida A&M University has a strong animal science program, which makes it a great institution for a program like this," says Laura Molgaard, DVM, associate dean for Academic and Student Affairs at the CVM. "We were really lucky to have a faculty champion at Florida A&M in Dr. Ray Mobley, who helped us form this strategic partnership, and we look forward to forming more partnerships to expand the reach of VetLEAD."

When Shaw learned about VetLEAD at a 2011 Animal Science Club meeting at Florida A&M, the annual application deadline was only a few days away. She called Karen Nelson, director of admissions at the College of Veterinary Medicine, to ask for an application extension—and she got one.

A pensive perseverance

Shortly after submitting her application, Shaw visited campus for her interview with the CVM. After being admitted to the program, Shaw realized she wanted to complete VetLEAD's summer program prerequisite at the U before deciding for sure if she wanted to make the trek northward for vet school. So Karen Nelson, director of admissions in the office of Veterinary Medical Academic and Student Affairs, worked with faculty at The Raptor Center to create an internship for Shaw. The CVM provided funding for this experience, which Shaw completed in the summer of 2014 before she started classes.

"I was exposed to various roles—I completed a research project, I was on the education floor doing tours, I fed and medicated birds, and I worked in the clinic," says Shaw. "I loved it, I loved Minnesota, and I decided to stay."

According to Shaw, VetLEAD's summer program and undergraduate GPA requirements ensured her preparedness for the rigorous coursework at the CVM. And she says there was no public specification "marking" her as a VetLEAD student. Her classmates didn't even know about the program until she told them. "When I got here, I was just a regular student. I really liked that."

But Shaw's drive to seek opportunity certainly sets her apart from the average student. She worked as the Elanco Animal Health student representative at the CVM while on campus. She also volunteered as a student ambassador at the CVM, where she gave tours to prospective veterinary medicine students. "I know firsthand how hard the school will work to get you here and keep you here," she says.

New insights

That isn't to say that this go-getter doesn't have ideas for ways to improve VetLEAD. "Just to have someone travel down to Florida A&M who looks like the students, talks like them, is close to their age, and can tell them about the program—and that the snow won't kill them—would be really helpful," says Shaw.

With three more VetLEAD students following in Shaw's footsteps, Shaw notes the supportive sense of community among the group as a highlight of her time in the program. "I like the semi-mentorship I get to give to the VetLEAD students coming up behind me," says Shaw. "I love sharing tips that can be helpful as you matriculate through the school."

For VetLEAD students arriving at the CVM who have never left Florida or the south, moving up north can be a big step—one that binds them together. "As a new VetLEAD student, you will have this little family when you get here," says Shaw. She also says that at Florida A&M, the whole school acts as a family. She can go to any state and find alumni and be welcomed with open arms. "VetLEAD is kind of like an arm of that, too."

And she certainly keeps the esprit de corps alive here at the CVM. Being the first student to complete the VetLEAD program, Shaw had no predecessor to whom to turn for helpful tips. So, upon arriving in Minnesota, she quickly identified what information could help a southern student acclimate.

Shaw says that students from the south often don't know what kind of cold-weather clothes they may need or how to winterize their cars before arriving in Minnesota. "It's little things like that that can make the transition hard," she says. "I have tried to tell the VetLEAD students coming in behind me those things because I know they may not know them."

Making her mark

Admittedly, veterinary medicine lacks diversity as a profession, so when Shaw looked around at the CVM and saw she was the only black person in her class, she figured that was par for the course. But Minnesota's statewide lack of diversity created an extra hurdle for making new friends outside the CVM. "Most of my friends from undergrad that are interested in veterinary medicine are going to schools in the south," she says.

Of course, none of this stopped Shaw from finding and fostering community—when a friend founded a networking group for young African Americans in the Twin Cities, Shaw promptly joined. Her suggestion to the University of Minnesota, specifically, is to bring students from all corners of medicine and health schools together more often at University-coordinated events to expand their networks.

Leaving a legacy of community building at the CVM and in the Twin Cities, Shaw will head only slightly south for her next endeavor, for which she is—unsurprisingly—already setting goals. "At Banfield, I am starting out as an associate veterinarian, but I have already talked to Banfield about what opportunities there are in their corporate office."

While Banfield is Shaw's next stop on her professional journey, her sights are set on a career in animal industry no matter where it takes her. But wherever she goes, one thing is certain: she has already gone where no woman has gone before her.

Photo by Martin Moen

Miranda Shaw and her family at commencement in May

POLISHING PEDAGOGY

Molgaard aims to roll veterinary education into the future

Illustrations provided by Laura Molgaard

After two years of collaborating with colleagues, Laura Molgaard, DVM, associate dean for Academic and Student Affairs at the University of Minnesota College of Veterinary Medicine (CVM), helped introduce a new framework for competency-based veterinary education (CBVE) at the Association of American Veterinary Medical Colleges' (AAVMA) annual meeting in March 2018 in Washington, D.C.

The new framework provides a modern, shared, core educational structure for all veterinary graduates, then encourages schools to build on that core for their unique setting. It also sets out to help students know where they stand in their progress, anticipate the expectations for any given competency, and understand what they need to do to be proficient.

Molgaard co-chairs the CBVE working group within AAVMA alongside Jennie Hodgson, PhD, of Virginia-Maryland College of Veterinary Medicine. The working group consists of 10 veterinary education thought leaders from around the globe.

"Most veterinary schools have been slowly traveling down this path for the last 15 years, so it's not completely new," says Molgaard. "But this is a turbo boost to those efforts. Rather than each school reinventing the wheel, we are saying let's work together to develop the best wheel that can roll all of us into the future."

CBVE prioritizes equipping instructors with tools to help them give specific, constructive feedback to students.

Molgaard also sees CBVE as an opportunity for professional development among faculty and staff. "We want to help them continue their learning journey in competency-based education and to provide resources for curriculum review as well as a toolbox for student assessment," she says.

The new approach shows promise for improving veterinary medical students' relationship with learning and veterinary medicine, which could in turn promote mental health. "We have built competencies around clinical decision-making, population health, communication, collaboration, professionalism, professional identity, and scholarship—it is a broad framework of the complete veterinarian, which could contribute to well-being," Molgaard says.

CBVE aims to promote a growth mindset that can help students understand where they stand in their progression toward competence, and help faculty provide feedback in a way that emphasizes development.

"Instead of telling students, 'You did not meet expectations,' we want to be able to tell them, 'This is where you are, this is where you need to be, and this is how you can get there.'"

THE BRIGHT FUTURE OF "MINI-BRAINS"

While Tim O'Brien, DVM, PhD, DACVP, and his team aren't the first to develop lab-made brain organoids—known as "mini-brains"—they are the first to discover a high-yielding and efficient way to construct them.

A College of Veterinary Medicine professor and division head of Comparative Pathology in the Department of Veterinary Population Medicine, O'Brien hoped that by exposing induced pluripotent stem (IPS) cells to a hydrogel, he and his team could grow the IPS cells in 3-D.

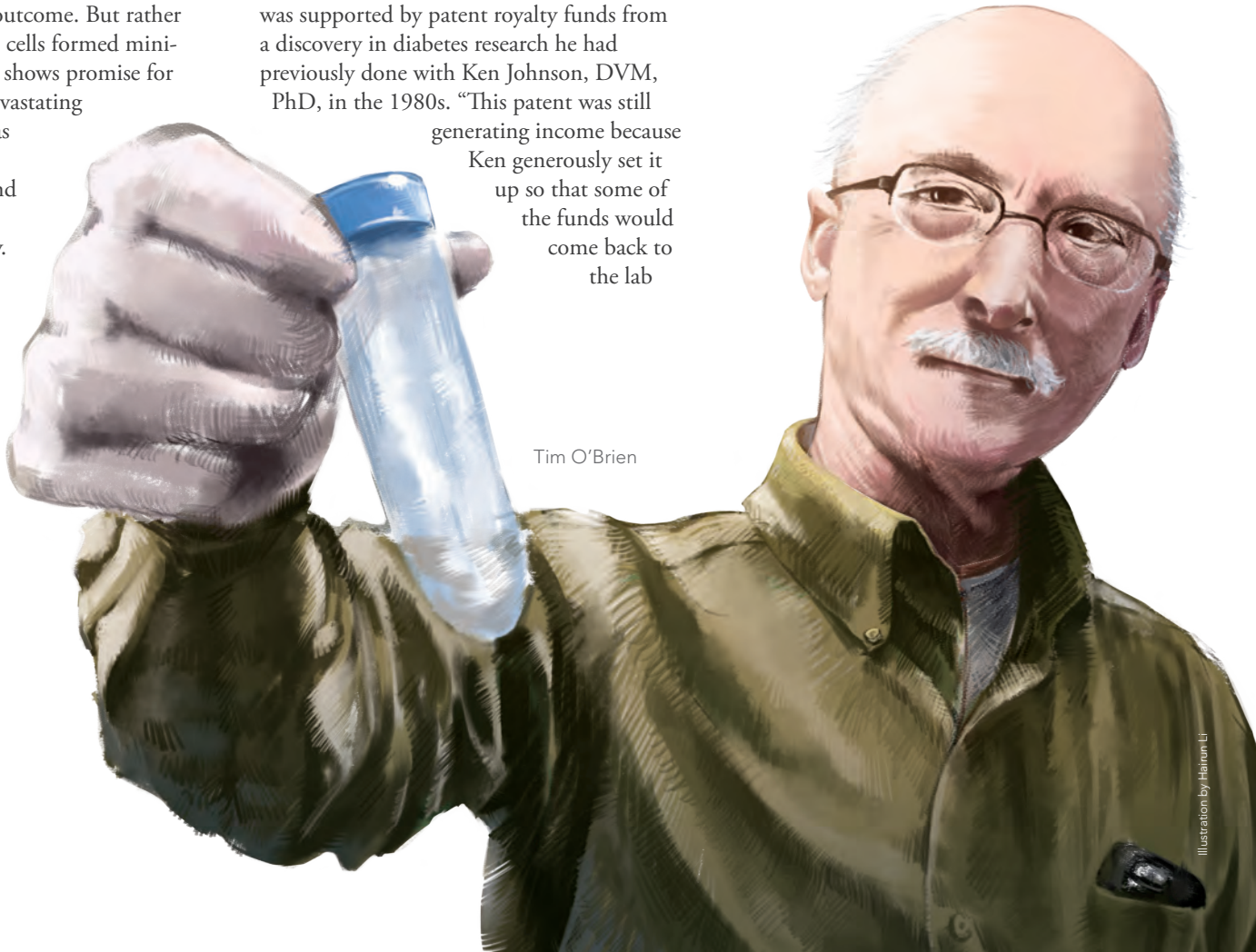
"One of the two components in the hydrogel had previously been used to propagate IPS cells," says O'Brien. The team of scientists anticipated the same outcome. But rather than proliferating, the cells formed mini-brains, a material that shows promise for potentially treating devastating human diseases such as Parkinson's disease, Alzheimer's disease, and childhood cerebral adrenoleukodystrophy.

