

Best friends

THE PET MAGAZINE OF THE ONTARIO VETERINARY COLLEGE

Meet the Graduates **12**

Go behind the scenes
in OVC's new Intensive
Care Unit and get to
know some of its first
patients

Plus

The scoop on
grain-free diets **10**

More vets for more pets:
Expanding veterinary
training in Ontario **17**





Photo credit: Dean Palmer Photography.

FROM THE DEAN, ONTARIO VETERINARY COLLEGE

ABOUT OVC PET TRUST

As Dean of the Ontario Veterinary College (OVC), I am lucky to witness the inspiring stories of the thousands of patients treated in our Companion Animal Hospital every year. Walking the light-filled hallways past exam rooms, surgical suites, and recovery spaces, I often marvel at the breadth of complex cases that come through our doors – and the resilience of our patients. You will meet a few of those patients in this issue of Best Friends, and I hope you are as inspired by their stories as I am.

As an educator and pet owner, I am equally inspired by the veterinarians who train and practice here. It is their ingenuity, curiosity, and passion that sets OVC apart as a world-leading veterinary school.

Now more than ever, veterinarians are tasked with tackling not only the clinical issues presented in the course of their day-to-day practice – issues that require incredibly deep knowledge and practical skills – but also the broader societal issues that affect all pet owners. For so many in Ontario and across Canada, access to veterinary care is limited and can be impacted by geography, socio-economic factors, and an overburdened industry struggling to keep up with the increased demand for veterinary services.

Student veterinarians who graduate today must meet the profession's complex and evolving challenges head-on; I have every confidence that they have the talent and drive to do just that. My colleagues at OVC and I recognize the privilege we share in serving as gatekeepers to the veterinary profession in Ontario. We continually evaluate our curriculum, facilities, and programs to ensure we can continue to provide the most enriching environment possible for the next generation of veterinarians.

This is why I am thrilled that, for the first time in more than 35 years, OVC is preparing to significantly expand our Doctor of Veterinary Medicine (DVM) program. As you will read in this issue, the University of Guelph has partnered with Lakehead University to create a unique program that will allow us to train more veterinarians to meet the industry's growing needs and leverage our respective strengths to make veterinary education accessible to a more diverse pool of aspiring vets. We look forward to sharing more about this exciting program with you as it evolves.

As supporters of OVC Pet Trust, I know how invested you are in helping the pets we love live longer, healthier lives. Expanding access to veterinary care for all and ensuring new veterinarians are prepared for the various challenges they will face in clinical practice will play a key role in doing just that.

Thank you for your ongoing and dedicated support.

Dr. Jeff Wichtel
Dean and Professor
Ontario Veterinary College
University of Guelph

BEST FRIENDS

Published twice per year by
OVC Pet Trust.

EDITORIAL TEAM

Ashleigh Martyn
Katherine Galley
Kim Robinson

CONTRIBUTORS

Anya Barradas
Suzy Beber
Katie Duncan
Becky Rothwell

GRAPHIC DESIGNER

Allison Graef

OVC PET TRUST BOARD

Mary Beaton,
Colin Campbell,
Dr. Doreen Houston,
Dr. Karyn Jones,
Kim Lang,
Dr. Jennifer Ogeer (Chair),
William Pringle,
Dr. Rebecca Sterns,
Roland Browning Watt,
Dr. Jeff Wichtel.
Honorary: Roger Warren.
Ex-officio: Dr. Luis Gaitero,
Alison McLaren,
Kim Robinson,
Dr. Shayan Sharif.

CONTACT OVC PET TRUST

Ontario Veterinary College
University of Guelph
50 Stone Road
Guelph ON
N1G 2W1
T. 519-824-4120 x 54695
E. ovcpet@uoguelph.ca

**GIVE TO
OVC PET TRUST**
pettrust.ca/donate

OVC PET TRUST
WWW.PETTRUST.CA

Connect with OVC Pet Trust on
Instagram @OVCPetTrust

As part of the Ontario Veterinary College (OVC) at the University of Guelph, OVC Pet Trust is Canada's first charitable fund dedicated to advancing pet health and well-being. We do this by raising funds to support innovative discoveries, healthcare and education that improves the prevention, diagnosis and treatment of diseases of companion animals. Since 1986, more than \$73.5 million has been raised to improve life for pets and the people who love them. As of 2023, OVC is ranked first in Canada, third in North America and 6th worldwide for veterinary science by the Quacquarelli Symonds' World University Rankings.

TO LEARN MORE OR TO DONATE VISIT PETTRUST.CA

Contents.



IN THIS ISSUE:

- 2 FROM THE DEAN OF THE ONTARIO VETERINARY COLLEGE
- 4 FROM THE DESK OF OUR DIRECTOR
- 4 OVC MEWS: UPDATES FROM THE ONTARIO VETERINARY COLLEGE
- 6 PAWS ACROSS BORDERS: EXPLORING THE IMPACT OF DOG IMPORTATION IN CANADA
- 8 A DAY IN THE LIFE OF OVC'S MEDICAL ONCOLOGY SERVICE
- 10 THE SCOOP ON GRAIN-FREE DIETS: OVC RESEARCHERS EXPLORE CONNECTIONS BETWEEN NUTRITION AND HEART HEALTH IN DOGS
- 12 A PLACE FOR HEALING: MEET THE GRADUATES OF OVC'S NEW INTENSIVE CARE UNIT
- 17 MORE VETS FOR MORE PETS: EXPANDING VETERINARY TRAINING IN ONTARIO
- 18 GETTING TO KNOW... DR. XIU TING YIEW
- 20 YOUR GIFTS AT WORK
- 22 SIX DEGREES OF SEPARATION
- 23 PETS IN MEMORY: HONOURING RIDLEY

BACK COVER

PET TRUST PALS

On cover: OVC patient Perseus. Photo credit: Katie Duncan.



FROM THE DESK OF OUR DIRECTOR

At OVC Pet Trust, we often say that “the only constant is change.” As pet ownership continues to grow, the veterinary profession continues to evolve, and science continues to advance, it is important to take a moment to pause and appreciate where we’ve come from and look forward in excitement for the things to come.

Over the past few years, and with your incredible support, we have been able to modernize both the surgical and anesthesia facilities in the Ontario Veterinary College’s (OVC) Companion Animal Hospital and the intensive care unit and specialty services suites. We have funded dozens of research projects at the very forefront of veterinary medicine, which will benefit the pets we love (and humans too!) for decades to come. And we have provided innumerable opportunities for hands-on learning to hundreds of veterinary students who will soon enter clinical practice. How wonderful that we have so much to celebrate!

Things are also changing for the OVC Pet Trust Team.

I am excited to share with you that Alison McLaren has joined our team as the new Manager of OVC Pet Trust. Alison has worked in the not-for-profit and higher education sectors for over 12 years. Her experience, passion, and vision for the next evolution of Pet Trust makes her a perfect fit for this position. She is a strong believer in the vital role that companion animals play in human well-being, and in her spare time can be found adventuring or competing in agility with her miniature dachshund, Dudley. Please join me in welcoming Alison (and Dudley!) to the OVC Pet Trust family. I hope you will enjoy getting to know them as much as I have.



In photo: Alison McLaren, Manager of OVC Pet Trust, and her dog Dudley

Throughout the past few years, I have been reminded time and time again how special our community of OVC Pet Trust friends and supporters truly is. Your dedication to companion animals and appreciation for the human-animal bond inspires me every day, and I couldn’t be more grateful for your unwavering support for our mission. I am lucky to work closely with the many veterinarians, researchers, and educators who lean on OVC Pet Trust to advance their important work, and I speak on their behalf when I say that we couldn’t do any of it without you.

Thank you so much.

Kim Robinson
Former Director, OVC Pet Trust
Senior Advisor, External Relations
Ontario Veterinary College
University of Guelph

OVC MEWS

UPDATES FROM THE ONTARIO VETERINARY COLLEGE

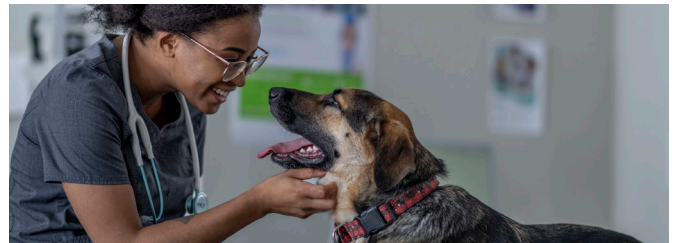


BENCH TO BEDSIDE INSTITUTE HOSTS INAUGURAL RESEARCH SYMPOSIUM AT THE ONTARIO VETERINARY COLLEGE

On June 6, 2023, the Bench to Bedside Institute for Translational Health Research and Innovation at the Ontario Veterinary College hosted its first Translational Health Research Symposium: Addressing the Translational Gap to celebrate the launch of the institute.

