

the crest



THE RESEARCH, TEACHING AND HEALTH CARE MAGAZINE OF THE ONTARIO VETERINARY COLLEGE



BEYOND the BANDAGE

UNIVERSITY
of GUELPH

IMPROVE LIFE.

A transformational new program at the University of Guelph's Ontario Veterinary College, the Kim and Stu Lang Community Healthcare Partnership Program, will improve the health of animals through more accessible care.

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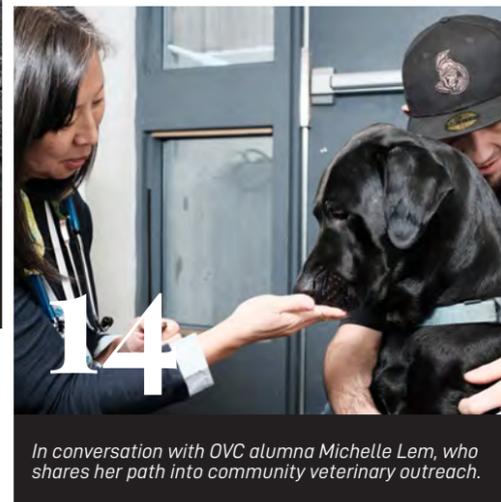
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Contributing to caring and community, a vital part of the student journey.



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The Crest is the research, teaching and health care magazine of the University of Guelph's Ontario Veterinary College.

crest magazine

The Crest is published two times per year by OVC for alumni, friends and partners of the college to share our collective strengths in evidence-based discovery, veterinary expertise and educating the next generation of leaders in animal, human and environmental health.

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From the Dean

Photo credit: Dean Palmer



Last fall we shared news of a truly transformative gift to OVC supporting a new program that will shape the future of veterinary education in

Canada and ultimately improve the lives of animals through more accessible health care.

The gift will create the Kim and Stu Lang Community Healthcare Partnership Program (CHPP), the first academic program of its kind in Canada.

This program will impact our training of the next generation of veterinary leaders, expand opportunities for student experiential learning in community medicine, enhance our community partnerships, promote a One Health approach to the provision of health services for vulnerable animals and those who care for them, increase our research capacity to inform best practices and policy and ultimately influence societal change.

We've had an abundance of positive news over the past year, in research, teaching and community service, including a new Animal Health Partners Research Chair in Veterinary Medical Innovation, filled by veterinary oncology surgeon Dr. Michelle Oblak, which recognizes our collective strengths in comparative, translational and clinical medicine.

I'm extremely proud of OVC's rich contributions to improve the health of animals, people and the world we live in. I look forward to sharing stories about the impact that these programs have, as well as the continuing innovative work our faculty, staff and students continue to pursue each day.

Dr. Jeffrey Wichtel, BVSc, PhD, Dip. ACT
Professor and Dean, Ontario Veterinary College

OVC RANKS FIRST IN CANADA, TOP FIVE WORLDWIDE

Photo credit: Kathryn Arbon, OVC 2022



The Ontario Veterinary College is once again celebrating a top ten ranking among veterinary schools in the world through the Quacquarelli Symonds (QS) university rankings. The QS World University Rankings by Subject 2020 ranked OVC first in Canada, third in North America and fifth worldwide. OVC has consistently placed in the top 10 since QS first included veterinary science in their rankings in 2015. The QS ranking methodology focuses on key areas of academic reputation, research impact and the desirability of graduates by employers. The most comprehensive global overview by discipline of higher education, QS looked at some 1,300 universities in 83 locations.



Photo credit: Karen Mantel

OVC APPOINTS EXECUTIVE DIRECTOR, STRATEGY AND PLANNING

The Ontario Veterinary College (OVC) has appointed Ilya Bogorad to the new position of Executive Director, Strategy and Planning. He joined OVC on August 12, 2019.

In the Executive Director role, Bogorad works closely with all units at the University of Guelph's OVC, including the four academic departments, the Office of the Dean and the Health Sciences Centre to ensure strong decision support, optimal resource utilization, project management and short- and long-term planning, ensuring sustainability and achieving the goals and vision of the college.

"The Executive Director will be an integral position on the Ontario Veterinary College's leadership team, promoting the sustainability and growth of the college and its programs," says OVC dean Jeffrey Wichtel. "Ilya's senior administrative experience in a number of prestigious health sciences organizations will serve him well at OVC."

In addition to an MBA (Finance) from the Rotman School of Management, Bogorad brings leadership experience focused on strategic planning, resource optimization, financial management and health services administration.

"It is an absolute honour to be joining the OVC, one of the top veterinary schools in the world, to help shape and realize its strategic goals," says Ilya.

His most recent appointments have included the positions of Executive Director of IntegraMed Fertility, Managing Director of Mount Sinai Fertility and Director of Corporate Planning at the Sinai Health System. He also served in a leadership role at the London Health Sciences Centre, one of Canada's largest teaching hospitals.

Open access means better antibiotic stewardship

New tools will help both doctors and veterinarians better understand antibiotic prescribing patterns

and improve their prescribing practices by providing them with tailored, regional feedback."

Here's how the pilot study will work. After inputting their prescription records for three months, participants receive a report on their antibiotic prescription writing – specifically, how their activity compares to their

The University of Guelph's Ontario Veterinary College (OVC) is leading the charge globally in antibiotic stewardship as the central hub for the veterinary component of a new antibiotic stewardship platform.

The website, Open Stewardship[www.openasp.org], will serve as an access point for veterinarians and primary care doctors to better understand their prescribing patterns.