So what does O'Brien's team's discovery mean for the world of neurological research? "Many or most other methods derive products from various animals, and that is very difficult to standardize," says O'Brien. By using a defined hydrogel, the researchers have achieved maximum consistency in method and replication. "Our approach is so simple that we can make between 10 and 20 times as much matter as anyone else can with the same amount of effort."

This new system for generating mini-brains could provide scientists with a more scientifically accurate and productive experimental model for their research. Eventually, scientists could use IPS cells from a patient's skin sample to design mini-brains with the individual's exact genetic makeup and inject the organoids into the patient's brain to regenerate damaged cells.

According to O'Brien, much of this work was supported by patent royalty funds from a discovery in diabetes research he had previously done with Ken Johnson, DVM, PhD, in the 1980s. "This patent was still generating income because Ken generously set it up so that some of the funds would come back to the lab for research pursuits," O'Brien says. "We are hopeful that this discovery can lead to breakthroughs in neurological diseases."

If you are interested in supporting Tim O'Brien's research, please contact Mindy Means, development officer, at the College of Veterinary Medicine at 612-626-5482 or mkmeans@umn.edu.



Tim O'Brien

Illustration by Hairun Li

G. Elizabeth Pluhar and one of her patients, Hedley the boxer

Photo by Amanda Stombaugh

COLLABORATION BLASTS GLIOBLASTOMA

A five-year canine cancer research project makes for healthier dogs, happier owners, and—ultimately—healthier humans

BY CAROLYN BERNHARDT

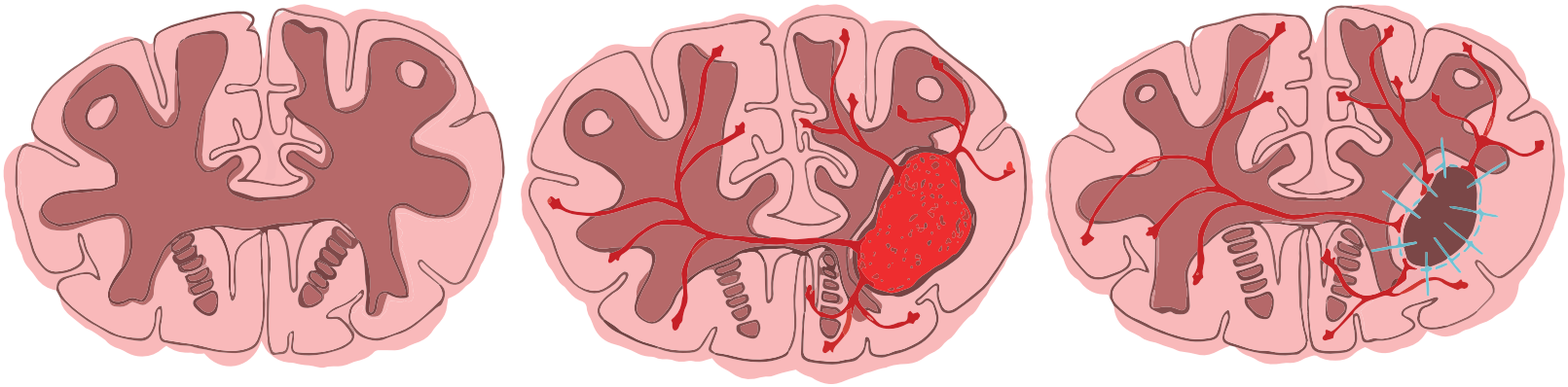
The veterinary and human medicine communities have long observed that dogs and humans share a particularly deadly form of brain cancer known as glioblastoma. Not only do they have the disease in common, but humans and dogs also exhibit a similar immune response to its tumors. As G. Elizabeth Pluhar, DVM, PhD, DACVS, and her team work to manipulate this immune response and effectively kill glioblastomas in dogs, their work simultaneously carries over to advancing human medicine.

In its first year, Pluhar's current project has already shown promise in improving the survival rates in dogs while also giving researchers a deeper understanding of glioblastoma as it applies to human trials. The $2.7 million grant—funded as part of the 21st Century Cures Act by the National Cancer Institute, part of the National Institutes of Health—is led by Pluhar, a professor of veterinary surgery in the Department of Veterinary Clinical Sciences at the University of Minnesota College of Veterinary Medicine (CVM).

"It's exciting that this may be something that is immediately translated into human patients," says Pluhar. "You know how we always talk about one year of human life equalling roughly seven years of canine life? Well, since our median survival time is now well over a year in the dogs we treat, that could translate into about five to seven years in people."

Glioblastomas are highly invasive tumors that carry a grim prognosis in humans, with a median survival of 14 to 16 months, despite intense treatment. Pet dogs diagnosed with these tumors have few options and are often euthanized shortly after diagnosis. Pluhar's project, aiming to lengthen the life expectancy in dogs with glioblastomas, has combined complementary therapies in five dogs since funding for the trial began in 2017.

Now, Pluhar and her team are following the dogs that have had brain tumors surgically removed by performing magnetic resonance imaging (MRI) on each patient every four months to assess for tumor recurrence or progression. So far, the dogs that have had the first follow-up MRI's have no evidence of tumor. With patients traveling to Minnesota from as far as Colorado and Canada to receive this innovative regimen, one thing is made clear: Pluhar's work has made the U of M a destination for fighting this kind of cancer.



1. Cross section of frontal lobes

A healthy, tumor-free dog brain, as seen in cross section of the frontal lobes.

2. Tumor growth and development

Glioblastomas typically develop in the gray matter *(represented here in light pink)* of the brain. As they grow and expand, the tumors compress normal brain matter and cause the midline to shift away from the tumor mass. Microscopic tendrils of tumor cells often spread along blood vessels and white matter tracts *(beige)* of the brain, and can extend as far as the opposite lobe. While the tumor *(bright red)* is visible on the patient's MRI, the tendrils *(dark red)* are microscopic and cannot be seen. As such, the tendrils also cannot be removed during surgery. Instead, they are treated by a series of injections, which differ depending on the treatment group within the trial to which the patient is assigned *(see figures 3-5)*.

3. Tumor removal and gene therapy injections

All patients undergo surgery to have the primary tumor mass removed. Afterward, Pluhar and her team use additional therapy to attack any residual tumor mass and the remaining microscopic tendrils. For dogs in treatment groups one and two in the current clinical trial, the surgeons will give 20 injections containing gene therapy *(blue)* into the brain tissue around where the tumor was removed. The genes stimulate an immune response that kills tumor cells. Patients in group one are finished with treatment after this phase. Meanwhile, patients in group two go on to receive injections of the CD200 peptide *(see figure 4)*.

The new study represents a continued partnership between the CVM, the Masonic Cancer Center, University of Minnesota, the U's Medical School, and the Medical School at the University of Michigan, to perform research on pet dogs with spontaneous tumors. With this collaboration has come additional support from the Randy Shaver Community and Cancer Research Fund, the American Brain Tumor Association, and the Humor to Fight the Tumor Foundation.

The group of researchers previously collaborated to use both vaccine-based and gene-based immunotherapy to treat dogs after surgical debulking of high-grade gliomas. These treatments had no adverse side effects and prolonged both progression-free and overall survival times more effectively than surgery alone.

Afterward, Christopher Moertel, MD, and Michael Olin, PhD, assistant professor in the Division of Pediatric Hematology and Oncology at the University of Minnesota, ran a small clinical trial in humans with recurrent glioblastoma, applying the same treatment.