The inaugural event brought together veterinary and human health researchers, clinicians, industry experts, policymakers, and patient care advocates with a common goal of accelerating the therapy development pipeline for naturally occurring diseases that affect both humans and animals. The University of Guelph researchers who spoke at the event represented research initiatives in their respective fields, including cancer, epidemiology, neurological disease, and regenerative medicine.

Recordings of presentations from the symposium and a panel discussion with OVC researchers and distinguished guests are available on the Ontario Veterinary College’s YouTube channel.



MODERNIZING THE VETERINARIANS ACT OF ONTARIO

In early 2023, the Government of Ontario opened the Veterinarians Act of Ontario for consultation for the first time in more than 30 years. The Veterinarians Act is the legislative framework that governs the licensing of veterinarians and the practice of veterinary medicine in Ontario; it also governs the accreditation of clinical veterinary facilities.

The goal of the public consultations is to modernize the Veterinarians Act to better define the scope of practice for veterinary medicine (including the critical role that Registered Veterinary Technicians play in clinical practice), to improve transparency and align oversight of Ontario’s veterinary profession, and to uphold the public interest.

The Ontario Veterinary College (OVC), the College of Veterinarians of Ontario (CVO), the Ontario Veterinary Medical Association (OVMA) and the Ontario Association of Veterinary Technicians (OAVT) have all contributed to the public consultations with a goal of improving access to veterinary services for animal owners across Ontario.



DR. SARAH ABOOD TO HOLD NESTLÉ PURINA PROFESSORSHIP IN COMPANION ANIMAL NUTRITION

Dr. Sarah Abood - a veterinary nutritionist, pet food industry consultant and educator - has been named the new recipient of the Nestlé Purina Professorship in Companion Animal Nutrition at the Ontario Veterinary College (OVC).

Abood earned her Doctor of Veterinary Medicine (DVM) from Michigan State University before completing a PhD in Veterinary Science – Nutrition at Ohio State University. She has conducted research in canine and feline nutrition for more than 20 years and previously spent two years teaching at OVC. She is a 24-year member of the American Academy of Veterinary Nutrition and a Fellow of the Canadian Academy of Veterinary Nutrition.

Since the Professorship was established in 2020, Nestlé Purina Pet Care has given more than \$800,000 to help enhance clinical nutrition education for veterinary students, expand research in pet nutrition and mobilize knowledge on companion animal nutrition among pet owners and veterinarians.

"Proper nutrition is a vital part of pet health maintenance and disease prevention," says Dr. Abood. "The pet nutrition team at OVC works every day to ensure that pet owners and veterinarians have the information and data they need to make healthy dietary decisions for companion animals. I'm delighted to be able to return to Guelph and contribute to the OVC nutrition curriculum and research program."



OVC NAMES DR. ALICE DEFARGES INTERIM ASSOCIATE DEAN, RESEARCH AND GRADUATE STUDIES

Dr. Alice Defarges, Associate Professor of internal medicine in the Department of Clinical Studies, has been named Interim Associate Dean of Research and Graduate Studies of the Ontario Veterinary College (OVC). She is expected to serve a one-year term in this position while Dr. Shayan Sharif moves into the role of Interim Associate Vice-President of Research for the University of Guelph.

Defarges joined OVC as Assistant Professor of Internal Medicine in 2008. Her areas of clinical and research interest include minimally invasive procedures, urology, and gastroenterology. In addition to her teaching, clinical and research responsibilities, she currently serves as Director of the Comparative Clinical Research Facility (CCRF) and the Chair of the OVC Pet Trust Scientific Review Committee. Defarges has also served as the chair of the Veterinary Interventional Radiology and Interventional Endoscopy Society Scientific Review Committee since 2019.

Defarges earned her veterinary degree from L'école Nationale Vétérinaire d'Alfort in France and worked in private practice for several years before moving to North America to pursue more specialized training. She has presented her research and shared her experience in minimally invasive procedures in Europe and North America and has collaborated in research with multiple institutions in Sweden, the United States, Canada, France, and Germany to advance veterinary medicine. She is recognized internationally as an expert in capsule endoscopy in dogs.

PAWS ACROSS BORDERS



Photo credit: Freepik

OVC researcher explores the impact of dog importation in Canada

In recent years, the number of imported dogs in Canada has grown significantly. Thousands of puppies and adult dogs cross our borders every year, often brought in by international breeders and rescue organizations. While Canadians are eager to adopt these pets into their households, the potential risks associated with bringing foreign dogs into a new country are still not fully understood.

A research team at the Ontario Veterinary College (OVC) is working on a first-of-its-kind multi-year study to better understand Canadian dog importation and how this practice can be made safer for both the dogs and the people taking care of them.

Dr. Katie Clow, a researcher in OVC's Department of Population Medicine, estimates that in 2019, roughly 37,000 dogs were imported into Canada based on data provided by the Canada Border Services Agency. This represents an astounding 400 percent increase compared to just six years prior.

While commercially imported dogs require a permit and specific vaccinations to enter Canada, dogs imported for personal reasons only require an up-to-date rabies vaccination and a healthy appearance.

"I've heard of instances where multiple dogs were brought in on the same flight as someone's personal pets," said Clow. "Afterward, they could've been handed off to new owners or to a rescue organization that would then adopt the dogs out. It's a pretty well-known loophole for individuals who are looking to bring dogs into Canada."

There is no data available on dogs imported for personal reasons, but a manual count conducted by OVC researchers at the Toronto Pearson International Airport in 2015 suggests that personal dog importation outnumbers commercial dog importation by almost two-to-one.

"There are a number of foreign dog adoptions that have gone superbly well, and the pet owners report that they would happily repeat the process again," said veterinarian and PhD candidate Dr. Catherine Belanger, who works with Clow. "Unfortunately, we've also seen experiences that didn't turn out so well, resulting in significant financial and emotional hardships for the pet owners."

"When I was chatting with pet owners in this study, it was eye-opening to learn how many were not aware of potential pathogens that their new pet could be carrying that may be putting their existing pet(s) and family members at risk," said Belanger.

A two-week quarantine period immediately following dog importation is generally recommended to rule out possible respiratory infections like canine influenza. However, there is no regulatory requirement for such quarantine in Canada, and in some cases, dogs are released to their new owners very shortly after arrival. Other diseases and pathogens may take months or even years to surface.



Photo credit: Istockphoto.com/Chalabala



Photo credit: Istockphoto.com/humonia

“There are some rescue organizations who are trying to do their absolute best for these dogs,” said Clow. “They do a ton of testing, ensure dogs are shipped in certain conditions, and have requirements for vet care. However, on the other end of the spectrum, the conditions might be really bad where dogs are being imported from puppy-mill-type situations.”

Having to rule out any potential foreign diseases or pathogens in imported dogs is putting additional strain on Canadian veterinarians.

“For veterinarians, there is an overall lack of comfort diagnosing foreign pathogens because it’s just not something we would expect to see in a dog in Canada,” said Belanger. “Additionally, there is a huge concern over forged documents - but even if the paperwork is real, there could be issues. Sometimes vaccines are not administered properly, or the dog didn’t receive the right number of doses, or the timing is wrong.”

Despite the challenges, Clow points out that it’s important to recognize the positive intentions and values among pet owners that are fuelling pet importation.

“I’ve been in tears watching these dogs come and be united with these owners,” said Clow. “If we don’t pay attention to what drives pet owners to adopt foreign-born dogs and resort to simply putting legislation in place to ban it, people will continue to find loopholes. It’s not a holistic solution. Every life matters and there’s a huge moral connotation that we have yet to explore with our research.”

For the next phase of this research study, Clow will partner with U of G’s Department of Anthropology to look specifically at owner motivations and perceptions related to pet importation.



Thinking of adopting an imported dog?

While there is no way to foresee all possible health or behavioural complications when you welcome a foreign-born pet into your home, certain precautionary measures can be taken. The Canadian Food Inspection Agency (CFIA) website provides a list of questions to ask during the adoption process. Prospective owners can also review the CFIA 2022 update that lists over 100 countries banned from importing dogs into Canada due to their high incidence of canine rabies.

Do your research!

Learn as much as you can about the adoption organization: What are their policies? What countries are they importing the dogs from? What is the dog’s medical history? Has the dog had any behavioural assessments? Always ask to see supporting documentation!

See your veterinarian

One of the best things pet owners can do is take their dog to a veterinarian shortly after their arrival, even if they look perfectly healthy and their medical records appear to be up to date. Your veterinarian may recommend appropriate testing depending on the dog’s country of origin.

Isolate, then socialize slowly

The first few weeks in a new country can be stressful for a new dog. Giving them their own space in your home can help them get acclimatized and prevent disease transmission to other pets and family members.