Open Stewardship is currently in use by pilot groups of community-based doctors in Canada and Israel. Pilot groups of veterinarians in both countries will begin using the platform in winter 2020. (Interested veterinarians can learn more at www.mathepilab.org/open).

This information will shed light on local antibiotic use patterns and such knowledge will be helpful in trying to reduce antibiotic resistance. It will promote appropriate antibiotic prescribing among medical practitioners by using individual feedback and benchmarking of their prescribing practices.

This process in which feedback drives change has been successful in previous human initiatives and Prof. Amy Greer and postdoctoral fellow Dr. Kamal Acharya from OVC's Department of Population Medicine, are hoping that it will be successful in the veterinary world as well. Greer is a key member of this international initiative along with collaborators with the University of Toronto, Public Health Agency of Sweden and Ben-Gurion University in Israel.

"Antibiotic resistance is a rising global concern for public health," says Greer. "The ultimate goal for this tool is to empower medical professionals from any country, looking at any species, to understand

peers (such as other doctors in the practice) and where they rank. Feedback reports also include information on clinical best practice guidelines, including appropriate dosages and context-specific guidelines.

Overall, the report will give users an indication of where they fall on the prescribing spectrum so that they can make appropriate changes if necessary, and give researchers an idea of whether there are regional and country-specific patterns influencing prescribing.

"Antibiotics are used in both animals and people and so all medical professionals should be reflecting on their prescribing habits as a way to help to reduce global antibiotic resistance," says Greer. "This research uses a One Health approach because we understand that humans, animals and the environment all play a role in the occurrence of antibiotic resistance. It's important to improve prescribing across all sectors and to support one another."

Interested medical practices (both human and veterinary) will be able to use the online platform once the study intervention trials are complete and the website platform becomes public, likely in 2021. Although the platform will be public, medical practices will remain anonymous while using the website tool and still receive individual feedback. Everyone will be able to view geographic patterns.

"We don't want to improve antimicrobial stewardship top-down," says Greer. "There is so much value in local context and this new website allows tailored feedback based on region and/or practice group. There's been a lot of supporting research saying that direct

feedback helps facilitate change – we hope that by making Open Stewardship open access, medical practices will elect to use it to deliver stewardship interventions to their

members in order to improve appropriate prescribing."

Collaborators on this international initiative include Drs. Derek MacFadden and David Fisman from the University of Toronto, Drs. Sonja Lofmark and Annette Huth from the Public Health Agency of Sweden, and Drs. Nadav Davidovitch and Moriah Ellen from Ben-Gurion University in Israel.

Funding for this research is provided by the Joint Programming Initiative in Antimicrobial Resistance, The Canadian Institutes for Health Research, The Swedish Research Council and the Israel Ministry of Health.

CORONAVIRUS COVID-19

OVC EXPERTS CONTRIBUTING TO COVID-19 FIGHT

Ontario Veterinary College experts are sharing their expertise in the media and through new research during the COVID-19 pandemic.

Zoonotic disease expert, Prof. Scott Weese, director of the U of G's Centre for Public Health and Zoonoses, has spoken to national and international media outlets discussing how disease can spread between animals and people and how to care for household pets during the pandemic. Prof. Amy Greer, Canada Research Chair in Population Disease Modelling, has also spoken to media about global COVID-19 outbreaks and efforts to control the spread of the coronavirus. Greer is using disease transmission models to help the federal government assess potential spread of COVID-19. In other media, including CBC radio and television, Prof. Shayan Sharif, an immunologist and Associate Dean Research and Graduate Studies, discussed a research paper he co-authored with a team of U of G computer scientists and veterinary researchers on the use of Twitter to detect and predict the spread of infectious disease outbreaks. In a co-authored column in the Toronto Star, U of G Prof. Glen Pyle, Department of Biomedical Sciences, explained why those with existing conditions like heart disease, diabetes and hypertension are at higher risk of serious illness and death from COVID-19 infection. Pyle is also a provincial lead for COVID-19 Resources Canada, a hub to resources and expertise.

Weese and Greer are also contributing to research projects aimed at addressing the coronavirus outbreak. Weese is part of a research project that will investigate the global management of COVID-19 using the "One Health" approach in which human and animal health experts collaborate to manage infectious disease. In another project, Greer will use math and statistical

modelling to forecast the near-term course of the epidemic and will build simulations to help guide Canadian health agencies in efforts to limit the spread of the virus.

Greer also is working with epidemiology colleagues from the University of Toronto's school of public health on an online dashboard called COVID-19 in Canada that illustrates the spread of COVID-19 across the country. Greer's team of graduate students are helping to gather data from across the country for the dashboard.

In another study, Weese is working with Pathobiology colleague Prof. Dorothee Bienzle to examine what risk COVID-19 in humans poses to their pets and why some animals become infected while others do not. The study includes cats, dogs or ferrets in which at least one household member has symptoms consistent with COVID-19 or has had a positive test result.

Pathobiology professors Sarah Wootton, Byram Bridle and Leonardo Susta are utilizing their expertise in virology and immunology on a highly collaborative project to develop two different viral vectored vaccine platforms against COVID-19. Once they optimize a prime-boost vaccination strategy that induces robust mucosal immunity, these vaccines will be evaluated at the National Microbiology Laboratory in Winnipeg.

Prof. Andrew Papadopoulos, coordinator of OVC's Master of Public Health Program, is working with public health academic colleagues to provide guidance to public health authorities across Canada. He is also providing expertise to the National Collaborating Centres for Public Health to identify gaps in system knowledge and help public health agencies with operational and policy support in response to the pandemic.