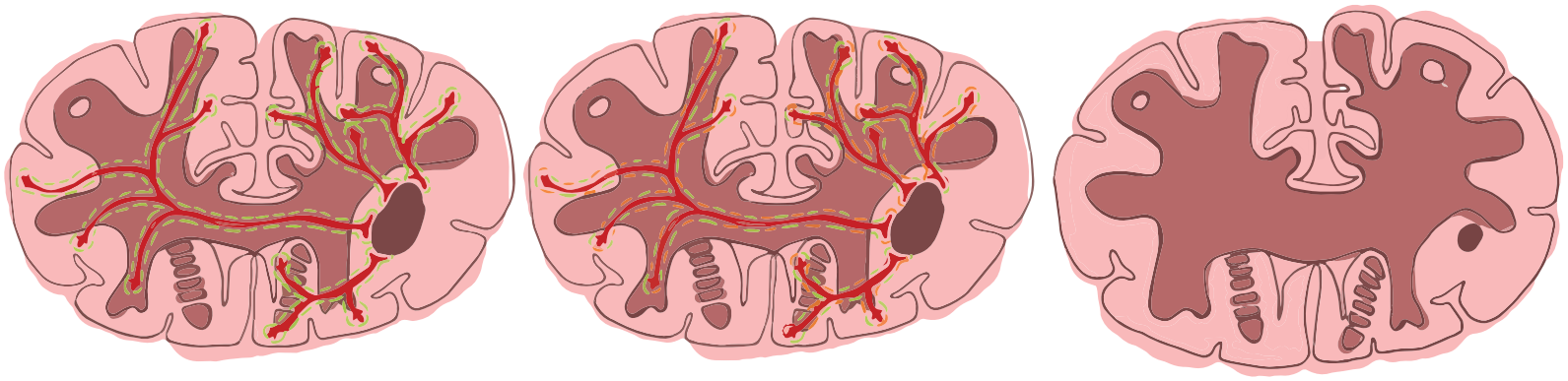
"I have met some of the human patients that were treated in the vaccine clinical trial," says Pluhar, "and they all said their quality of life was so good while undergoing immunotherapy treatment that they were able to do things they otherwise would not have been able to do had they continued on chemotherapy and radiation instead."

Although the previous approaches were successful at extending most of the canine patients' survival, the tumors always recurred. To improve the efficacy of both therapies, Olin dove back in—he discovered that the tumors were elucidating a protein, CD200, that blocks the body's natural immune response. So, Olin manufactured peptides of the native CD200 that override the tumor's efforts to protect itself from the body's immune response.

Olin found that mouse, canine, and human tumors all secrete this protein to thrive. As such, adding Olin's CD200 peptides to immunotherapies brightens the future of treatment for both canines and humans alike. Olin's contributions are not lost on Pluhar, who says the University's collaborative culture is the backbone of the projects' successes. "It's just the atmosphere at the U of M, it's expected that you are going to collaborate with people and it's made easy to do here."

Pluhar arrived at the University 15 years ago to work in orthopedics, which was her PhD's focus. But since she had previous experience in neurosurgery, she and the late John Ohlfest, PhD, soon joined forces to shift cancer research from studying mice with lab-made tumors to dogs with spontaneously occurring tumors.

"We became one of the pioneers in canine neuro-oncologic surgery because John had this original idea to use dogs with spontaneous



Illustrations by Megan Murrell

4. CD200 peptide

After having undergone surgery and receiving gene therapy, patients in group two of the clinical trial will receive a series of injections of the CD200 peptide *(green)*. This peptide is injected into the back of the patient's neck where it interacts with local immune cells, which circulate to lymph nodes and then, hopefully, the brain. Once there, the peptide-activated immune cells process bits of tumor cells killed by the gene therapy and hunt down and kill any live tumor cells remaining in the tendrils. These vaccines are repeated at regular intervals to boost the immune system. The third and final group of patients also receives these injections but do not receive gene therapy during surgery. They instead go on to also receive a second injection of tumor lysate *(see figure 5)*.

5. CD200 peptide and tumor lysate vaccine

About 24 hours after receiving their first injection of the CD200 peptide, patients in group three receive a second injection of a mixture of peptide *(green)* and a tumor cell lysate *(orange)*. The peptide activates local immune cells and allows them to process tumor-specific antigens in the lysate. The activated cells move to lymph nodes and prime with other immune cells that can now recognize the tumor cells as "foreign." These immune cells circulate around the body, including the brain. These vaccines are repeated at regular intervals to boost the immune system.

6. Post-surgery and treatment

In the weeks after the patients in the three treatment groups complete their surgery and treatment, any residual tumor cells in the tendrils have hopefully been killed by the circulating immune cells. The brain relaxes back into the space once occupied by the primary tumor mass.

tumors as a model to assess therapies for people," says Pluhar. "I thought at the time that we would just do an experiment in beagles and it would never go anywhere." Pluhar has been pleasantly surprised to find that this work has actually professionally ensnared her.

And though she says retirement nears, Pluhar shows no signs of stopping. Her tank of fuel is full, in part due to the personal impact a close friend's recent glioblastoma diagnosis has had on her. Watching her friend deal with the harsh aftermath of surgery, chemotherapy, and radiation propels her forward. "I know a lot of people with friends or family who are affected by these brain tumors," she says. "It really goads me to continue this research because I think that our treatment approach is a really great alternative."

The new research project hopes to demonstrate that combination immunotherapy, which will add the CD200 peptide with tumor lysate vaccines or local gene therapy, is safe and effective in pet dogs with spontaneous high-grade gliomas.

With so much promise on the horizon, Pluhar is quick to cite this project—and the ones that lead to it—as the highlight of her illustrious career: "Being involved in this has been very fulfilling—to know that what we have done has impacted both people and animals has just been amazing." ⬢

GET INVOLVED

Pluhar and collaborator, Matthew Hunt, MD, associate professor and resident program director in the Department of Neurosurgery, are recruiting pet dogs with spontaneous high-grade gliomas as suggested by MRI scans. They have funding to support treatment of at least 30 pet dogs and will be performing all surgeries at the University of Minnesota, where all care provided in relationship to tackling glioblastoma is free of cost to owners.

If you're interested in enrolling your dog, please contact Pluhar at pluha006@umn.edu. If you would like to support Pluhar and Hunt's work, please contact Bill Venne, chief development officer at the CVM, at venne025@umn.edu.

Photos courtesy of the One Health Workforce Project

In 2017, One Health students joined Uganda's Ministry of Health's investigation into the Highly Pathogenic Avian Influenza H5N8 outbreak along the shores of Lake Victoria. The One Health Central and Eastern Africa (OHCEA) university network's Uganda Office has trained the students in infectious disease management and other soft skills needed on a response team.

FIT TO FIGHT INFECTIOUS DISEASE

Training tomorrow's global health workforce

BY FRANK JOSSI

When local fishermen reported a massive die-off of more than 10,000 migratory birds in several districts along the shores of Uganda's Lake Victoria region in 2017, alarmed officials quickly determined the outbreak's cause to be pathogenic avian influenza H5N8 and went to work informing communities on risk factors they faced.

Uganda's Public Health Emergency Operations Centre jump-started a campaign to combat the potential spread of the virus in Kalangala, Masaka, and Wakiso. Part of the response included students from a Ugandan university trained in an approach called "One Health," which brings together experts from different disciplines to respond to pandemic threats. Many of the students who responded were taught by professors who received training from Innocent Rwego, PhD, an assistant professor in the University of Minnesota College of Veterinary Medicine (CVM).

The training was available under the One Health Workforce (OHW) Project, which is funded by the United States Agency for International Development (USAID) and led by the University of Minnesota in collaboration with Tufts University. As they prepare to enter the workplace at the front lines of where these diseases emerge, students in the program build skills in coordinating and collaborating to effectively combat infectious disease threats.

The program's primary mission is to help the multi-sector workforce of health professionals prevent, detect, and respond to infectious disease threats through a collaborative approach that synthesizes animal, human, and environmental health. The project promotes skills among students and professionals working in veterinary medicine, human medicine, nursing, environmental sciences, and public health. To support a multidisciplinary approach, the CVM convened experts from six U of M colleges to develop training and curricula for managing antimicrobial-resistant and animal-to-human infectious diseases.

Worldwide impact

"The One Health Workforce Project has had a major impact in the countries where we have worked," says Rwego. The program puts students into multidisciplinary teams at One Health Demonstration sites. Curricula from different disciplines are designed to improve teaching methodologies, incorporate current disease management concepts, and send students into the field with better skills.

According to associate professor Katey Pelican, DVM, PhD, who oversees the OHW project, the workforce is a global effort to think about health in a systems-based approach while being more holistic in tackling challenges to the health of human and animal populations.

USAID named the University the primary grantee for OHW in 2014 and, based on project performance, recently raised their funding ceiling another $13.7 million, bringing the total to $63.7 million. The U of M and Tufts University collaborative works with One Health University Networks involving 79 universities in eight central, western, and eastern African countries and five countries in Southeast Asia.

Each year, students in Thailand attend a field training course to prepare them for outbreak response needs. Faculty with the Thailand One Health University Network (THOHUN) enhance the students' learning experience and soft skills through multidisciplinary teamwork and field work using the One Health approach.

Using new tools

The growing resistance of pathogens to antibiotic treatment creates vulnerability to once treatable diseases. The process can be slowed by careful and conservative use of antibiotics in human and animal health. This requires building capacity to ensure that best practices in antibiotic use are executed by all health workers globally. In Africa, for example, OHW member universities held training workshops on antimicrobial resistance in 2017 in Cameroon, Kenya, Tanzania, Senegal, and the Democratic Republic of Congo, as well as in Thailand.