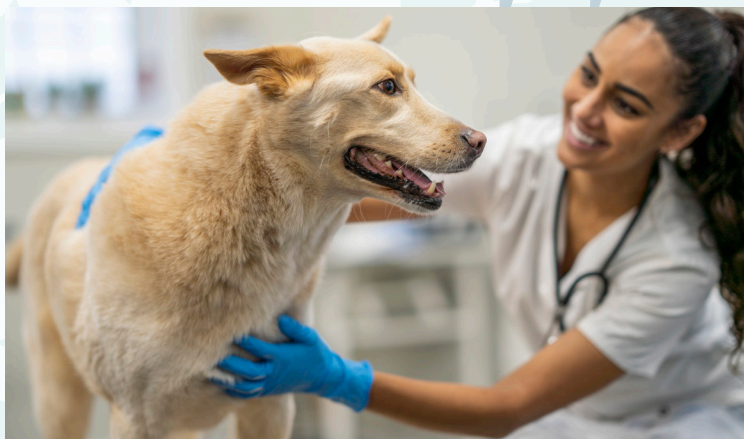


Photo credit: Istockphoto.com/FatCamera

a day in the life of the OVC Medical Oncology Service

Tucked away in the western end of the Health Sciences Centre at the Ontario Veterinary College (OVC), there's a quiet, bright space filled with equally bright people – the Mona Campbell Centre for Animal Cancer, home to OVC's Medical Oncology service.

Client consultation rooms off the main hallway give way to one large adjoining patient examination room flooded with natural light. There's low chatter from the room, a mixture of voices as Registered Veterinary Technicians (RVTs) greet each other with friendly queries about weekend plans while bustling to get today's board prepared ahead of patient arrivals.

The board is a massive wipeable surface in the centre of the wall, updated daily to track which patients are arriving for treatment, which are coming for rechecks following treatment and who will receive Telehealth calls that, for some, will be the beginning of the fight of their lives. This morning, the board is full with all three appointment types, but the room is calm and happy.

Dr. Danielle Richardson is the Oncology Service Chief Veterinarian, leading a team of 20 people including radiation, surgical and medical oncologists, RVTs and a veterinary social worker. The team also teaches Doctor of Veterinary Medicine (DVM) students from OVC in their final year of study as they work through their clinical rotations.

The calm, cool and collected demeanor that Dr. Richardson exudes radiates through the whole team; everyone has a place, a patient and a purpose – and the team runs like a well-oiled machine.

"We are fortunate to have such a strong team made up of wonderful people who come to work each day with a positive attitude and who are ready to make a difference in an animal's life," Dr. Richardson explains. "Ultimately, our true strength is in our technicians; they are the first face the patients and clients see each visit, and not only are they exceptionally skilled, but they are the consistent source of support to families as their pets are going through cancer treatment."

Today, OVC Pet Trust shadows Dr. Richardson and her team in the clinic.



Dr. Danielle Richardson greets Remington, a nine-year-old black Labrador Retriever who returned to OVC all the way from Callander, Ontario, just east of Sudbury.

9 a.m.



The oncology team starts their day with rounds led by oncologists where the oncology team and student veterinarians get an overview of each patient case. Dr. Valerie Poirier, Radiation and Medical Oncologist, stands in the centre of the oncology examination room as rounds come to an end.

As with many services in the hospital, the day begins with patient rounds. The oncology service at OVC accepts patients on a referral-only basis from their primary care veterinarians after they've already been diagnosed or when there is a suspicion they might have cancer.

Dr. Paul Woods, both a practicing Oncologist and Professor of Medical Oncology and Internal Medicine in the Department of Clinical Studies, ends patient rounds with many student veterinarians in tow. The room buzzes

with the excited energy from students who are just wrapping up their second week of clinical rotations.

9:30 a.m.

Bolt is a five-year-old French Bulldog with lymphoma who is having his third round of chemotherapy. Lymphoma is a common cancer in middle-aged dogs that can impact the lymph nodes and organs like the spleen and liver. Bolt's assigned RVT is Vicky, who is paired with him each time he comes to OVC. Most treatment plans will require return visits, so this practice pairs patients with a familiar face when they arrive; this helps the team get to know each patient and their unique temperaments and behaviour.



Bolt is examined by Dr. Kimberley Williams (left) and Vicky, his assigned RVT for treatment days.

Bolt is weighed, examined by Dr. Kimberley Williams, and has blood drawn to check his red and white blood cells and platelets. If Bolt's white blood cell count falls within a good range, a prescription will be written for today's chemotherapy treatment.

10 a.m.

By mid-morning, Dr. Williams and a few veterinary students are preparing for their first Telehealth call of the day.



Remington waits for his owner to pick him up following x-rays and a follow up exam. Remington's owners have driven nearly four hours one way to receive care and treatment at OVC.

Meanwhile, Dr. Richardson is returning Remington, a nine-year-old black Labrador Retriever, to his owner following a re-check and x-ray. He was referred to the team in 2022 with mandibular osteosarcoma (cancer of the jawbone) and a leg injury. Treatment and surgery were able to remedy both, however, in March 2023, the cancer returned, this time in his lungs. The treatment has shifted from curing Remington's cancer to making him more comfortable as his owner and Dr. Richardson monitor his health for signs that he is ready for end-of-life care. In these difficult moments, the team often leans on the expertise of Sarah Bernardi, a registered veterinary social worker who helps clients navigate difficult decisions for their beloved pets.

10:30 a.m.

Winding through the hallway, the team has prepared a 12-year-old Chihuahua mix named Mochi for a re-check ultrasound. Mochi was referred to the team in the spring of 2022 by his primary care veterinarian after experiencing unexplained weight loss. An ultrasound revealed a cancerous mass on his liver and, following surgery to remove the tumour, he spent four weeks undergoing radiation therapy before graduating from the clinic. In spring 2023, a re-check ultrasound revealed the tumour had returned. The team oversees his current diagnostic plan, which includes ultrasounds and x-rays to monitor his status.

11 a.m.

Toward the back of the unit, the radiology team is preparing for the arrival of Waffles, an eight-year-old Basset Hound who will receive her final of four radiation treatments targeting a mass found during a previous rectal exam.

Radiation is used alone or in combination with surgery and chemotherapy to target the DNA

of cancer cells, which are damaged by the high-energy radiation.



A Radiation Therapist gets patient Waffles ready for radiation treatment by placing her in her cast, positioning the treatment table, and rotating the accelerator arm to line up with the treatment area.

Samantha, a radiation technician, and Emily, an anesthesia technician, wheel Waffles into the radiology suite, which sits at the end of a long and winding corridor of concrete that prevents radiation from leaving the room during treatment. In the centre of the room stands the linear accelerator, which provides precise treatment to targeted areas only. Waffles is sedated first, and then intubated to help her breathe. Monitors will keep track of her vitals throughout the treatment.

Once hooked up to the appropriate monitors, Waffles is lifted into a blue-coloured mattress that has been form-fitted specifically for her. The mattress ensures she is laying in the exact same position for each treatment. The team lines her body up using lasers, a table that moves up and down and back and forth, and the treatment arm that moves in a 360-degree circle.

Once Waffles is correctly positioned, the team leaves the room to protect themselves from radiation. Using cameras in the room, they monitor her from a safe distance while she receives treatment for approximately 10-15 minutes.

12 p.m.

Bolt's labs have come back indicating his white blood cell numbers are where they need to be to have chemotherapy today. The team works to place a catheter in his leg, which will deliver the treatment later this afternoon.



A pharmacy technician draws chemotherapy medication for treatments scheduled in the afternoon. The room is equipped with a double door, special ventilation and PPE (Personal Protective Equipment) to ensure staff aren't inadvertently exposed to hazardous materials.

In the chemotherapy suite, the pharmacy technician has arrived to prepare the custom-formulated cocktails of chemotherapy drugs for today's

patients. Oncology benefits from having a special room with a double entrance and ventilation for technicians who don gowns, gloves and masks before they draw medication into syringes. The safety practices are meant to prevent exposure for the technicians. When a chemotherapy treatment is ready, the technicians place it in a drop box accessible from the outside room.

12:30 p.m.

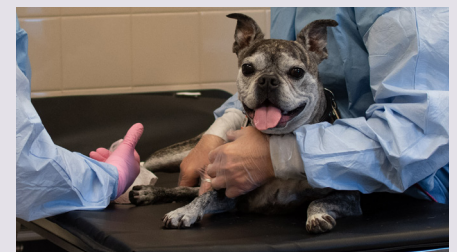
Maggie, a seven-year-old French Bulldog, is also receiving chemotherapy treatment alongside Bolt for a splenic hemangiosarcoma – a tumour located on her spleen.

Oncology Technicians, Melanie and Leigh, deliver the treatment over 20 minutes through a catheter placed in Maggie's leg. The team changed over to this style of port, which can be placed ahead of treatment, replacing the needle used before. A syringe plugs into one of three ports to deliver the chemotherapy drug. The other ports are handy if the team needs to deliver other medications and to flush the line after the treatment.

3 p.m.

The rest of the afternoon is filled with Telehealth calls and rechecks. In between sending patients home and completing treatment plans, the team finds time to sit and complete medical charts for the afternoon's patients while other appointments wrap up.