OVC HEALTH SCIENCES CENTRE CHIEF MEDICAL OFFICER ANNOUNCED

Luis Gaitero, DVM, Diplomate ECVN, was recently named to the new position of Chief Medical Officer (CMO) in the Ontario Veterinary College's Health Sciences Centre. The CMO will develop, coordinate and oversee clinical service delivery in the OVC HSC working in collaboration with Stephanie Nykamp, Associate Dean, Clinical Program, the HSC administrative team and medical staff leaders. Gaitero joined the HSC Neurology Service in 2008. His specialities include neurosurgery, spinal cord trauma and neuroimaging. "The medical operations of a high-functioning veterinary referral hospital such as OVC are complex and dynamic," says Gaitero. "In an ever-changing world, it is more important than ever to have the flexibility to recognize opportunities for improvement, identify needs and continuously deliver the specialized, compassionate care that is the foundation of our unparalleled reputation here at OVC."



Photo credit: Dean Palmer



Photo credit: Karen Whyte

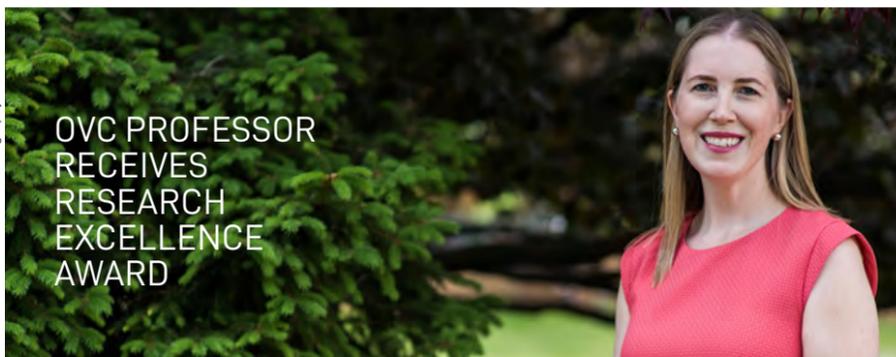
NEW DIRECTOR OF OVC WELL-BEING PROGRAMMING

The Ontario Veterinary College welcomed Prof. Andria Jones-Bitton, OVC DVM 2000, to the position of OVC Director of Well-Being Programming in February 2020. As a member of the Associate Dean, Students and Academic team, Jones-Bitton will serve a leadership role in the mapping, planning and delivery of well-being and resilience training to undergraduate DVM students, sharing resources in a collaborative manner with those supporting graduate students across all departments of the OVC and supporting the advancement of research in well-being and resilience. Jones-Bitton has a strong research platform focused on the mental health of veterinarians, veterinary students and farmers in Canada. She was recently invited as a key witness in Canada's House of Commons Standing Committee on Agriculture and Agri-food's study of farmer mental health.



OVC PROFESSOR CHAMPION FOR PRIDE VMC

A champion for the Pride VMC (Veterinary Medical Community) club at the Ontario Veterinary College (OVC) was celebrated in 2019. Prof. Andrew Peregrine, OVC's Department of Pathobiology, shared his personal story with AgRespect, a website sharing stories and experiences from the rural LGBTQ+ community. Peregrine helped set up the LGBTQ+ group for students at OVC and has been the faculty advisor for the club since its inception. "The Pride VMC club is vitally important because its members support and encourage each other," says Peregrine. "The club is especially supportive for those struggling with coming out". Recently, members have worked to open the club to the broader University of Guelph community; the group invites the entire LGBTQ+ community on the U of G campus to take part in the biggest event on the club's calendar, the Toronto Pride Parade.



OVC PROFESSOR RECEIVES RESEARCH EXCELLENCE AWARD

Ontario Veterinary College (OVC) professor Amy Greer is one of five University of Guelph researchers who recently received 2019 Research Excellence Awards from the university. Greer, a Tier 2 Canada Research Chair and professor in OVC's Department of Population Medicine, explores the introduction, spread, dynamics and control of infectious diseases in humans and animals. Her research aims to examine the effectiveness and cost-effectiveness of both public health and veterinary health interventions in order to make informed decisions regarding public health policy. The Research Excellence Awards program highlights the achievements of recently tenured faculty members and helps to raise their profile among external funding agencies. The awards are sponsored by the U of G's Office of Research and the Office of the Provost.



U OF G TEAMS PLACE FIRST AT ANIMAL WELFARE ASSESSMENT CONTEST

University of Guelph graduate and student veterinarian teams came out on top at the 19th American Veterinary Medical Association (AVMA) Animal Welfare Assessment Contest at Colorado State University. The OVC student veterinarian team and graduate student team with students from both OVC and the Ontario Agricultural College (OAC) both placed first in their respective divisions. The U of G undergraduate team finished fourth overall out of 22 teams. Teams prepared for the competition under the guidance of Profs. Ian Duncan, Professor Emeritus, OAC Department of Animal Biosciences; Derek Haley, OVC Department of Population Medicine; and Tina Widowski, OAC Department of Animal Biosciences and former Director of the U of G's Campbell Centre for the Study of Animal Welfare. Through the training and competition students gain in-depth and practical knowledge about how to scientifically assess animal welfare and communicate these findings. The contest employs comparative scenarios where students analyze the welfare of the various animals presented.