Among the initiatives Pelican and her colleagues led was creating a tool for government agencies to review how well they work together on planning and preparedness for infectious disease threats, natural disasters, and antimicrobial-resistant disease. Nineteen countries have used the tool.

Most recently, the One Health Systems Mapping and Analysis Resource Toolkit (OH-SMART) was used to synthesize and define national infectious disease workforce needs in seven countries in Africa and Asia and create national plans for workforce development. These plans are among the first truly pan-national plans involving multiple sectors for strengthening the workforce at the front lines of managing global threats of public health importance.

What develops out of the OHW is led from the field, with partner universities in disease hotspot regions defining their needs with guidance from Minnesota and Tufts experts. Now, these countries' plans can align with known workforce needs in all key sectors.

Building a nexus

Although much of the emphasis is on university students and training government workers, the program pays significant attention to faculty development and what is called "institutional strengthening." The network of schools within colleges and within countries continues to grow, creating a robust international network to prevent, detect, and respond to disease.

When Rwego first brought together faculty members, he discovered the deans of different schools had never sat in the same meeting together. Now, they and their faculties are familiar with one another and have collaborated to prepare students and government officials for potential disease outbreaks.

Working with faculty from 17 Vietnamese universities spanning human, animal, and environmental health programs, CVM instructor Kaylee Myhre Errecaborde, DVM, heard from many participants that they wouldn't know each other, let alone be building shared curriculum and field experiences spanning student and professional training, without the help of the program. Nursing, medical, veterinary, and public health students testify that the OHW university network in Vietnam has provided a host of common skills to prevent and treat infectious diseases.

Universities and their faculty play a preeminent role in the societies of developing countries, Pelican says. "I have a saying that in working with universities, the bad thing is they're hard to change and the good thing is they're hard to change." While universities can be bureaucratic, rule-based, and resistant to new ideas, they are among the most stable of institutions in many countries.

"They have maintained their place much more than their governments, industries, or other institutions in their countries," Pelican says. "They have a power in that, and if you can change them, there is a true sustainability in that change that you don't see in other sectors."

As for faculty, they have an important power when working with government officials because they have educated many of them. Using these connections and a rapt audience, faculty can often convince government officials to introduce new systems, skills, and approaches to combat disease that can fundamentally change societies for decades.

A RAPTOR'S REACH

Defining and promoting wild animal welfare

BY CAROLYN BERNHARDT

Half a million wild animals are seen by passionate, engaged rehabilitators each year in the United States. While rehabilitation centers might be staffed with plenty of volunteers, their expertise and resources vary. The result? Dissimilar perceptions of what animal welfare really means and different approaches in striving to achieve it.

The world-renowned Raptor Center (TRC) has secured funding for a major three-year initiative, providing the opportunity to raise the bar for wildlife rehabilitation care across all species. The program is being designed and implemented by The Raptor Center with hopes of improving animal welfare in wildlife rehabilitation. TRC plans to use its 40 years of experience to strategically build community among rehabilitation centers. It will begin with pilot efforts in seven states.

Natural pathfinders

"When I first started my career, wildlife veterinarians talked a lot about umbrella species," recalls Julia Ponder, DVM, MPH, associate professor in the College of Veterinary Medicine and executive director of The Raptor Center. "If we saved the top of the food chain, then everything under it would be saved. Later, we figured out that was a model that didn't work—we could save the umbrella and there could still be animals underneath it that could become endangered or extinct."

Scientists now understand that, especially in ecotoxicology, those top-of-the-food-chain predators—such as raptors—reflect what is happening beneath them. And a raptor's ability to captivate the public eye helps spread awareness and passion for preservation.

"Raptors are such high-profile animals," says Ponder. "So much of wildlife rehabilitation is about outreach. Having a great poster child that is very easy to use as the example is key." So not only do raptors play a key scientific role in making clear the state of the environment around us, they also can easily capture public attention.

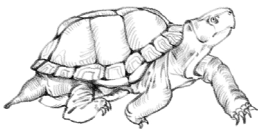
Since raptors make great educators of ecological and environmental issues, perhaps the same can be said for The Raptor Center itself, considering the fact that TRC has helped make Minnesota a long-standing headquarters for quality raptor rehabilitation, medical and surgical care, and education. In so doing, faculty and staff at The Raptor Center couldn't help but notice a need for grassroots support to help self-taught and self-funded rehabilitation centers improve animal welfare conditions. TRC and its ambassadors can only do so much for improving animal health and safety on their own because when wildlife rehabilitation peers face financial and resource-related obstacles, outreach is limited.

But the project is designed for all species. "Raptors are just a piece of it," says Ponder. "We are applying our framework and helping to start the conversation and put in a structure that will benefit wildlife."

Identifying dissonance

Some centers will err on the side of placing a bird in education rather than euthanizing, even when the animal experiences chronic pain or cannot adjust to human interaction. This lifetime of discomfort is only debatably better than euthanization. In the view of TRC, all species would benefit from wildlife rehabilitation centers agreeing on a set of priorities for animal care.

Another disconnect exists between veterinarians and wildlife rehabilitation centers. While most wildlife rehabilitation centers are required by law to have a veterinarian of record, the relationship between them exists on a sliding scale—some centers have an engaged relationship with their veterinarian, some a non-existent one. An absent veterinarian of record can lead to wildlife rehabilitators making ill-informed decisions in an effort to problem solve, which can result in unhealthy outcomes for patients.



Illustrations by Hairun Li

Ponder says the variance in veterinarian engagement results from veterinarians not fully understanding what their obligations are going to be, or vets lacking the expertise to competently and confidently guide a center's care practices.

"Today's students want to work with wildlife rehabbers; they want to include this as part of their professional life when they graduate," says Ponder. But creating a clinical wildlife veterinarian workforce has proven to be a third obstacle for quality wildlife animal welfare. "When students graduate, reality sets in—they may work for someone who does not allow them to do pro bono work, they may not have time to do pro bono work, or they may not have the expertise required. Whatever the reason, the passion from vet school disappears and we want to figure that out."

Closing the chasm

"The project presents a three-pronged approach," says Ponder. "We will work directly with wildlife rehabbers; we're working to build more community within clinical wildlife veterinarian medicine and wildlife rehab; and we will help train new clinical wildlife veterinarians."

The mentoring part of the project will give The Raptor Center a chance to measure the needs of its fellow wildlife rehabbers. As TRC works with each center to analyze its capacity to provide care, it will strategize opportunities for improvements and upgrades. This, in turn, will make TRC a resource to wildlife rehabbers across the country while also standardizing approach among centers.

The project also aims to make communication between veterinarians and rehabilitators more of a habit among the clinical wildlife rehabilitation community. Each of the three years the grant is in effect, three wildlife rehabilitators and three general practice veterinarians will be named to the fellowship program. "We are creating a community where they can interact routinely and develop partnerships," says Ponder.

These 18 fellowship recipients will start off their position by being trained in by TRC's staff and colleagues. Throughout their fellowship, they will remain in touch with TRC about hurdles they are facing in their centers and be encouraged to work closely with their rehabilitator or veterinarian counterparts to find solutions. At the end, veterinarians and rehabilitators will pair up to build a proposal intended to improve or inform animal welfare.

The third arm of the project will infuse clinical wildlife rehabilitation centers with more qualified staff in order to build each center's capacity to care for animals.

The Raptor Center has created a new veterinary internship program, which will provide already-passionate veterinary students with the opportunity to receive nuanced training that they would otherwise lack. The hope is that these interns will grow into mentors for future veterinarians with an interest in clinical wildlife veterinary medicine.

In bringing passionate people together, working toward a common set of objectives, it is TRC's hope that awareness and understanding will spread. This model has acted as the backbone for The Raptor Center for decades, as the center has used public education and veterinarian training to further improve the lives of raptors and the environment.

"This project is mission-driven because our mission is not just about us; it's about leveraging our knowledge to help wildlife," says Ponder. "Built into this program are various ways of trying to change the world of wildlife rehabilitation—by improving it, and by using new tools to educate people."

TRC's new funding will improve wildlife rehabilitation in those seven pilot states, helping animal welfare soar a little higher.

Award-winning faculty

LARISSA MINICUCCI WINS COLLEGE OF VETERINARY MEDICINE'S COMMUNITY-ENGAGED SCHOLAR AWARD

In March, Larissa Minicucci, DVM, MPH, DACVPM, associate professor in the Department of Veterinary Population Medicine at the University of Minnesota College of Veterinary Medicine (CVM), was awarded the CVM's Community-Engaged Scholar award, which recognizes one faculty member or P&A individual annually for exemplary and engaged scholarship in their field. She was also one of seven individuals nominated for the President's Community-Engaged Scholar Award.

Minicucci, who directs the DVM/MPH program in collaboration with the School of Public Health, has consistently shown the value of intentional, symbiotic relationship investment. She has facilitated partnerships with four Native American communities in Minnesota—Leech Lake Band of Ojibwe, White Earth Nation, Mille Lacs Band of Ojibwe, and Lower Sioux Indian Community—to deliver access to veterinary care and youth education while providing her students with the opportunity to practice their owner-interaction and animal care skills. Her longstanding history of building relationships with American Indian communities began in 2009 when Minicucci traveled to Leech Lake—with one colleague and nine students in tow—to increase rabies vaccination rates. Two days and 45 animals later, a partnership was born.