The team of oncologists, technicians and students gathers at the end of the day in the patient waiting room and hallway for a special ceremony unique to oncology – Waffles' long-awaited graduation from active radiation treatment. Waffles is accompanied by a family member and the team presents a graduation certificate filled with handwritten well-wishes from the treatment team. On behalf of Waffles, her family rings a bell located in the waiting room to signal the end of her treatment and the start of remission.



Maggie grins from her treatment table as RVTs use a catheter port to slowly push chemotherapy drugs into her system.

"My favourite part of the job is the relationships we develop with, not only the pets, but with their families as well," explains Dr. Richardson after a long day. "In some cases we are seeing these patients for months to years and it gives us such tremendous satisfaction to be a part of their journey." 🐾

THE SCOOP ON GRAIN-FREE DIETS

OVC researchers explore connections between nutrition and heart health in dogs

For a dog owner perusing the aisles of their favourite pet store, the wide array of available products can sometimes feel overwhelming – especially when it comes to dog food. Pet owners want to feed their animals the very best food available, but it can be difficult to interpret the nutritional information that accompanies packaged dog foods and what it means for their pet's health.

In recent years, grain-free diets have increased in popularity among dog owners. These foods are typically formulated without grains like wheat, corn, rice, or barley (which have historically been included in kibble-style foods not only for their nutrients but also because starches and carbohydrates can act as binding ingredients to hold the kibble together), and often include “pulse” ingredients like peas, beans or lentils to serve as an alternative carbohydrate source.

However, some studies have suggested that there may be a correlation between grain-free diets and instances of dilated cardiomyopathy (DCM), one of the most common heart diseases in dogs. DCM is characterized by an enlarged heart that inefficiently pumps blood throughout the body; in severe cases, it can result in heart failure or sudden death in affected dogs. Genetics are understood to be the primary cause of DCM, with certain breeds being more susceptible to DCM than others, including Doberman Pinschers, Boxers, Irish Wolfhounds, Newfoundlands, Great Danes, Cocker Spaniels and Portuguese Water Dogs. In 2018 the Food and Drug Administration (FDA) began an investigation into possible links between DCM and grain-free pet foods following an uptick in reports of the disease in dogs that are not typically genetically vulnerable to the disease.

Dr. Shari Raheb is a board-certified veterinary cardiologist and Pet Trust funded researcher who also serves as an assistant

professor in the Ontario Veterinary College's Department of Clinical Studies. Together with PhD candidate Sydney Banton, Raheb is currently conducting a research study to further explore the possible connections between grain-free diets and heart health in dogs.

“The question of a connection between grain-free diets and DCM first came on my radar from a clinical standpoint. We have seen many dogs in the clinic who have been affected by cardiomyopathy, and in some cases, we strongly believe there is a nutritional component to the condition,” says Raheb. “There are numerous publications that point to an association between grain-free diets and DCM. As scientists, however, we know that association does not always equal causation.”

One theory that has been explored is that DCM may be related to a taurine deficiency. Taurine is an amino acid known to play a role in heart function, and it is typically produced at a lower rate in large-breed dogs compared to smaller dogs. “Eight or 10 years ago, we may have had a narrower definition of diet-associated DCM in dogs and cats, where taurine deficiency was strongly associated with that abnormality,” says Raheb. “However, many of the dogs in recent studies did not have a taurine deficiency, so it doesn't look to be a taurine problem specifically.”

One of the challenges researchers face in studying nutritionally mediated DCM (or cases of DCM that are believed to have a nutritional component) is that it can be difficult to isolate various factors that may affect the disease, including any cardiac medications the dog may be taking, how the disease could have progressed, a lack of information from the dog's owner about diet history or feeding practices, or a lack of follow-up visits in the clinic.



“Grain-free diets are very popular – many dogs eat grain-free foods and stay completely healthy, so there is an element of mystery here that we want to explore further. Specifically, we want to further examine why there seems to be an association between grain-free diets and DCM in some dogs and not others.”



"It can be difficult for pet owners to detect DCM; they may not see any clinical signs in their dog until the disease has progressed. When clinical signs do show up, they can include intolerance to exercise, shortness of breath, or sudden collapse," says Banton.

Often, these clinical signs may trigger a veterinarian to prescribe cardiac medication, or a pet owner may make immediate changes to their dog's diet or lifestyle in the hopes of alleviating the symptoms or slowing the progression of the disease. This makes it difficult for researchers to isolate the factors that may have contributed to the development of DCM in affected dogs.



As part of their research, Raheb and Banton will conduct a clinical trial to examine differences in the metabolomic profiles – established by studying small food-related compounds in the blood – of healthy adult dogs eating grain-free diets compared to those of dogs with nutritionally-mediated DCM who are also consuming grain-free diets. To isolate for dietary factors, dogs who are genetically prone to DCM or have already started cardiac medications will be ineligible to participate in the trial.

Additionally, Raheb and Banton will examine the diet and lifestyle history of each of the study participants to identify lifestyle factors that could warrant further study, including food storage, sleep habits, and exercise levels, among others.

"It would be unrealistic to think we can solve the problem of DCM with one study," says Raheb. "It's a complicated topic that benefits from varied and ongoing research. However, every study will contribute to the growing knowledge about DCM in dogs."

Raheb notes that like trends in human nutrition (including the rise in specialty diets like gluten-free, dairy-free, or paleo, for example), swings in pet food trends can sometimes come from a place of fear.

For individuals who may have a limited understanding of the factors that impact metabolic health, or who do not have access to clinical resources like certified dietitians and nutritionists, it can be easy to believe that certain types of nutrients – like carbohydrates, for example – are harmful.

"Grains don't need to be feared – for humans or our pets. We require these nutrients as part of a healthy diet, and they can come from a variety of sources," says Raheb. "Grains and pulse ingredients have complementary amino acid profiles and form an optimal protein. They complement each other well as part of a balanced diet."

"Dogs need nutrients, not ingredients," adds Banton. "We don't believe there's any reason to be scared of a grain-free diet, but we are working to provide pet owners and veterinarians with more fulsome information that they can use to make nutrition decisions."

For dog owners who are worried about their pet's heart health, Raheb stresses the importance of routine veterinary care. "Often, there will be some changes in a dog's physical exam that could provide clues to some early cardiac disease – the vet might detect a heart murmur or arrhythmia, which may not cause any outward problems for the dog but could be a signal for further diagnostic testing and preventative measures."

She adds, "In general, I encourage pet owners to rely on their veterinarian's support in establishing a balanced diet for their dogs; there is no one-size-fits-all solution for nutrition."

Raheb and Banton's research is funded by OVC Pet Trust. Pet owners or referring veterinarians who are interested in participating in the clinical trial should visit clinicaltrials.uoguelph.ca to learn more or contact ovc.clinicaltrials@uoguelph.ca. 🐾



A place for healing

Meet the Graduates of OVC's New Intensive Care Unit

When a beloved pet faces a medical crisis, nothing matters more than bringing them back to health. Every day, the Companion Animal Hospital at the Ontario Veterinary College (OVC) treats pets requiring complex, emergency and advanced health care - and the need for these services is growing. Thanks to extensive renovations (made possible by supporters of OVC Pet Trust), the hospital's Intensive Care Unit (ICU) is now better equipped to deliver lifesaving and specialty care to more patients while enhancing training opportunities for the next generation of veterinarians in Canada.

For OVC's veterinary care teams, there is nothing more rewarding than seeing a patient who was once critically ill return home to their loving family.

These are the stories of some of the first patients treated in the modernized Catherine Bergeron Centre for Urgent and Critical Care. They are stories of hope, resilience, and - ultimately - recovery.

Perseus

Perseus is a three-year-old Dutch Shepherd who was rushed to OVC's Emergency and Critical Care Service after accidentally ingesting a potentially lethal dose of naproxen - a common over-the-counter medication - at home in early April. The veterinary team immediately induced vomiting; however, the medication had already started to be absorbed and metabolized. As a lifesaving measure, the team began therapeutic plasma exchange (TPE), which helps remove toxins from the blood circulation by removing the patient's plasma and replacing it with clean, donor plasma. Unfortunately, Perseus suffered a cardiac arrest during the detoxification procedure but was revived with cardiopulmonary resuscitation (CPR). Due to the combination of toxins in his body and a lack of oxygen to his brain during cardiac arrest, Perseus suffered debilitating neurological complications, blindness, internal bleeding and life-threatening seizures. He spent several weeks in OVC's Intensive Care Unit, where the team of specialists and nursing staff monitored him carefully and cared for all his body's needs. Thankfully, his seizures and organ functions improved with time and treatment.



A veterinarian monitors Perseus' vital signs in the ICU. Photo credit: Katie Duncan



Perseus and his owner Carina. Photo credit: Katie Duncan

With daily physiotherapy and specialized care, he began to regain strength; however, the medical team could not predict whether Perseus would be able to see or walk independently again. He returned home to his loving owner, Carina Marquez Mewasingh, who continued to provide daily care and physiotherapy. At home, Perseus found comfort in his brother, Milo, as he struggled to adjust to his loss of vision and mobility. With time and assistance during walks, Perseus regained his balance and normal neurological functions. Although he only regained partial vision, Perseus has otherwise made a remarkable recovery and is back to enjoying life.