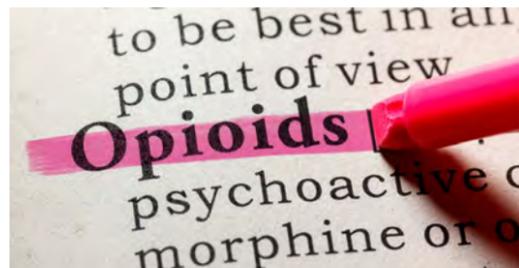


Photo credit: Karen Mantel

HILL'S SCHOLAR PROGRAM OFFERS HANDS-ON LEARNING TO STUDENT VETERINARIANS

Experiential learning is a critical component in the student veterinarians' journey and key to building student confidence and competence. Every Ontario Veterinary College student veterinarian spends time at the Hill's Pet Nutrition Primary Healthcare Centre (PHC), on the OVC campus, each year throughout their studies, culminating with a three-week small animal primary care rotation in their fourth and final year. This immersive experience allows students in their final year of training to experience all aspects of companion animal primary care practice. In the 2019-2020 academic year, OVC joined hands with Hill's Pet Nutrition to provide this experiential learning opportunity to Canadian veterinary students outside OVC's Doctor of Veterinary Medicine program and in the final year of their DVM program. Applications were recently received for the 2020-2021 academic year.

Photo credit: istock.com



OPIOIDS CAN POISON PETS AS WELL AS PEOPLE

In the first study to connect human opioid use with dogs, Ontario Veterinary College researchers have shown that smaller, younger canines that are non-neutered or live in American counties with high opioid prescription rates are at higher risk of accidental opioid poisonings. The study, with PhD candidate and lead author Mohammad Howard-Azzeh, analyzed calls to a U.S. poison control hotline for pets as part of a larger NSERC funded pet poisoning surveillance project in Prof. David Pearl's laboratory.

FROM THE VAULT

ACCESS TO VETERINARY CARE IN THE 19TH CENTURY

By the beginning of the 19th century, a vast veterinary "medical marketplace" existed for consumers to access a variety of veterinary pharmaceuticals, advice and care in what would become Canada. This veterinary medical marketplace was overwhelmingly populated by untrained practitioners, some highly skilled, but many not. As a result, a tangled mix of good and less than ideal veterinary advice and treatment for consumers existed in this period, a situation that professionalized veterinary medicine sought to remedy by the latter half of the 19th century.

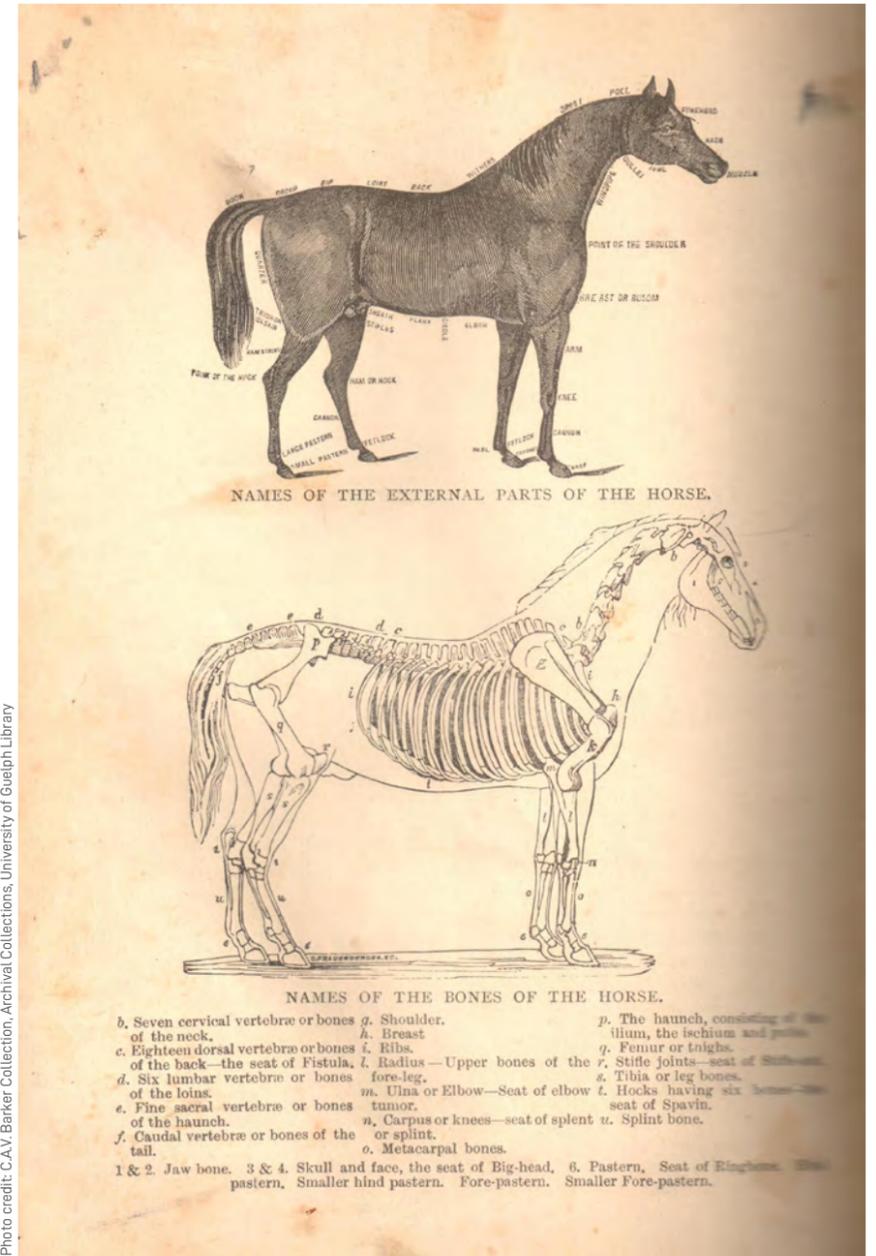
The Barker Veterinary Museum at the Ontario Veterinary College contains a variety of holdings reflecting this marketplace and the ways the general public began to access professional veterinary medicine starting in the last half of the 19th century.