The students involved went on to found the Student Initiative for Reservation Veterinary Services (SIRVS), a campus life organization that partners with Native American communities in Minnesota to deliver veterinary care and education while offering students the chance to engage in hands-on learning. Through at least six community clinics, SIRVS now provides services to approximately 650 to 800 animals annually.

"I couldn't do it without participation from the communities and organizations we work with," says Minicucci. "Every person who engages with our students or comes into one of our clinics with an animal is teaching our students."

CARDONA NAMED 2018 RANELIUS AWARD RECIPIENT

On March 14, the Minnesota Turkey Growers Association (MTGA) honored Carol Cardona, DVM, PhD, DACPV, professor and Pomeroy Chair in Avian Health in the Department of Veterinary and Biomedical Sciences, as the 2018 recipient of its prestigious Ranelius Award. The announcement was made at the MTGA Annual Meeting in Minneapolis.

"The Ranelius Award is the highest honor given by the MTGA," said MTGA President Chris Huisinga, a turkey farmer from Renville, Minn. The award is given to a recipient who has exemplified leadership and dedication to the industry, and has made contributions to enhancing Minnesota's turkey industry. "Cardona is well deserved of this special honor."

PORTER RECEIVES THE AWARD FOR OUTSTANDING CONTRIBUTIONS TO GRADUATE AND PROFESSIONAL EDUCATION

Rob Porter, DVM, PhD, DACVP-AP, received the Award for Outstanding Contributions to Post Baccalaureate, Graduate, and Professional Education, along with a small group of faculty from throughout the University of Minnesota. Porter is a professor in the Department of Veterinary Population Medicine. The ceremony was held in April, during which Porter was inducted into the U of M Academy of Distinguished Teachers. Porter was also the recipient of the Minnesota Turkey Growers Association President's Award in 2009.

New faculty welcomed

Matthew Aliota, PhD
Assistant professor, Veterinary and Biomedical Sciences
Start date: May 31, 2018

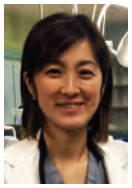
Stephanie Goldschmidt, BVM&S
Assistant professor, Veterinary Clinical Sciences
Start date: August 14, 2017

Noelle Noyes, DVM, PhD
Assistant professor, Veterinary Population Medicine
Start date: May 21, 2018

Pierre Amsellem, DVM, DACVS
Associate professor, Veterinary Clinical Sciences
Start date: March 19, 2018

Andres Gomez, MSc, PhD
Assistant professor, Animal Science
Start date: August 14, 2017

Amy O'Brien, DVM
Primary care, Veterinary Medical Center
Start date: May 15, 2017



Shiori Arai, DVM, PhD, DACVS
Assistant professor, Veterinary Clinical Sciences
Start date: March 19, 2018

Joseph Hediger, DVM
Instructor, Veterinary Clinical Sciences
Start date: July 31, 2017

Declan Schroeder, PhD
Assistant professor, Veterinary Population Medicine
Start date: February 1, 2018

Emily Barrell, DVM, MSc, DACVIM
Assistant professor, Veterinary Population Medicine
Start date: January 15, 2018

Whitney Knauer, VMD PhD
Assistant professor, Veterinary Population Medicine
Start date: September 11, 2017

Susan Spence, DVM
Clinical Lab Coordinator, Veterinary Clinical Sciences
Start date: April 16, 2018

Luciano Caixeta, DVM, PhD
Assistant professor, Veterinary Population Medicine
Start date: July 31, 2017

Fang Li, PhD
Associate professor, Veterinary and Biomedical Sciences
Start date: July 1, 2017

Kim VanderWaal, PhD
Assistant professor and extension educator, Veterinary Population Medicine
Start date: September 18, 2017

Cesar Agustin Corzo, DVM, MS, PhD
Assistant professor, Veterinary Population Medicine
Start date: October 2, 2017

Charles Lothamer, DVM, DAVDC
Assistant professor, Veterinary Clinical Sciences
Start date: March 26, 2018

Saad Gharaibeh, BVM, PhD, DACPV
Assistant professor, Veterinary Population Medicine
Start date: July 31, 2017

Lauren Markovic, DVM, DACVIM
Assistant professor, Veterinary Clinical Sciences
Start date: August 27, 2018

New MnDRIVE Global Food Ventures fellows announced

Eight graduate students across the College of Food, Agricultural and Natural Resource Sciences (CFANS); the College of Veterinary Medicine (CVM); and the School of Public Health (SPH) were recently awarded fellowships from Minnesota's Discovery, Research, and InnoVation Economy (MnDRIVE) for the 2018–2019 school year. Two of these students, Shivdeep Hayer, B.V.Sc. & A.H., M.S., and Frances Shepherd, conduct research within the CVM that seeks solutions to the increasingly evident challenge posed by food insecurity and population growth.

Hayer will spend his fellowship working to understand changes in antimicrobial resistance in swine bacterial pathogens. "I am excited to learn more about food production systems and policy making in the United States," he says. "I hope that this fellowship will broaden my knowledge in these aspects of food safety." Hayer received his master's in Veterinary Medicine at Guru Angad Dev Veterinary and Animal Sciences University in India.

Shepherd will search for ways to improve rotavirus vaccination to prevent piglet mortality while on the MnDRIVE fellowship. She says she is most excited about interacting with fields outside her own—such as public health, policy, and food production systems—through the professional development opportunities in MnDRIVE. "I've always been interested in the issues surrounding food security, but this is the first opportunity I've had to really commit myself to formally learning about it," she says. "I predict that this fellowship will push me to fit my research into a larger, more impactful context by always thinking about how individual research projects like mine can inform larger policy changes for the greater good of animals, humans, and the environment."

Shivdeep Hayer

Frances Shepherd

The eight student fellows will participate in several professional development activities and events that will improve their understanding of our interconnected food systems and help them to better envision how their expertise can ensure food security, improve food safety, and protect the environment through alternative agricultural practices. During the course of their awards, they will participate in activities designed to help build their skills in communications, collaboration, and problem solving.

BI Veterinary Scholars Program turns sweet sixteen

Since 2002, the University of Minnesota College of Veterinary Medicine (CVM) has held the BI Veterinary Scholars Program for students to conduct career-affirming research. After 10 weeks of research, participants present a poster at the CVM's Research Day each October.

The "summer scholars" who have participated in the program have produced several projects that have resulted in a journal publication. The process allows participating students to better understand the role research plays in advancing veterinary medicine.

"Even if they don't end up choosing a 'nontraditional' vet career, such as research, many feel that they better understand the role research plays in developing new treatment protocols or therapeutics," says Mark Rutherford, PhD, associate dean for graduate studies at the CVM. "They appreciate the science behind the medicine."

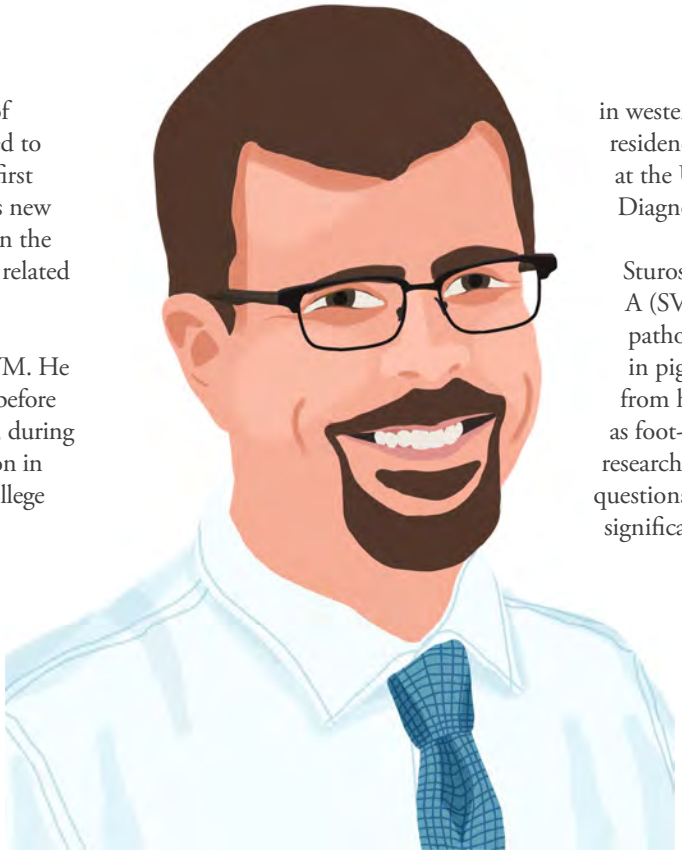
In the past 16 years, fruitful discoveries made by summer scholars have sparked many careers, including cancer researchers, drug development scientists at biotech companies, and even a wildlife veterinarian for the National Park Service.

Inaugural Dr. James B. Moe award announced

The University of Minnesota College of Veterinary Medicine (CVM) is pleased to announce Matthew Sturos, DVM, as the first recipient of the James B. Moe Award. This new award recognizes a full-time PhD trainee in the field of comparative medicine, specifically related to infectious diseases or pathology.