“I am thankful to the OVC doctors who cared for Perseus,” says Carina. “They took such great care of him. We are also grateful for the support from friends, family and members of our church. I was told by the doctors that it’s a miracle Perseus survived. While he can’t play catch like he used to, he still enjoys chasing Milo and playing with his toys. He’s a very happy dog with so much personality!”

Photo credit: Carina Mewasingh

Mavryk



Mavryk is examined by the veterinary care team in OVC's ICU. Photo credit: Katie Duncan

Mavryk, a two-year-old French Bulldog, presented to the OVC Emergency and Critical Care Service in April after experiencing a sudden inability to walk properly. He displayed signs of hindlimb incoordination. His neck was stiff, and he was in pain in both his neck and mid-spine region.

Following neurological assessment, Mavryk was diagnosed with suspect disc disease with compression of his spinal cord and nerves, a common problem among bulldogs. Based on Mavryk's continued ability to support his weight and walk, Mavryk returned home with medication to manage his spinal pain for a period of observation and recovery prior to exploring further diagnostic tests, such as MRI. Under the loving care of his owner, Nicole Lilley, Mavryk began to show signs of improvement. A neurological assessment the following week showed improvements in both his pain and mobility, and he has since made a full recovery.

"Thanks to the amazing staff, Mavryk is doing well and back to his normal self," says Nicole. "We just celebrated his third birthday, and I can't thank them enough."

Brindley



Brindley's care team discusses his treatment plan. Photo credit: Katie Duncan

Brindley, a two-year-old Golden Retriever, was hit by a car in April. He was brought to OVC's Intensive Care Unit to repair his front legs, which were broken during the accident. Brindley's surgery was complex and required implants and pins to stabilize his shattered bones. During recovery, Brindley developed a serious infection in his left leg, which required intensive antibiotic treatment and wound management. Brindley was discharged after two weeks in the hospital but was soon struggling to walk. X-rays revealed that the stabilizing implant in his left leg had failed, likely due to a bone infection. With the risk of infection spreading quickly, and the damage to his bone from the infection despite local and systemic antibiotics, it was necessary to amputate Brindley's left leg. Within days of his amputation, Brindley was able to return home. He adapted remarkably well to the amputation, and his right leg fracture has healed completely.

Sadly, Brindley passed away unexpectedly in October. His family is grateful for the extra time they had with their beloved companion.

"When Brindley got hit, we were devastated and in shock," says Brindley's owner Melanie Porter. "When we learned they had space for him in the ICU it was such a relief. The OVC staff supported both him and us through one of the hardest periods in our lives."

"From the moment we arrived, the care team was extremely proficient, professional, and compassionate, which in turn calmed our nerves and gave us such solace. Brindley was never just a dog to us; he was a member of our family and our daughters' best friend. We will miss him immensely and are very thankful that we had five more beautiful months with him, thanks to the team at OVC."

Oscar



Photo credit: Kaye Martin



Photo credit: Modest Maven Photography

Oscar, a one-year-old cat, was referred to OVC's Neurology Service in January after his owner noticed that he was unable to jump and was walking on his heels, known as plantigrade stance. He also showed signs of exercise-induced fatigue, sitting down after only a few steps. A comprehensive neurological exam was performed, alongside x-rays and consultation with the surgical team to rule out orthopedic conditions. Oscar's disorder was localized to the peripheral nervous system, outside of the brain and spinal cord. Electromyography, which records electrical activity in muscles, showed spontaneous activity in several muscles, and bloodwork revealed high levels of an enzyme that might indicate myopathy, or a muscle disease. Subsequent muscle biopsies were performed to better understand the nature of Oscar's myopathy, and the results suggested he may have a degenerative condition. While awaiting clearance to begin steroid therapy, Oscar suddenly began to improve – running



OVC's neurology team examines Oscar.
Photo credit: Katie Duncan

and jumping and seeming more comfortable. His owner, Kaye Martin, agreed to delay steroid treatment and is now monitoring Oscar closely at home, where he is nearly back to his normal self.

"We are so very thankful for the team at OVC for taking care of Oscar," says Kaye. "They were very thorough and explained every step they took in caring for him. They handled him with TLC even during his most 'spicy' moments. We knew he was in very good hands."

Maximus



A veterinarian monitors Maximus' breathing and heart rate in the ICU. Photo credit: Katie Duncan

In November 2022, Maximus, a two-year-old Flat Coated Retriever, developed a cough and a fever. X-rays showed unusual patterns in his left lung and despite receiving antibiotics, his breathing worsened and he lost interest in food. He was admitted to OVC's Emergency and Critical Care Service for further testing. A repeat x-ray revealed worsening patterns in his lung. He received IV fluids for dehydration and medications to soothe his stomach and reduce inflammation in his lung, while the veterinary team ruled out any heart abnormalities or fluid accumulation that might be contributing to his condition. Maximus was diagnosed with pneumonia. His breathing and heart activity were monitored carefully while he received a potent course of antibiotics and other medications to manage his symptoms. With improvement a few days later, Maximus returned home to the care of his concerned owners, Nigel and Sharon Kay.

In April, Nigel and Sharon were worried when Maximus again showed similar symptoms. Maximus returned to OVC for testing and hospitalization to manage the illness, a milder recurrence of pneumonia. Thanks to his owners' quick actions, Maximus received prompt attention and returned home after a short course of treatment.

"We were very relieved when Maximus was referred to OVC by our local vet due to the special respiratory care he required," says Nigel Kay. "We knew he was in a place where he would receive the best possible care. When he exhibited similar symptoms several months later, we immediately took him back to OVC again knowing that he was in good hands to prevent the pneumonia from progressing to what happened the first time. We are very grateful to the staff at OVC for their expert care and kindness." 🐾



Scan the QR code to learn more about the new critical care and specialty services facilities at the Ontario Veterinary College's Health Sciences Centre.



Student veterinarians in OVC's Doctor of Veterinary Medicine program receive hands-on clinical training to build the Day 1 competencies that will allow them to meet the veterinary profession's complex and evolving needs after graduation. Photo credit: Ontario Veterinary College.

MORE VETS FOR MORE PETS: Expanding Veterinary Training in Ontario

In recent years, many pet owners across Ontario have been faced with a growing concern affecting the companion animals in their lives; it has become increasingly difficult to access veterinary care.

The veterinary shortage is not new; in May 2020, the Canadian Veterinary Medical Association (CVMA) published a study reporting that Canada's pet population had been growing for several years, particularly among dogs and cats. However, the systemic shortage of veterinarians intensified during the COVID-19 pandemic when pet ownership spiked among the millions of Canadians who suddenly found themselves spending more time at home.

As more and more people welcomed pets into their families, the already-strained veterinary profession was unable to keep up with the increased demand for its services. New Canadian veterinarians are graduating at a rate that is approximately equal to those retiring from the profession, and a survey within the CVMA report found that almost 20 percent of clinics had been forced to scale back their hours due to a shortage of staff to fill shifts.

This means that, amidst the excitement of welcoming a new companion into their homes, many pet owners have been surprised to find that their local veterinary clinics were not accepting new patients or that the wait time for appointments stretched from weeks to months.

As pressures on veterinary healthcare teams continue to grow, referral rates remain high as veterinarians are faced with increasingly complex cases. This has led to a rise in burnout among those working in veterinary medicine - a multi-faceted challenge that reflects not only the burgeoning caseloads but also the shortage's impact on veterinarians' mental health and well-being.

The message from the veterinary community is very clear: we need to train more veterinarians, and quickly.

The Ontario Veterinary College (OVC) at the University of Guelph has been at the forefront of veterinary medicine since its founding in 1862; it consistently ranks within the top 10 veterinary schools worldwide, and trains nearly one-third of all Canadian-educated veterinarians. The OVC Health Sciences Centre on the University of Guelph's campus - which operates as a tertiary referral hospital for more than 20,000 companion animals and large animals within the region each year - also functions as a state-of-the-art training ground for the next generation of veterinarians in OVC's Doctor of Veterinary Medicine (DVM) program.

The DVM program is highly competitive. For decades, OVC has filled its coveted seats from a growing number of highly qualified applicants every year. However, veterinary medicine programs are extraordinarily costly to run, and for more than 30 years, OVC has been unable to expand its class size beyond its existing 120 seats. As Ontario's only veterinary college, OVC recognizes its responsibility to train and prepare veterinarians who are equipped to deal with the realities of the industry today.