The *Veterinary Adviser* was first published in 1876 in the United States by James Law, a contemporary of Andrew Smith, founder of the Ontario Veterinary College. A specific Canadian edition was first published in 1877. Law, a Scottish trained veterinarian, is a towering figure in the history of American veterinary medicine. An 1857 graduate of the Edinburgh Veterinary College, he was the first professionally-trained veterinarian to teach in the United States at Cornell University beginning in 1868. He went on to educate many early American veterinary professionals.

Law wrote this work because, in his words, it was "...especially designed to supply the need of the busy Canadian farmer who can rarely avail himself of the advice of a scientific veterinarian." Books like Law's were an important point of access to professional veterinary advice. These manuals were designed to provide farmers and others with knowledge about common issues, as well as instruction in basic veterinary care largely for horses and other livestock, though some manuals also included information about dogs. This included various diseases such as tuberculosis, pleuro-pneumonia, influenza, and glanders, a contagious zoonotic infectious disease that occurs primarily in horses, mules, and donkeys, as well as other common disorders such as colic. Several manuals also provided advice on dressing teeth, hoof care, and other preventative health measures.

Veterinary manuals were abundant in the nineteenth century. They were authored and co-authored by a variety of individuals with and without veterinary experience. As professional veterinary medicine was established and grew throughout Canada and the U.S. in this period, veterinarians like Law were alarmed at the potential misinformation being provided to the public, especially as rural farmers and livestock owners often had infrequent access to veterinar-

Photo credit: C.A.V. Barker Collection, Archival Collections, University of Guelph Library



ians. Law expressed this at the beginning of his work, noting "...apart from the larger cities, the great pecuniary interest in livestock is largely at the mercy of ignorant pretenders whose barbarous surgery is only equalled by their reckless and destructive drugging." He also notes that for the farmer, his volume "...will enable him to dispense with the unprofitable and perilous services of such pretenders, and to apply rational means of cure when he happens to be beyond the reach of the accomplished veterinarian..."

Law was not alone in his quest to share professional veterinary advice with the wider public. Andrew Smith endorsed *The Veterinary Adviser*, saying "This Book will prove of immense benefit to the Farmers and Stock Owners on this continent, and, at the same time, it will be of great service to the Veterinary Practitioner." 🐾



It takes a village

THE IMMEASURABLE ROLE OF COMMUNITY IN STUDENT LEARNING

Photo credit: Rebecca Chant

It takes a village to raise a child; the same can be said about educating the next generation of veterinary practitioners.

Lectures, labs and hands-on experience are a vital part of training for student veterinarians. Opportunities to work one-on-one with clients and their animals are also a critical piece.

For student veterinarians focusing on food animal medicine at the University of Guelph's Ontario Veterinary College (OVC), on-farm calls not only provide experience with animals, but also an understanding of the important relationships between farmers and their veterinarians.

"It's a privilege for us to go out on farms, work with the animals, interact with clients and learn from all their experiences," says Dr. Jeff Rau, with OVC's Ruminant Field Service. "Not everyone is aware of how invested our clients are in our students' education. All our clients fill that profile; they love sharing their passion in farming."

Guelph-area farmer Bill Mactaggart, who raised champion purebred Suffolk sheep, was a prime example of that investment and pride in the student journey. A graduate of the University of Guelph, with a Master of Science in Physics, and longtime client of the OVC Ruminant Field Service for close to 30 years, Bill passed away in December 2018.

"To be a good large animal or mixed animal veterinarian, you need to understand farming and how to communicate with farmers," adds Rau. "Bill was a great teacher and always took time to make sure the students learned something about sheep breeding and farming."

The community's role in experiential learning is immeasurable and students are grateful for the opportunity.

"It is an unbelievably useful first taste of real life as a veterinarian," says Kristyne Smith, an OVC 2019 graduate, who now practices veterinary medicine at Linwood Veterinary Services. "Students in fourth year are extremely grateful to all farmers allowing us to learn hands-on and to practice our skills. On the Mactaggart farm we had a chance to diagnose pregnancies and to learn how to recognize common conditions."

The Mactaggart farm was one of the first where the Ruminant Field Service started teaching reproductive ultrasound on sheep. "Reproductive ultrasound isn't just about technical skills, you have to learn how to handle sheep, where to position yourself in the pen and how to move groups of sheep," says Rau. "I knew students were going to learn that working with Bill. It was a great teaching environment."

When Mactaggart was injured in a car accident the week before Christmas 2018, his wife Leslie reached out to Rau for assistance.

Rau sent an email to the OVC student Food Animal Club and received many replies, the first being Kristyne, a fourth-year student veterinarian at the time.

While he received many empathetic responses,

many students had already left Guelph for the holidays.

He asked Smith to take the reins coordinating the available students.

"She said, yes, 100 per cent. I let her run with it and had full confidence in her abilities," adds Rau.

Smith set up schedules for the nine students who helped out, chatted with feed suppliers and videotaped the farm to orient new students, including an introduction to Bill's wife, Leslie, and Moe the dog. She also connected with the eventual buyer of the sheep and helped him move the animals.

"Jeff and the students came to my rescue because I really had no knowledge how to look after the sheep. It was the students who put that roster together and came to the farm," says Leslie. "I'm talking about Christmas Day, New Year's Day, they were right with me until the second week of January looking after the sheep. There wasn't a shift missed."