James B. Moe is a 1964 graduate of the CVM. He worked in private practice for several years before enlisting in the US Army Veterinary Corps, during which time he also earned board certification in anatomic pathology from the American College of Veterinary Pathologists (ACVP), an organization in which he has made lifelong contributions and held several leadership positions. Moe currently runs a pharmacology consulting company, JMB Consulting, Inc. in Myrtle Beach, S.C.

Originally from Michigan's Upper Peninsula, Sturos received his DVM from the CVM in 2012. He practiced mixed-animal medicine in western Wisconsin before completing a residency in Veterinary Anatomic Pathology at the University of Minnesota Veterinary Diagnostic Laboratory.



Matthew Sturos

Sturos' thesis work focuses on Senecavirus A (SVA), an emerging global swine pathogen that causes vesicular disease in pigs that is nearly indistinguishable from high-impact vesicular diseases, such as foot-and-mouth disease. Through his research, Sturos aims to answer fundamental questions about SVA for which there are significant knowledge gaps.

To support graduate education in the CVM, please contact Mindy Means, development officer, at 612-626-5482 or mkmeans@umn.edu.

Illustration by Megan Murrell

2002 — 2018

16 YEARS, **10** WEEKS OF STUDY

271 STUDENT PARTICIPANTS

248 unique student participants

23 two-time student participants

3 international student participants

Photo courtesy of Zhen Yang

Zhen Yang

A winning streak

The American Association of Swine Veterinarians (AASV) Foundation recently awarded Zhen Yang, class of 2019, a $2,500 scholarship sponsored by Elanco Animal Health. His oral presentation on porcine circovirus type 3 took second place at the 2018 AASV annual meeting in San Diego, garnering the sizable scholarship. It was his second time to win this award.

"In my opinion, swine medicine is science-based and data-driven medicine," says Yang. "I hope to contribute to its future by applying the latest science and technologies to diagnosing and controlling swine infectious disease in order to reduce animal loss and to improve swine welfare."

When Yang first won second place at the 2017 AASV annual meeting, he was the first non-native English speaker in the competition. Yang is a student in the U.S.–China Joint DVM Scholarship Program, which is initiated by the U.S.–China Center for Animal Health, China Agricultural University, and the Chinese Veterinary Medical Association. The program is financially sponsored by Kansas State University, the China Scholarship Council, Zoetis, and Banfield Pet Hospital. After graduation next year, Yang hopes to return to China to work with farmers to produce safe and affordable meat.

"Meanwhile, I hope to be one of the facilitators of collaboration in veterinary medicine and food animal production between the U.S. and China."

Seeking cancer solutions in the immune system

Kristin Snyder, a veterinary student at the University of Minnesota College of Veterinary Medicine, has received a Howard Hughes Medical Research Fellows award for $43,000 funded by the Burroughs Wellcome Fund. She will use the award to study cancer immunotherapy in the lab of Bruce Walcheck, PhD, for the 2018–2019 school year.

The Walcheck lab is dedicated to improving cancer cell recognition by the immune system. The scientists will work to derive natural killer (NK) cells—components of the immune system that can kill cancer cells—from stem cells. The researchers then hope to arm the NK cells with a new receptor (a protein on the surface of an NK cell that binds the NK cell to the cancer cell) to improve their attachment to tumor cells. The long-term goal of the research is to administer enhanced NK cells to patients that can attack cancer cells better than the immune system alone.

"We are likely never going to figure out the cause of every type of cancer," says Snyder, "but if we can figure out how to better direct the immune system to attack cancer, we can better utilize it to treat many cancers. That is what this project is all about."

Snyder will work on this same research during the Boehringer Ingelheim-National Institutes of Health Veterinary Scholars Program this summer, and she will officially begin receiving her award for the project after the summer program ends in mid-August.

Photo by Nathan Pasch

Kristin Snyder and her cat, Peanut

"I think veterinary medicine and human medicine need to start speaking to each other and listening to each other because we can solve so much that way," she says. "And Walcheck is not a medical doctor or a veterinarian, he is somewhere in between, and that is why I think it is so cool to work with him—he sees the big picture."

Filling the gap

This past spring semester, second year veterinary students were introduced to veterinary dental basics. But for most students, practice makes perfect, and for Michael Congiusta, there was a step missing between class and lab.

Congiusta, whose parents are both dentists, has a passion for veterinary education, innovation, and small animal oral health. He says the Dental Vet typodont concept models he invented, which are made of plastic, were intended for universities and veterinary technician schools to give out to students to practice basic dental skills.

Before any of their labs this semester, many second year students were able to practice on Congiusta's plastic models. He applies a synthetic calculus mixture to the plastic models so students can practice picking it off with proper hand technique and familiarize themselves with what to expect in lab. "My vision was to provide each student with their own model so they can take it home and practice," he says. "I got a lot of great feedback from the students who tried it."

Michael Congiusta, class of 2020

Recently, Congiusta's plastic models took home the grand prize at "The Idea"—an innovation competition exclusively for veterinary students. Twenty-seven students from around the country entered the contest, which was held at the Student Chapter of the American Veterinary Medical Association's Annual Symposium in Philadelphia in March. With this grand prize came a $10,000 award, which Congiusta has invested in developing his models further. Previously, he was building them in his bedroom. Now, Congiusta is waiting for mock-ups of his models from various medical device companies who are vying to be his supplier.

Congiusta's aim for improving veterinary dental care extends beyond veterinary school. He has also invented a 3-D version of the model that exhibits pathology on one side and dental health on the other. "It was intended to enhance the veterinarian-client compliance relationship," Congiusta says. "So, the veterinarian could educate the client on which pathology is on which individual tooth and compare it to the other [healthy] side."

Congiusta has more ideas for his company, Veterinary Active Learning, LLC, to produce. "Any proceeds I would make from these canine models, I would reinvest into creating a cat model and then a horse model," he says. In addition, he is looking to create educational programs and tools for students, including a software program.

"I just think it is important for students to learn basic dental clinical skills," says Congiusta, "and constantly refresh their education and learning continuously throughout their career."

Congiusta's dental models

Photos courtesy of Michael Congiusta

Photo by Martin Moen

Dean Trevor Ames awarded 121 degrees at the ceremony.

Students awarded degrees at annual commencement ceremony

The College's commencement ceremonies in early May celebrated the achievements of over 100 students. DVM degrees were granted to 100 students—12 of whom also earned their master's in public health. Two students completed master's degrees and seven were honored for completing their PhDs. Chris Deegan spoke for his DVM classmates, and Beth Thompson, '07 DVM, JD, served as commencement speaker.

A leading college, a leading student

Sarah Neuser, class of 2019, began her work as president-elect of the Student American Veterinary Medical Association (SAVMA) in March 2017.

Neuser says that SAVMA, which aims to support, empower, and inspire all veterinary students in improving their lives, educations, and careers, gives her the chance to step back from the day-to-day pressures of school and focus on common issues that all veterinary students face.

The third year veterinary student is always sure to note the College's key role in propelling her into leadership roles in SAVMA: "I am thankful to the college's leaders who encouraged me to run for president and have been there for me when I needed support."

The University of Minnesota College of Veterinary Medicine's decision to value SAVMA comes as no surprise when considering the College's multi-faceted approach to veterinary medicine. "The commitment to helping us be good vets outside of medicine—in areas such as mental health, communication with clients and staff, and collaborating with each other—is my favorite part about studying at the U," Neuser says.

Photo by Amanda Stombaugh

Sarah Neuser

Noteworthy moments

Our alumni are reaching important milestones, both in and out of veterinary medicine.

1960s

Ralph Ganz, '63 DVM, celebrated his 90th birthday last August.

Last September, **Jim Warling**, '66 DVM, was honored by the St. James Rotary for his many years of dedication and service. Warling worked as a veterinarian in the St. James, Minn., community for 45 years.

1970s

Last May, St. George's University appointed **Neil Olson**, '75 DVM, PhD, as the new dean of the School of Veterinary Medicine.

Richard Reierson, '71 DVM, was recently awarded Veterinarian of the Year from the Minnesota Veterinary Medical Association (MVMA). Reierson is the founder of Elm Creek Animal Hospital in Champlin, Minn., is a longtime member of the MVMA Continuing Education Committee, and serves on the Minnesota Veterinary Medical Foundation's Clay Shoot Committee. He is a past member of the American Animal Hospital Association board of directors.

1980s

Ian Drummond, '85 DVM, recently sold the Corcoran Pet Care Center in Hamel, Minn.

Keith Soring, '86 DVM, has semi-retired after his work for the state of Iowa as a veterinary racing consultant and equine veterinarian.

Mark Warner, '86 DVM, sold his practice in Rochester, Minn.

Mark Fitzsimmons, '87 DVM, took second place at WeFest's Karaoke Roundup 2017, earning a spot to perform on the WeFest big stage opening for the Zac Brown Band in August 2017.

1990s

Juan Samper, DVM, '86 MS, '90 PhD, joined the University of Florida as new associate dean for students and instruction, effective October 20, 2017.

Robert Jordan, '95 DVM, and his wife, Jenny Chartier, DVM, currently own a small animal clinic on the big island of Hawaii and are looking to open their second clinic soon.

Kate An Hunter, '90 DVM, sold Carver Lake Veterinary Center, where two more CVM alumnae—Christine Maddox, '13 DVM, and Kelly Griffin, '07 DVM—currently practice.