Recognizing that adversity and opportunity breed innovation, the college has partnered with Lakehead University on a creative solution that will allow OVC to significantly expand its veterinary training capacity. The newly announced Collaborative Doctor of Veterinary Medicine Program, which has received seed funding from the Province of Ontario, will welcome aspiring veterinarians from northern Ontario - where access to care is most strained and the profession's challenges are most acutely felt - to complete their first two years of study on Lakehead's campus before joining the Guelph-based DVM cohort for their remaining two years, including their final year of hands-on clinical training.

To accommodate the expanded DVM class size, OVC will work with partners and pet lovers, including supporters of OVC Pet Trust, to invest in new medical and surgical training facilities where student veterinarians will practice their clinical skills and build the competencies - and the confidence - to treat patients with increasingly complex needs. The new OVC Medical and Surgical Learning Centre will house induction, recovery, and surgical suites, learning hubs and libraries, exam rooms, kennels, and dog runs.

"The new Medical and Surgical Learning Centre will greatly expand the opportunities for our students to train and hone their skills under controlled conditions with supervision," says Dr. Joanne Hewson, OVC's Associate Dean, Students and Academic. "With enhanced mentorship and practice of these medical and surgical skills, OVC's student veterinarians will perform more confidently on rotation in our hospitals, in their clinical placements, and as new practitioners following graduation."

The result will be better and more accessible veterinary care in more places for more pets. 🐾



GETTING TO KNOW...

Dr. Xiu Ting Yiew

Assistant Professor, Emergency & Critical Care (ECC)
Specialist
Department of Clinical Studies
Ontario Veterinary College (OVC)
University of Guelph

Why did you pursue a career in veterinary medicine and what prompted you to specialize in emergency medicine and critical care?

I grew up with all kinds of animals – rabbits, cats, terrapins, hamsters, Guinea pigs, dogs, sugar gliders, etc. I don't remember a time without pets. My home is known as a mini zoo; when someone finds an injured or orphaned animal, they bring it to me and my family grows larger. One day, my cat came home howling in distress. Seeing him in this condition yet being completely helpless (I later learned that he was unable to urinate, a medical emergency known as urinary tract obstruction) and watching my family veterinarian stabilize him with intravenous fluid therapy and urinary catheterization spurred my interest in veterinary medicine. I almost gave up veterinary medicine for food science and technology due to a severe cat allergy, but I powered through with antihistamines and am glad that I did! Interestingly, my cat allergies have improved since I moved to Canada.

Originally, I wanted to become an equine veterinarian; however, I felt a strong calling to teach, so I joined the university teaching hospital to seek opportunities in academia after graduation. At that time, only companion animal positions were available, but I discovered that horses and small animals are similar

in many ways. I became increasingly excited by the adrenaline rush associated with a variety of emergent situations. Now, I am very happy to be working on my toes as a jack of all trades in emergency medicine.

What would you like pet owners to know about the field of emergency medicine and critical care?

Emergency and critical care is a high-stress, intimidating, rapid-response type of medicine requiring quick intervention decisions. In the moment, we may not have all the answers, but we handle stress and emotions well, with a keen eye for details and trouble, and we are quick to spring into action. We can't always foresee outcomes, but we take things day-by-day and provide patients with the best possible care to help them weather the critical phase.

What do you enjoy most about teaching?

During veterinary school, I discovered that knowledge sharing not only positively impacts the lives of others but also deepens my own understanding and engrains what I have learned. Long-term learning is more than memorization; it involves grasping fundamental concepts, critical thinking, and the ability to apply knowledge or ideas to new or different contexts. Through my interactions with students over the years, I realized that they often possess knowledge as disconnected pieces of information and struggle with the fluent interpretation or application of knowledge. The most fulfilling part about teaching is when students form these connections and I witness that sweet A-HA! moment. My aspiration as an educator is to inspire and foster a growth mindset so that students develop sustained intellectual curiosity, self-motivation, insatiable hunger and creativity to continue the rest of their journey on their own.

Are you currently working on any research projects, and if so, what are they?

My clinical and research interests include responsible fluid stewardship, bedside ultrasonography, minimally invasive bedside monitoring, and advanced blood purification techniques. Since 2017, I have been working alongside Dr. Shane Bateman with support from OVC Pet Trust to understand how cats handle intravenous fluids under various conditions, with an aim to provide evidence-based recommendations to promote safer fluid therapy practices. I have also been collaborating with Dr. Allan Willms from the University of Guelph's Department of Mathematics and Statistics to develop a non-invasive three-dimensional bladder volume estimation technique to monitor urine output using bedside ultrasonography in cats. This year, I am exploring the utility of a minimally invasive bedside device that can monitor blood hemoglobin levels and guide blood transfusion decisions for patients. Recently, I also embarked on a retrospective study exploring the factors that affect patients' responses to potassium (electrolyte) supplementation in the ICU and how we can supplement potassium safely and effectively.



Yiew examines ICU patient Mo. Photo credit: Katie Duncan

What do the new ICU facilities at OVC mean to you? What benefits will they provide for your patients and OVC team members?

The new space - with an open and versatile critical bay, quiet cat room, well-ventilated dog runs, central nursing station with dedicated workstations, and clinicians' team room - has been a game changer. Previously, our workstation was sandwiched between the ER and ICU, where we were subjected to excessive sensory stimulation. In the new facility, stress levels have decreased noticeably. We also note significant improvements in the anxiety level, behaviour, and demeanor of our patients in the new cat room and dog runs. The large windows in the team room allow for close monitoring of patients while having a quiet space for rounds, discussions and work. I am grateful to the generous OVC Pet Trust donors who enabled this state-of-the-art, futuristic facility.

How do you prioritize your own well-being and development while working in a fast-paced setting each day?

When scheduled on clinics, I try to complete tasks at work and avoid bringing them home so that I have protected time and space at home to unwind. In addition, I often treat myself to a hearty meal after a long day at work. Over the weekend or when scheduled off clinics, I catch up with friends and colleagues outside of work over some good food. Lastly, having a pet at home helps me tremendously to de-stress as well.

What does the human-animal bond mean to you? How do animals inspire you?

Animals inspire me to be strong and resilient, while also being gentle, trusting and vulnerable.

Do you have any passion projects outside of work?

As an early career faculty member, I am channeling most of my energy and passion to OVC but am starting to explore international teaching efforts.

Do you share your home with any pets?

I have one black cat, who was once my research cat sponsored by OVC Pet Trust, and who is a retired member of the OVC feline blood donor program. 🐾



Yiew checks on ICU patient Bella. Photo credit: Katie Duncan

YOUR GIFTS AT WORK

Each year, OVC Pet Trust invests more than \$600,000 in new projects and equipment that advance the health and well-being of pets.



iStock photo credit: PatCamera

CAT HEALTH

Measuring Fluid Movement in Female Cats Dr. Shane Bateman and Dr. Xiu Ting Yiew

Intravenous administration of fluids is a common practice for hospitalized patients to replenish blood or correct dehydration. In a healthy animal, any excess fluid leaves the body via urine and a small fraction is exhaled as water vapor. However, too much fluid can lead to fluid accumulation in the lungs, causing breathing difficulties or even death. Recent studies found that male cats process fluids much slower than other species, particularly under anesthesia. This new study will look at how female cats process fluids before, during, and after general anesthesia. The study aims to provide a better understanding of fluid movements in cats to aid veterinarians in developing safer and more effective fluid administration plans.

DOG HEALTH

Studying the Effects of Plasma Transfusion on Repairing the Inner Lining of Blood Vessels in Dogs Dr. Alexa Bersenas

In animals and in humans, the inner lining of blood vessels - known as the endothelial glycocalyx or EG - plays an important role in regulating blood vessel structure and triggering an inflammatory response and blood clotting during injury. Several disease processes including severe trauma and bleeding, overwhelming infection, and diabetes can damage the fragile EG, inhibiting its ability to perform those necessary functions. A transfusion of plasma — the fluid component of blood from a healthy donor delivered intravenously — has

demonstrated a restorative effect on the damaged EG in various human and animal trials. The reason behind the treatment's positive impact is still unknown. One theory suggests that plasma supplies the essential components needed to rebuild the EG. When the EG is damaged, its building blocks, like hyaluronic acid or HA, get washed into the bloodstream. In this study, researchers will measure the amount of HA in the bloodstream of canine patients already receiving plasma transfusion in the ICU (Intensive Care Unit) at OVC's Health Sciences Centre to better understand what makes this treatment work.

Using Fluorescent Dyes to Guide Liver Cancer Surgeries in Dogs Dr. Brigitte Brisson

Surgeons at OVC's Health Sciences Centre perform approximately 100 liver and spleen surgeries each year to remove cancerous tumours from canine patients. Surgery is the cornerstone of treatment and complete removal of the primary tumour is essential to reduce the rate of recurrence or spread to other organs. To help guide the removal of liver tumours in humans, surgeons use fluorescent or glow-in-the-dark guided imaging to help identify the tumour edges and liver metastasis from tumours to other organs — but this technology is new in veterinary medicine. To perform this procedure, a safe, non-toxic, fluorescent dye is administered in a vein before surgery. This dye naturally concentrates in the liver before exiting the body through the bile and the intestines. Normal liver cells clear the dye within a few hours after injection, but because tumour cells cannot clear the dye appropriately, they glow for long periods of time. In surgery, fluorescence or 'glow' is observed using a special camera to identify tumours and help the surgeon determine where to cut to obtain complete tumour removal. The new technique will

advance veterinary medicine and help improve surgery outcomes for canine patients.