Mactaggart's first career was as a high school teacher, before eventually going into the investment business. But his passion lay in farming and particularly in raising sheep.

A U of G graduate, he was passionate about improving the health and genetics of his show flock. This formed a lot of his relationship with the university because of the work they were doing in animal husbandry and sheep health, says Leslie.

"Bill was always very encouraging of people who wanted to get involved with sheep because it was his passion. Sharing his knowledge was really important to him," she adds.

He also was interested in investing in community. When the family discussed ways to honor his legacy, a scholarship in his name seemed the natural choice.

"His relationship with the university and with OVC was such an important part of his life and the fact that the people at the university recognize that is very heartwarming for the family," adds Leslie.

The first Bill Mactaggart Memorial Scholarship in Small Ruminant Health Management will be awarded in 2020.

Adds Rau: "Bill was one of those special individuals who clearly touched a lot of people in a significant way. A big piece of that was veterinary students and the teaching program."



Guelph-area farmer and University of Guelph alumni Bill Mactaggart was a longtime client of the OVC Ruminant Field Service. Passionate about raising purebred sheep, he was also invested in sharing his knowledge with student veterinarians on their educational journey.

“ Bill was always very encouraging of people who wanted to get involved with sheep because it was his passion. Sharing his knowledge was really important to him.”

It all started with one question and insatiable curiosity.

The question was about immunology, in particular the study of the chicken's immune system, and it kick-started a love of research for the then third-year Doctor of Veterinary Medicine student Shayan Sharif.

"That actually attracted me to three things: my discipline of immunology; the chicken as a species; and the question as to why some chickens are highly resistant and others not resistant to Marek's Disease, a disease caused by a herpesvirus that can cause lymphoma in chickens," says Sharif, who was named Associate Dean, Research and Graduate Studies at the University of Guelph's Ontario Veterinary College (OVC) in September 2019. "This question attracted me to research, planting the seed of curiosity that triggered my interest in this area."

Sharif moved to Canada from his native Iran to complete a PhD in Immunology and Immunogenetics in OVC's Department of Pathobiology, then began a post-doctoral research fellowship at The John Robarts Institute in London, Ontario before returning to a faculty position at OVC in 2001.

His return to OVC not only brought him back to the poultry species he loves, it continued a focus on research and training the next generation of scientists that has defined his career.

As Associate Dean, Research and Graduate Studies, Sharif oversees a broad portfolio of research areas at OVC – including applied clinical science, food animal health management, infectious disease, public health, antimicrobial resistance and stewardship, reproductive biology, as well as strengths in clinical trials and comparative and translational research in cancer, cardiovascular, stem cell biology and regenerative medicine. Many areas encompass the One Health realm, tackling problems impacting animals, humans and the environment around the globe.

Among OVC's research assets are also an abundance of collaborative research networks – in dairy, poultry, swine and regenerative medi-

cine – as well as centres in animal welfare, cardiovascular investigations, public health and zoonoses, comparative cancer investigation and equine studies.

"Our multidisciplinary research tackles One Health problems impacting people, animals and the environment around the globe," notes Sharif.

"As veterinarians and researchers, we are at the service of Canadians. One of the ways we do this is by providing a safe, secure food value chain."

Sharif counts a new biosafety level 2 production animal research isolation unit, funded in part by federal and provincial government dollars, among U of G's assets.

"There is no other comparable facility in the province and it is only one of a handful in the country. We are quite fortunate to have something like this at the University of Guelph and OVC," he adds.

The new facility will improve researchers' ability to identify and prevent threatening infectious diseases important to animal and human health. This work includes developing vaccines to prevent disease in animals and to reduce the use of antibiotics to treat disease.

"As veterinarians and researchers, we are at the service of Canadians. One of the ways we do this is by providing a safe, secure food value chain."

Researchers are also exploring how to reduce the burden of some disease-causing microbes and pathogens, such as salmonella and campylobacter, that can cause illness in humans. "For example, my work is concentrated on avian influenza which has zoonotic capacity, that is it can jump from animals to humans and sometimes from humans back to animals again," adds Sharif.

Among OVC's accomplishments, Sharif notes the college's ability to attract Canada Research Chair (CRC) funding in areas such as animal reproductive biotechnology, in population disease modelling and zoonotic diseases.

Most recently the college received funding for CRC Tier 2 chairs in One Health and in disease genomics and bioinformatics.

"I look at these as major research gains for OVC," says Sharif.

Going forward, Sharif plans to consult with faculty, staff and students "to get a better sense of our strengths, needs, opportunities

and aspirations for the future." He also wants to pursue a comparative analysis of research and graduate studies.

His goals include investigating opportunities for more research chairs for the college and for larger multi-disciplinary, multi-institutional grants. He also hopes to create a mentorship plan for faculty focusing on how to ensure further success in tri-council funding applications to the Natural Sciences and Engineering Research Council of Canada (NSERC) and the Canadian Institutes of Health Research (CIHR).

In addition, Sharif wants to explore experiential opportunities for graduate students.

"Many of our students who are finishing their graduate programs are probably asking themselves: Am I going to find a career path that I like? And am I prepared for my future career? While the answer to the first question is a resounding yes, the answer to the second question is a bit more complicated," says Sharif.

Sharif believes future careers will demand more emphasis on well-developed core skills, including communication, collaboration, critical thinking and problem solving.

"These are skills we always try to instill in our graduate students, but there is an increasing need for more formal training in these areas," he adds. "The University has taken steps to address these needs and there will be more to come, so stay tuned." 🐔



SHAYAN SHARIF

Photo credit: Karen Mantel

New approach holds promise in fighting ovarian cancer

A novel approach to ovarian cancer research at the Ontario Veterinary College (OVC) is delivering promising results.