2000s

Sandra Soucheray, '02 DVM, was recently certified in hospice and palliative care through the International Association of Animal Hospice and Palliative Care. She also started her own mobile veterinary practice called Soucheray's At Home Veterinary Care.

Christine Sivula, '05 DVM, and Jody Scholz, DVM, are co-directing a new laboratory animal medicine residency program that they started in 2017. This American College of Laboratory Animal Medicine-recognized program is a collaboration between Mayo Clinic and the U of MN. Its first residents are coming up to the end of their first year in the three-year program.

Lisa McCargar, '04 DVM, got married in Mexico in April.

2010s

Joe Hammes, '18 DVM, got a job at Sunny Dene Ranch in Mabton, Wash.

If you have personal or professional news to share, please contact Kris Hayden, alumni relations associate and events coordinator, at krhayden@umn.edu or 612-624-7624.

Let's get together

The College looks forward to celebrating with those of you having reunions this year. Though a few are still in planning stages, the following reunions have been scheduled.

Class of 1963

From September 15 to September 17, the class of 1963 will celebrate their 55th reunion at the Country Inn & Suites in Roseville, Minn.

Class of 1968

The class of 1968 will gather at Sprau Farm in Elkton, Minn., on September 8 to celebrate their 50th reunion.

Class of 1983

September 7 to 9, the class of 1983 will celebrate their 35th reunion at Sugar Lake Lodge in Grand Rapids, Minn.

Class of 1986

October 12 to 14, the class of 1986 will celebrate their 32nd reunion at the Courtyard by Marriott in LaCrosse, Wis.

Class of 2008

On September 1, the class of 2008 will celebrate their 10 year reunion at Al & Alma's Supper Club and Charter Cruises in Minnetonka, Minn.

Do you have questions about your reunion? Are you interested in getting involved? Contact Kris Hayden, alumni relations associate and events coordinator, at krhayden@umn.edu or 612-624-7624.

Where are they now?

Our recent DVM, MS, and PhD alumni are all going places. The College extends a hearty congratulations to those listed below who recently made exciting career moves.

Andréia Gonçalves Arruda, DVM, '12 MS, PhD, is now an assistant professor in the Department of Veterinary Preventive Medicine at The Ohio State University.

Maria Clavijo, DVM, '14 PhD, is now a research assistant professor at Iowa State University's Veterinary Diagnostic Laboratory in the Department of Veterinary Diagnostic and Production Animal Medicine.

Nubia Resende-De-Macedo, '15 PhD, is now a postdoc research associate in Iowa State University's Veterinary Diagnostic Laboratory in the Department of Veterinary Diagnostic and Production Animal Medicine.

Tamer Sharaf El Din, '15 PhD, recently became a clinical assistant professor at Penn State's College of Agricultural Sciences in the Department of Veterinary and Biomedical Sciences.

Katie Vance, '16 DVM, is a new full-time associate with Kenwood Pet Clinic. She has a passion for internal medicine, as well as a special interest in soft tissue surgery.

Jyotika Varshney, '16 PhD, became founder and CEO of VeriSIM Life, a biotech company developing AI animal models as an efficient and ethical alternative method for drug development testing, in October 2017.

Zach Loppnow, '17 DVM, recently accepted a job offer as an associate veterinarian with Anoka Equine Veterinary Services in Elk River, Minn.

Mentorship event series fosters new relationships

Beginning in November 2017, students and alumni mentors began gathering regularly for evenings spent outside the world of veterinary medicine to connect with one another.

Alumni and current students attended a Gopher women's hockey game on December 8, 2017. *(Front row, left to right)* Tori Winters, class of 2020, Patrice Sorenson, class of 2021, Anna Ruelle, '11 DVM, and Lauren Azarvand, class of 2020 *(Back row, left to right)* Katherine Pjevach, class of 2020, Camille Kubeczko-Schmidt, '17 DVM, Anastasia Johns, '17 DVM, and Joy Stoeckmann, class of 2020

On November 30, 2017, mentors and mentees crafted wooden signs together.

Celebrating students and generosity

On April 19, students and donors gathered to celebrate the 56 scholarships awarded to 80 University of Minnesota College of Veterinary Medicine students. Students had the opportunity to meet the donors of their scholarships and thank them for their continued support.

Susan Miller, '08 DVM, poses for a photo with her sons Davis Lyons (left) and Tyler Lyons (right) after being recognized for her outstanding commitment to the College. Miller is the executive director of Mission Animal Hospital, a nonprofit organization that provides full-service veterinary care, and reduces barriers to that care, for those in need. She gives back to the CVM by donating her time as a member of our interview team, volunteering at our service learning clinics, and providing generous funding from the Phileona Foundation to support international travel scholarships.

Nate Bos '19, Briana Neuzil '19, Craig Gapinski '19, David Pillman '19, Sam Beech '19, and Lukas Wallerich, '15 DVM

Photos courtesy of the College of Veterinary Medicine Alumni Relations

AFS Board

If you're interested in joining the AFS Board, send your name, email address, and phone number to cvmalumni@umn.edu.

Teresa Hershey, '98 DVM, president
Lukas Wallerich, '15 DVM, president-elect
Gary Goldstein, '84 DVM
Roy Martin, '89 DVM
Heather Case, '98 DVM
Karen Shenoy, '04 DVM
Sue Lowum, '07 DVM
Abigail Albright, '08 DVM
Susan Miller, '08 DVM
Abby Coodin, '10 DVM
Marta D. T. Powers, '11 DVM
Roland Lefebvre, '16 DVM
Jordan Sanford, class of 2020, student representative
Andrea Buckalew, class of 2020, student representative
Paige Gardas-Anderson, class of 2021, student representative
Erika Wehmhoff, class of 2021, student representative

Photo by Amanda Stombaugh

Al Weber

Prominent professor emeritus celebrates milestone birthday

Al Weber's, DVM, 100th birthday was cause for celebration on March 13. The professor emeritus is well-remembered by thousands of alumni. He joined the faculty in 1949, performed research on cattle leukemia during two highly competitive National Institutes of Health international fellowships, and taught classes through the 1980s.

Photo courtesy of John Howe

John Howe

Alumnus John Howe runs for AVMA president

BY GREG BREINING

John Howe, '77 DVM, spent two governor-appointed terms on the Minnesota Board of Animal Health, where he has represented veterinarians on regional and state veterinary organizations. He has also served on the board of directors of the American Veterinary Medical Association (AVMA). All that in addition to building his own vet practice, teaching gun and archery safety, and serving at his local church.

And he isn't ready to slow down.

Howe is running for AVMA president. A new president will be elected in mid-July at the group's convention in Denver.

A 1977 graduate of the University of Minnesota College of Veterinary Medicine, Howe recently sold North Country Veterinary Clinic, a six-doctor mixed-animal practice in Grand Rapids, Minn., though he still fills in as a relief vet.

But winning the election would be the opposite of retiring. The winner will serve for three years in total—one year as president-elect, one year as president, and one year as the past president. Both positions require up to 300 days of travel each year, including testifying before Congress. "It's pretty much a full-time position," says Howe. "There's no way you could run a practice."

So why put off the fishing and hunting he enjoys?

"I still have more to give," he says, "and there are things I want to see done." He says he believes strongly in the profession's mission of protecting animal and human health. And he wants to create better opportunities for AVMA members.

"Members want to know, 'What am I getting for my dues?'" he says. "I think we still need to do a better job of showing them how it's worth it."

Among the benefits of joining the AVMA are a job-seekers' database to help young vets find professional opportunities. The AVMA also lobbies for laws and regulations that aid veterinary practice.

Howe "represents the ideal candidate to lead the AVMA," says Trevor Ames, dean of the College of Veterinary Medicine. If that endorsement carries weight, Howe may have to put off retirement. But he may not mind.

Says Howe, "I always liked being involved."

At the time of this publication, the results from the election had not yet been announced.

In remembrance

Douglas H. Anderson, ’68 DVM, Roswell, Minn., died Dec. 31, 2017, at age 79. Anderson had a private practice for more than 20 years in Woodland Park, Colo. Anderson started his career with the USDA in 1984, working with cattle until he retired in 2001. Doug is survived by his wife, Kathryn; 1 child; 3 grandchildren; and 2 great-grandchildren.

Steven W. Anderson, ’60 DVM, Mankato, Minn., died Jan. 16 at age 81. Anderson treated both large and small animals in private practice for 40 years. He is preceded in death by his daughter, Christine, and survived by his wife, Pat; 5 children; 17 grandchildren; and 2 great-grandchildren.

Ervin J. Baas, ’60 DVM, Richmond, Virg., died April 25 at age 86. Baas eventually obtained his PhD from University of California-Davis in comparative pathology and laboratory animal medicine in 1971. He was inducted into the Phi Zeta Society of Veterinary Medicine and was an animal disease investigator for the National Institutes of Health. Baas was licensed in Minnesota, Iowa, California, Maryland, and Virginia. He was a member of the College of Laboratory Animal Medicine, District of Columbia Veterinary Medical Association, American Veterinary Association (50 years), American Association of Laboratory Animal Medicine, and Laboratory Animal Practitioners Association. He is survived by his wife, Avis; 2 children; and 2 grandchildren.