Testing the Use of Pill-Sized Camera Capsules to Examine the Gut of Small Dogs Dr. Alice Defarges

Currently, pill-sized capsules carrying tiny cameras are used to help veterinarians diagnose bowel disease or locate the source of gut bleeding in dogs over 7kg. The vitamin-sized capsules take up to 20 pictures per second for up to 20 hours until the battery dies and the dog naturally excretes the capsule in their stool. A new study seeks to determine if using the camera capsules is safe on smaller dogs and rule out the possibility of the capsule getting stuck in the stomach or gut. To safely test the procedure, dogs between 3 to 7 kg will be given a dummy capsule (without a camera) of the same size that naturally dissolves after 30 hours. If the dummy capsule is excreted naturally, it will confirm the safety of the procedure on smaller dogs and the process will be repeated with an actual camera capsule. Otherwise, the capsule will dissolve on its own and dogs will be monitored for any obstruction or injury. This test method did not result in any complications in human trials; therefore, no complications are expected in dogs either.

Developing a Better Understanding of What Causes Skin Rashes in Dogs Dr. Khalil Karimi

Atopic dermatitis, commonly known as a rash, is a skin allergy that affects many species. Recent research has shown that *Staphylococcus* bacteria is a key factor in causing skin flare-ups in dogs. Upon encountering an allergen, the body's white blood cells, known as leukocytes, are activated to produce an immune response. Using a canine blood sample cultured in a lab, scientists will further study how

the leukocytes respond to Staphylococcus bacteria to identify potential future therapies for this disease.

Testing a New Combination Therapy to Treat Canine Oral Melanoma

Dr. Anthony Mutsaers

Oral melanoma is a common and highly aggressive type of canine cancer that originates in the soft tissues of the mouth and spreads rapidly. Even after surgically removing the tumours and treating the affected areas with radiation and/or chemotherapy, the prognosis is guarded and difficult to determine. Signaling pathways are the channels used by cells to communicate with each other to carry out their functions. In cancer patients, these pathways are often genetically altered and contribute to cancer progression. Recent studies have explored methods to block one such signaling pathway known as mTOR, but this treatment alone did not produce the desired results. The current study will explore treating melanoma cells in the lab with a combination of signaling pathway blockers and a chemotherapy drug. If proven successful, this new combination therapy could help improve treatment outcomes for canine patients suffering from melanoma.

Putting a Glow-In-The-Dark Target on Lung Cancer

Dr. Michelle Oblak and Dr. Jim Petrik

Once thought to be a rare canine cancer, lung cancer in dogs is on the rise. This can be attributed to longer lifespans and advancements in veterinary imaging, making it easier for veterinarians to diagnose this disease. Lung cancer treatment involves surgically removing the tumours, but relying on the surgeon's ability to see the edges of the tumour with the naked eye alone is not always enough. During cancer surgery, the extent of the cancer may not always be obvious and that can result in not enough or too much tissue and lymph nodes being removed. This research study will look at how indocyanine green (ICG) – a non-toxic glow-in-the-dark dye – reacts with lung cancer cell receptors, which are proteins on the cell surface that are unique for each type of cancer. Being able to accurately see the glowing cancer edges during surgery will reduce the need for follow-up surgeries and will help speed up patient recovery.

Assessing the Unique Molecular Fingerprint of Osteosarcoma in Dogs

Dr. Courtney Schott

The use of molecular markers to predict outcomes and guide treatment decisions is becoming more commonplace for managing patient care in veterinary oncology. Osteosarcoma is a highly aggressive bone cancer that often occurs in older large-breed dogs and is the same cancer found in human adolescents. The researchers in this study will assess canine osteosarcoma tumour samples to investigate why this cancer spreads quickly in most patients but

not in other rare patients. To do this, researchers will look for specific molecular markers that can be used to better predict treatment outcomes and develop new treatment plans to improve the quality of life for patients diagnosed with this aggressive cancer.

Why is Osteosarcoma Resistant to Chemotherapy Treatments?

Dr. Courtney Schott

Osteosarcoma is the most common type of bone cancer in dogs. This type of cancer spreads rapidly from the original site and is very difficult to treat. In nine out of 10 canine patients, osteosarcoma will spread to other parts of the body before it is diagnosed. Even with amputation (to remove the primary tumour) and subsequent chemotherapy the prognosis is poor. Yet, the treatment protocol for osteosarcoma has not changed in the last four decades. Osteosarcoma cells are resistant to chemotherapy treatment and continue to multiply and spread but how exactly the cancer cells manage to survive is unknown. This project will characterize the genetic features of osteosarcoma cells that are resistant to standard chemotherapy drugs used to treat osteosarcoma to better understand why this cancer is so resistant to treatment.

Improving Diagnostic Tools to Better Anticipate Treatment Outcomes in Canine Osteosarcoma Patients

Dr. Courtney Schott

Dogs with osteosarcoma, a common and very aggressive type of bone cancer, typically succumb to the disease within a year of diagnosis. Yet, there are rare cases of dogs who live beyond the one-year milestone after receiving standardized aggressive treatment, involving amputation and chemotherapy. Currently, there is no way to predict which patients will respond to the treatment protocol and which will not. This makes it difficult for owners and oncologists to make treatment and quality-of-life decisions. The researchers in this study are working on a diagnostic tool that will help determine the likelihood of a positive response to the treatment protocol, providing a resource for oncologists and pet owners to help steer patient care decisions.

Using miRNA to Help Diagnose Hemangiosarcoma in Dogs

Dr. Geoffrey Wood

Hemangiosarcoma (HSA) is an aggressive form of cancer, common in older dogs. It originates in the lining of the blood vessels and spreads rapidly to other organs, most commonly to the spleen where the tumours form lumps or masses. If the cancer is detected early enough, the entire spleen can be removed, potentially improving the patient's prognosis. However, other non-cancerous splenic masses, such as hematomas (bleeding into the tissue, like a bruise) or benign tumours can also be present in the spleen, but it can be difficult to tell them apart from

HSA, even with an ultrasound. This study will look at specific microRNA particles in blood, responsible for gene mutations that could help veterinarians distinguish HSA from the other non-cancerous splenic masses. Changes in microRNA particles may occur prior to the onset of cancer, additionally giving them the potential to be used as an early warning system for identifying HSA or even targets for preventing the disease altogether.

Exploring the Use of a New Biological Compound as Part of a Treatment Protocol for Canine Splenic Hemangiosarcoma

Dr. Paul Woods and Dr. Jim Petrik

Hemangiosarcoma (HSA) is an aggressive type of cancer, common in older dogs. It originates in the lining of blood vessels within internal organs – often in the spleen – and spreads rapidly. HSA tumours are resistant to chemotherapy treatments, which means that only 10% of patients live longer than a year after diagnosis. HSA tumours develop their own network of tangled blood vessels, making it difficult for chemotherapy treatments to reach the affected site. A new biological compound developed at OVC is designed to prune back the tangled HSA blood vessels, creating an unobstructed pathway for chemotherapy treatments. The current research study will evaluate the distribution and safety of the compound in a group of healthy dogs. The findings will be used to inform future studies on dogs with active cases of hemangiosarcoma and other cancers.

COMPANION ANIMAL HEALTH

Improving Team-based Patient Care in Veterinary Hospitals

Dr. Jason Coe and Dr. Natasha Janke

Recent advancements in veterinary medicine have increased the number of treatment options available to patients. As a result, the treatment protocols have become significantly more complex, often involving a team of veterinary professionals in the treatment of one patient. Pet owners' expectations about the quality of veterinary care have increased as well. These changes raise the need for closer collaboration within veterinary teams. Sub-optimal teamwork, particularly team communication, has been identified as a major cause of medical errors impacting patient health. Yet, evidence-based approaches to the delivery of team-based veterinary care are scarce. This research study will look at current approaches in veterinary hospitals for delivering team-based veterinary medicine, explore team members' perspectives on procedure protocols, and evaluate existing systems and processes to produce actionable solutions that will improve team-based patient care. 🐾



SIX DEGREES OF SEPARATION

by Suzi Beber



Suzi Beber founded The Smiling Blue Skies® Cancer Fund in 2001 after losing her Golden Retriever, Blues, to lymphoma. To honour his memory, and in gratitude for the care he received at OVC, Smiling Blue Skies has raised more than \$3 million to support OVC Pet Trust's quest to find more and better ways to deal with canine cancer.

In photo: The attendees of the 20th Annual Smiling Blue Skies Walk for Canine Cancer in Calgary, Alberta. Photo provided by Avey Christiansen.