"The treatment for women with advanced ovarian cancer has not changed appreciably in 40 years," notes OVC Biomedical Sciences professor Jim Petrik. Current treatments have limited effectiveness, focusing on destroying the tumour's blood supply and trying to starve it.

"A cancerous tumour grows rapidly with a vast expanding blood vessel system, but it is a poorly functioning blood system," explains Petrik.

A recent groundbreaking study from his lab showed opening up these blood vessels — vascular normalization — is potentially more effective in fighting ovarian cancer than destroying the tumour's blood supply.

The study was the first to investigate this approach in mouse models with advanced ovarian cancer.

His research team developed an approach to prune the dysfunctional blood vessels, establishing a tumour with a good blood supply. This pathway was then used to deliver treatment to the tumour, including

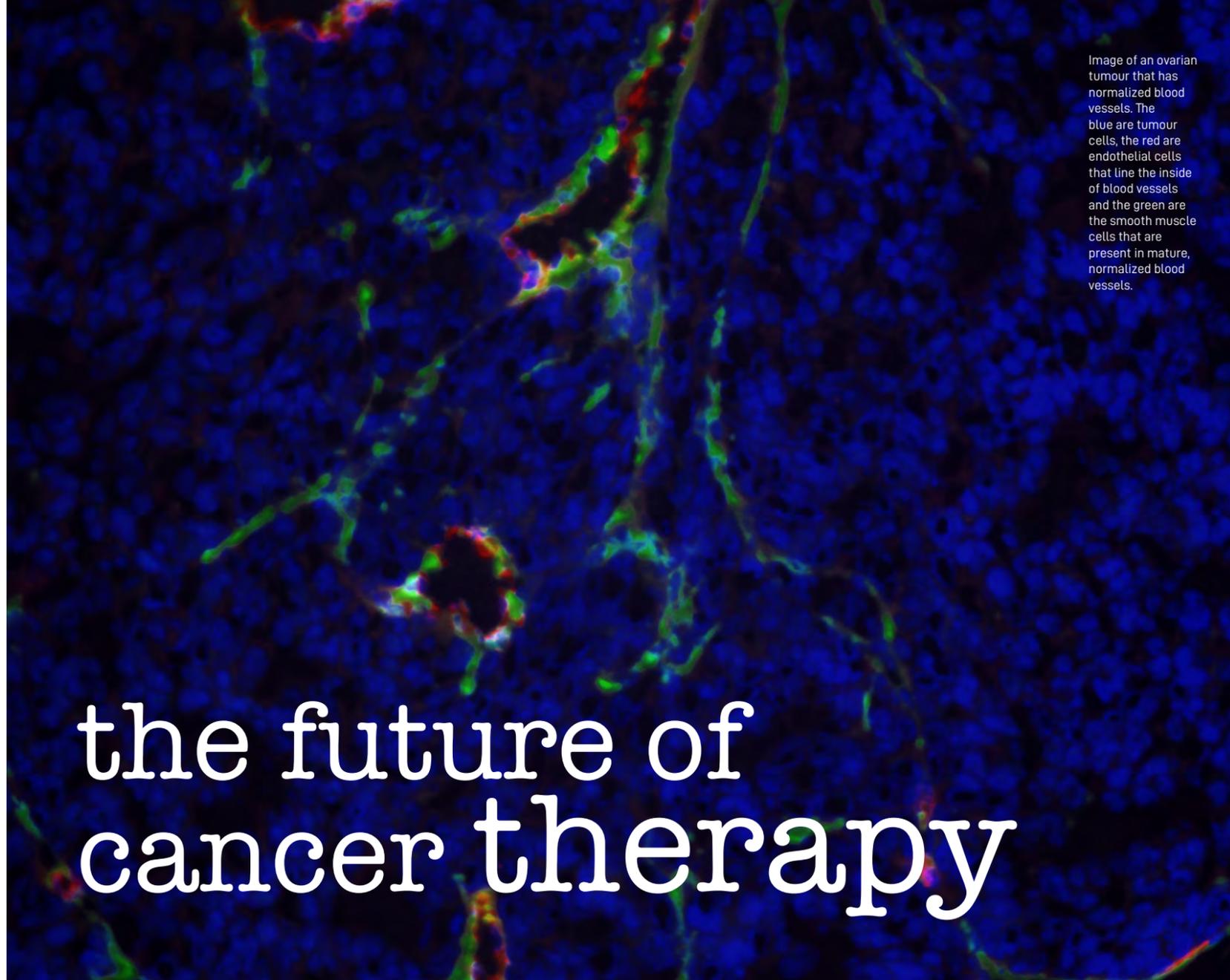
new approaches such as oncolytic viruses and immunotherapy.

The latter work, in collaboration with Profs. Byram Bridle and Sarah Wootton, in OVC's Department of Pathobiology, explores the power of oncolytic viruses to infect and kill cancer cells and to stimulate anti-tumour responses in the body. Part of the response is to also recruit and activate nearby immune cells which then also enter the tumour.

The study not only showed an uptake of the oncolytic virus, but also a dramatic increase in uptake and activation of the immune cells the virus produces.

"Once we've activated and recruited those immune cells, they initiate a very potent anti-tumour effect," says Petrik. "We see this in the primary tumour, but importantly, we see the exact same mechanism replicated in the metastatic tumours. This is critical because in ovarian cancer, as with a lot of other late stage cancers, it's the metastatic disease that ultimately causes a lot of morbidity."