Henry J. Blohm, ’52 DVM, Kiester, Minn., died Nov. 24, 2017, at age 94. Blohm received his bachelor’s from S.A.U.U., the then-agricultural college at the U of M in 1942. After serving as a medic in the U.S. Army from 1943 to 1946, he used the GI Bill to return to the U for his DVM. Blohm worked in private practice. He is predeceased by his wife, Doris; and survived by 6 daughters, 7 grandchildren, and 10 great-grandchildren.

Gerald A. Dahl, ’66 DVM, Park River, N.D., died Nov. 24, 2017, at age 75. Dahl worked in private practice. He was a lifetime member of the North Dakota Veterinary Medical Association and Minnesota Veterinary Medical Association. The North Dakota Veterinary Association named him Veterinarian of the Year in 2015.

Raymond L. Grefe, ’54 DVM, Walnut Grove, Minn., died Feb. 22 at age 90. Grefe was a large and small animal veterinarian in the Walnut Grove and Westbrook areas for over 40 years, with his own private practice. He also served as Walnut Grove’s mayor for 13 years. He is predeceased by his wife, Joni; and his daughter, Ann. Grefe is survived by 2 children and 3 grandchildren.

Wayne O. Hagen, ’72 DVM, ’89 PhD, Belgrade, Minn., died April 27 at age 70. Hagen owned the Belgrade Veterinary Clinic from 1972 to 1987 when he left practice and went on to earn a PhD in veterinary medicine at the University of Minnesota. He then began employment at NutriBasics (now Trouw) of Willmar, Minn. Hagen is survived by his wife, Mary; 2 daughters; and 1 granddaughter.

Lois E. Harmon, ’97 DVM, Becker, Minn., died Feb. 17 at age 63. Harmon was a shelter veterinarian at the Tri-County Humane Society for 13 years, during which time the Tri-County Humane Society estimates that she cared for more than 40,000 animals.

Eugene K. Karnis, ’54 DVM, Miltona, Minn., died Jan. 17 at age 90. Karnis was a partner at the Alexandria Veterinary Clinic. He is predeceased by his first wife, Pat (1985) and his second wife, Twyla (2014). He is survived by 3 children, 5 grandchildren, and many great-grandchildren.

George A. Lakes, ’56 DVM, Oxnard, Calif., died April 19 at age 90. Lakes worked for the California State Bureau of Poultry Inspection and Mackey Animal Hospital. He opened his own practice, Lake’s Pet Clinic, in 1961. He is survived by his wife, Arline; 4 children; and 3 grandchildren.

Daryl D. Larson, ’77 DVM, Paynesville, Minn., died April 24 at age 65. Larson worked as a veterinarian in the poultry and swine industry. He owned multiple hog confinements in Iowa.

In remembrance

William V. Lumb, DVM, '57 PhD, Fort Collins, Colo., died Feb. 3 at age 96. Lumb received his DVM from Kansas State University in 1943 and his PhD from CVM in 1957. He taught small animal surgery and medicine at Colorado State University and taught in the small animal clinic and did research at Michigan State University. In 1963, Bill was made Director of the Surgical Laboratory at Colorado State, where he developed a graduate teaching and research program in surgery and anesthesiology. He was a Past President and Founding Diplomate of the American College of Veterinary Surgeons and a Founding Diplomate of the American College of Veterinary Anesthesiologists. Lumb was the recipient of The ACVS Founders' Award for Career Achievement. He was an External Examiner at the faculty of veterinary medicine in Kabete, Kenya, and a consultant to the faculties of veterinary Medicine in Libya and the Sudan. He held the first patent for a complete prosthetic vertebra and a second for spinal plates. Lumb is survived by his wife, Lilly; 1 child; and 2 grandchildren.

Donald O. Manthei, '54 DVM, Mesa, Ariz., died March 29 at age 91. Manthei was a dog trainer while serving in the U.S. Army, and many of the service dogs he trained went on to Vietnam. He was a partner at the Melrose Veterinary Clinic in Melrose, Minn. Manthei is predeceased by his son, Michael, and survived by his wife, Maxine; 5 children; and 7 grandchildren.

Roger W. Meads, '63 DVM, Hortonville, Wis., died April 7, 2017, at age 83. Meads practiced veterinary medicine at the Heritage Animal Hospital in Hortonville for 46 years. He was a proponent of preventative herd health management. He is survived by his wife, Stannye; 3 children; 8 grandchildren; and 1 great-grandchild.

Roland "Rollie" C. Olson, '57 DVM, St. Paul, Minn., died June 8 at age 85. From 1987 to 2002, he served as executive director of the Minnesota Board of Veterinary Medicine. Olson served as a member and President of the CVM's Veterinary Medicine Alumni Society and worked with his classmates to establish the Minnesota Veterinary Historical Museum at the University of Minnesota. Olson was a consultant to the USAF Surgeon General for Military Public Health. He was also the recipient of the Legion of Merit Award for exceptional meritorious conduct in outstanding services to the United States as Command Veterinarian, and Minnesota Veterinary Medical Association Outstanding Service Award. He is survived by his wife, Muriel J. Bebeau; 2 children; 2 step-children; and 7 grandchildren.

Lowell L. Patterson, '54 DVM, Whitehall, Wis., died Nov. 4, 2017, at age 90. Patterson established the Whitehall Veterinary Service and served the veterinary needs of Trempealeau, Jackson, and Buffalo counties in dairy herd health and management with emphasis on dairy production. He is predeceased by his first wife, Clara Mae; and 1 son. He is survived by his second wife, Shirley; 6 children; 10 grandchildren; and 16 great-grandchildren.

Bennett J. Porter, Jr., '61 DVM, Wayzata, Minn., died Dec. 14, 2017, at age 86. Porter was founder and owner of Westgate Pet Clinic from 1971 to 1995. He is predeceased by his wife, Mary Jean. He is survived by 4 children, including Bennett Porter III, class of 1982, and Thayer Porter, class of 1959. He is also survived by 9 grandchildren; and 1 great-grandchild.

Darold L Strandberg, '57 DVM, Alma Center, Wis., died April 12 at age 90. Strandberg served in the Korean war and received the Purple Heart after being seriously wounded in action on March 8, 1951. After Korea, he attended the University of Minnesota in Duluth before attending the CVM. He began his practice in Alma Center shortly after graduating. He served on the Wisconsin Veterinary Examination Board and belonged to the American Jersey Cattle Association, serving on the board of directors and as vice president. He was preceded in death by his wife, Sylvia, and is survived by 5 children; 10 grandchildren; and 21 great-grandchildren.

Janet D. Veit, '96 DVM, La Crescent, Minn., died May 20 at age 48. Viet worked as a veterinarian at Hillside Animal Hospital in La Crosse, Wis. for 22 years.

Frederick M. Wells, '61 DVM, Berlin, Wis., died Jan. 30 at age 86. Upon graduating from CVM, Wells purchased the Berlin Veterinary Clinic, where he practiced for 35 years. He is predeceased by his first wife, Kathy, and his daughter, Beth. Wells is survived by his second wife, Sylvia; 2 children; 2 grandchildren; and 5 step-children.

Robert A. Williams, '60 DVM, Olympia, Wash., died April 16 at age 86. Williams had practices in Minnesota, Illinois, Vermont, Colorado, and Washington state. He also was a USDA Federal Veterinary Medical Officer in charge of shipping animals around the world from SeaTac and sea ports. Williams is survived by his wife, Georgia Mae; 4 children; 10 grandchildren; and 7 great-grandchildren.

Lasting loyalty

BY GREG BREINING

Photos courtesy of Kari Seime

Kari Seime and her dog, Cilla

Kari Seime became a booster of the University of Minnesota Veterinary Medical Center (VMC) after she lost two dogs to heart problems.

Seime, a lawyer and senior labor relations consultant at the University of Minnesota, never had dogs as a kid but always loved them. "Whenever anybody else had a dog, I always had to play with it," she says.

She took the leap into dog ownership as an adult in 1993, buying a toy poodle puppy she named Elvis. At age 11, Elvis developed a heart murmur and an enlarged heart. One day Seime found Elvis gasping. His gums and tongue were gray. Her vet said nothing could be done to save him, and Elvis was put down. "Heartbreaking," says Seime.

A month later, Seime bought another toy poodle puppy and named him Coal. He lived a healthy life until age 12, when he, too, developed a heart murmur. "He was listless and coughing—I recognized what it was," she says. This time she made an appointment to bring him to the University Veterinary Medical Center in two weeks. But when he began to wheeze, she decided, "He has to go to the U now." She raced him to the clinic, where he was admitted to the ICU, put on diuretics, stabilized, and prescribed medications.

If you are interested in supporting the VMC, contact Bill Venne, chief development officer at the CVM, at 612-625-8480 or venne025@umn.edu.

"I got another year with my precious little Coal that I never would have gotten without the emergency room, cardiology, and ICU. I think he probably would have passed away that weekend if I hadn't gotten him to Vet Med," Seime says. "That's when I decided that I wanted to include the VMC in my estate planning because I think they provide such an important service."

In addition to setting up a gift to the Veterinary Medical Center, Seime donates through the annual giving fund. She also volunteers and raises money for private animal welfare groups.

Seime is now a regular client of the Veterinary Medical Center, paying for the care of her newest dog, a four-year-old Cavalier King Charles spaniel-poodle mix named Cilla, with a U Pet Wellness Plan.

"I just think the VMC offers the best veterinary care for not only dogs, but for any animal that we have available in the region," she says.

profiles

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