Memories from Coast to Coast

Maya Angelou said, "I have found that among its other benefits, giving liberates the soul of the giver."

An amazing era ended on May 7, 2023, when Calgary held its final Smiling Blue Skies Walk for Canine Cancer. Imagine a brightly coloured THANK YOU banner with flashing lights and stardust, and that only provides a hint of the true "awesomeness" of the Calgary team and everything they have accomplished! While this was the 20th anniversary of the Calgary event, for the past 14 years, Mary Shillabeer and Leanne Tucker (and Carolyn Tucker too) have been at the helm. Imagine, \$47,000 was raised for 2023, but \$386,185 has been raised over the past 14 years! Thank you to everyone from coast to coast who supported Calgary for all these years!

On June 17, 2023, Tina and her team were on the other side of the country in Barrie, Ontario, raising \$5,350 at their very first golf tournament, held at Bear Creek Golf Club. Thank you so much for the community's support of this event, from sponsors to volunteers.

There have always been less than six degrees of separation between Smiling Blue Skies and the support of agility clubs across Canada. Thanks to everyone

at the summer trial hosted by Capital Comets Dog Sports on Vancouver Island, \$6,464 was raised from another year of fabulous auction tables and delicious meals. Thank you to Kathy and Carol, Cindy and Gwen, Ali and Paul, and everyone who attended the weekend of trials, making this event such a shining success.

This year's Agility Association of Canada Nationals were hosted by Wendy, Erika, and Christine, in Maxville, Ontario. The event raised \$2,605, and it was really special to see daily updates, photos of the raffle tables and Rainbow Bridge dogs, and wonderful videos of runs - sometimes coming from Sharon, whom I first met through Golden Rescue, back in the 90s. Decades later, we were hugging each other at the Nationals right here in British Columbia.

Thanks to Erin and Eromit Labs for hosting another year of Dock Diving's "Western Cup Challenge." \$7,666 was raised for Smiling Blue Skies this year! The always-amazing Tennis Ball Draw alone, with 223 tennis balls, raised \$4,460! The prizes were fantastic, and included online training courses, baskets packed with goods, and swag bags for all. Thanks to everyone who was a part of this special event.

New this year is the Canine Performance Events' Can/Am Challenge, hosted by Bay De Noc Kennel Club and Bark Avenue Remarkable K9s. With over 700 runs, 60 dogs and handlers, and - thanks to Joan Richard - auctions each day, this promises to be a very exciting time for all the participants.

We said goodbye to another amazing event at the end of October. After over a decade of spearheading special fundraising activities, Linda Sowerby and her crew held their final "Live + Sociable" evening. This year's event brought everyone in attendance back to Smiling Blue Skies' beginnings in beautiful Oakville, Ontario, at the Bronte Legion, home to our "Bronte Blues." This was an evening of great music (something for everyone) and food, and there was a terrific raffle too. \$7150 was raised during this very special "closing" event.

Your giving hearts and souls are helping ALL of us in so many ways, from funding studies and grants to clinical positions, including the coordinator position for the OVC Veterinary Biobank, which supports research that improves the lives of both the precious pets and people in our lives. Whoever thought we would cross the \$3 million threshold!

"Long live blue skies, where Hope is a kite and dreams really do come true." 🐾

"THERE WILL ALWAYS BE SMILING BLUE SKIES" smilingblueskies.com



Honour a Best Friend and Give Back to Pet Health

Did you know that you can support OVC Pet Trust through our Pet Memorial Program?

Each year we send more than 45,000 memorial letters to pet owners who have lost a pet. Gifts made in honour or in memory of a beloved pet support advancements in companion animal health at the Ontario Veterinary College.

Thank you to everyone who chooses to give back to improving and advancing companion animal health and well-being in this meaningful way.

Visit our website to learn how to make a gift at www.pettrust.ca/donate

Share Your In Memory Story

Pets leave paw prints on our hearts. Have you recently lost a beloved companion whose memory has been honoured with a gift to OVC Pet Trust?

Connect with us on social media or contact us via email to share your story.

Email: ovcpet@uoguelph.ca
facebook.com/ovcpet
twitter.com/ovcpettrust
Instagram: @ontvetcollege



PETS IN MEMORY

"What we have once enjoyed, we can never lose. All that we love deeply becomes a part of us." – Helen Keller

People who knew Ridley

often referred to him as "one in a million" (aren't all dogs?). To us, Ridley was our sweet, loyal, smart, funny, friendly, and kind boy who graced our lives for almost 11 years.

In the early years, we did all the typical obedience training with Ridley, as well as agility. We were amazed at how quickly he learned what was expected of him – once he mastered a skill, he never forgot it.

One of his favourite things to do was go on vacation – mostly to our trailer on Lake Erie – and why wouldn't he? He now had his dads' undivided attention, getting extra walks, extra popcorn (his favourite!), and extra treats. He loved relaxing on one of the reclining lawn chairs with one of his dads, where he'd sleep for hours.

In May 2020, Ridley had two seizures and was diagnosed with a frontal lobe brain tumour. His prognosis was initially poor, but fortunately, he was referred to the

Ontario Veterinary College (OVC) in Guelph where he received radiation treatments to control the growth of the tumour. For a long time, his seizures stopped entirely.

Having a cancer diagnosis was not new to us as Bruce is a cancer survivor himself, but we never imagined how much we would learn from Ridley's journey about being present and living in the moment. Ridley's treatments occurred during the first lockdown of the COVID-19 pandemic, when only staff were permitted inside the building. He was truly a brave boy as he followed staff through the doors, but he always turned to see if we were coming with him. We always knew he was in good hands with the OVC team.

Unfortunately, Ridley's journey was cut short due to kidney failure on March 1, 2023. While we always expected we would have to make decisions around quality of life as the brain tumour grew and the seizures returned, we never anticipated to suddenly lose him to renal

failure. His last good day was a cold but sunny one in February. We were heading up to the trailer, but before we got in the car, Ridley played in the field, tugging on his lead like he always did, barking, jumping and just being silly.

Ridley taught us to live in the moment, no matter how big or small. To be present and enjoy every minute of it. He loved going for puppuccinos, bugging his kitty siblings Dexter and Dax, and enjoying all the smells and sounds on his walks. He taught us that every moment was precious and to make the most of it.

We are forever thankful to OVC for the three extra (seizure-free) years we got with Ridley. We will always remember the kindness they showed him.

We can't wait for the reunion at the Rainbow Bridge someday and will love you forever, Rids.

Harry Ennis & Bruce MacLeod

PET TRUST PALS

Connect with OVC Pet Trust on social media to share your stories and photos:
 Facebook (facebook.com/ovcpet), Twitter (@OVCPetTrust) and Instagram (@OVCPetTrust).



1. In August 2023, Ren's Pets and their customers raised more than \$50,000 during Dogust to advance companion animal health through OVC Pet Trust. Thank you for all your incredible support! Pictured left to right are: OVC Pet Trust Administrative Assistant Sandra Valeriotte, OVC Pet Trust Manager Alison McLaren, OVC Dean Jeff Wichtel, Ren's CEO Scott Arsenault, Ren's Vice President of Retail Operations Anna McCann, and Ren's Customer Acquisition Specialist Claudia Gieruszynska.
2. The 20th annual Smiling Blue Skies Walk for Canine Cancer in Calgary, Alberta raised \$47,000 in May 2023. Organizers Mary Shillabeer, Leanne Tucker, and Carolyn Tucker (pictured left to right, above) have been at the helm of this event for the past 14 years. Photo provided by Avey Christiansen.
3. The Tennis Ball Draw at Dock Diving's 2023 Western Cup Challenge (with 223 tennis balls!) raised almost \$4,500 for OVC Pet Trust. Thank you to hosts Erin and Eromit Labs!
4. In July 2023, the Honourable Elizabeth Dowdeswell, Ontario's former Lieutenant Governor, visited the OVC Health Sciences Centre for a tour and discussion about innovation in health research. Pictured left to right are: Dr. Tarek Saleh, University of Guelph President Dr. Charlotte Yates, the Honourable Elizabeth Dowdeswell, Dr. Michelle Oblak, Dr. Jim Petrik, and Dr. Shayan Sharif.

**WATCH OUR VIDEO TO SEE
 HOW OVC PET TRUST IMPACTS
 COMPANION ANIMAL HEALTH**



Or find the video online at uoguel.ph/petswelove.

CANADA POST - POSTAGE PAID PUBLICATIONS MAIL 40064673

IF UNDELIVERED, PLEASE RETURN TO SENDER:
 Ontario Veterinary College, University of Guelph
 50 Stone Road East, Guelph, Ontario Canada N1G 2W1

Attention: OVC Pet Trust,
 OVC Main Building, Dean's Office

OVC PET TRUST

OVC Pet Trust is part of the University of Guelph, a registered charity. You can visit our website to support companion animal health at www.pettrust.ca.

The University of Guelph
 charitable registration number:
 10816 1829 RR 0001

WWW.PETTRUST.CA