Close collaborations with McMaster University and Western University is further advancing the work.



the future of cancer therapy

"We're collaborating with clinicians at both medical schools as we try and transition this to a Phase 1 Clinical Trial with human patients," says Petrik. "We're working with human ovarian cancer cells and so far we've been able to show that the therapy is equally as effective in human cancer samples as we see with our animal model."

An important transitional step will include bringing the therapy to companion animals

with naturally occurring cancers. He recently received funding from OVC Pet Trust to begin this work.

OVC's Mona Campbell Centre for Animal Cancer is the ideal place to investigate these therapies in dogs and cats with spontaneous disease and offer these treatments.

"Companion animals live in the same environment that we do and their naturally occurring disease is similar to what we see

in humans," says Petrik. "If we have therapeutic success in the mouse models and then also with companion animals, we may have a therapy that's far more robust and will have much better efficacy in human cancer patients."

"We're taking a novel approach to a very challenging problem," notes Petrik. "There's a lot of hope that this is going to really improve our ability to treat these very difficult diseases." 🐾

Image of an ovarian tumour that has normalized blood vessels. The blue are tumour cells, the red are endothelial cells that line the inside of blood vessels and the green are the smooth muscle cells that are present in mature, normalized blood vessels.

Petrik's research is funded by the Canadian Institutes of Health Research; Natural Sciences and Engineering Research Council, the Cancer Research Society and Ovarian Cancer Canada.

van Vloten's research is funded by the Cancer Research Society, Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council, The Ontario Ministry of Agriculture, Food and Rural Affairs' Highly Qualified Personnel Scholarship program and the Ontario Veterinary College.

An innovative, cost-effective method that will pave the way for new advances in immunotherapy, a type of treatment that helps the body naturally defend against cancer, is being developed at the Ontario Veterinary College (OVC).

OVC pathobiology professors Byram Bridle and Sarah Wootton, PhD student Jacob van Vloten and a team of researchers have developed a unique cancer cell co-culturing method that evaluates if immunotherapies aimed at fighting cancer are effective at an early stage.

Their co-culturing method will save researchers time, while still maintaining reliable and effective results.

Currently, researchers must already know the antigen - a substance causing the body to make an immune response - to use in their cancer therapies to measure the immune responses of tumour-specific T cells. T cells are a type of immune system cell which play an important role in attacking cancer cells.

If an antigen isn't known, researchers must employ a range of time-consuming methods to define the antigen before measuring the T cell response.

The co-culture method provides a more convenient and effective way to assess T cells even when a target antigen is unknown.

"We have found a way to quantify the presence or absence of T cells that recognize the cancer," says van Vloten. "This gives researchers a tool to know how T cells are behaving in their therapeutic model."

The researchers are using the co-culture method in their research on a new type of cancer treatment called oncolytic virotherapy, a treatment that uses viruses to destroy cancer cells. This virus is derived from sheep and called Orf virus. It can be used to create a vaccine for sarcomas, a set of cancerous tumours made of connective tissues.

The researchers are also using Orf virus to treat late-stage ovarian cancer in mice. Pre-clinical trials with mice will eventually inform future clinical trials with companion animals with naturally occurring cancers.

Adds van Vloten, "We hope this method can help other researchers evaluate how well oncolytic viruses and other immunotherapies could work in pre-clinical and clinical trials." 🐾

Working towards a novel way to assess responses to immunotherapy

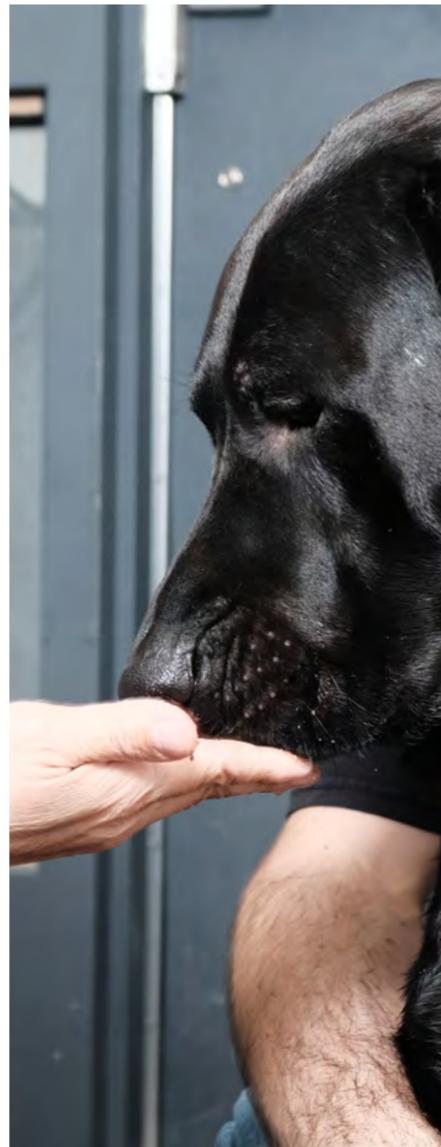


Photo supplied by Community Veterinary Outreach.

In conversation with...

MICHELLE LEM

Founded by veterinarian Michelle Lem in 2003, Community Veterinary Outreach (CVO) improves the life of homeless and vulnerably-housed individuals, families and their pets through a One Health model of care. The first of its kind, the registered charity has engaged veterinarians as community health liaisons, transforming how veterinarians, human healthcare and social services interact with marginalized populations and their pets. An OVC DVM 2001 graduate, Lem returned to OVC in 2009 to study the effects of pet ownership on street-involved youth.

Q You spearheaded an innovative community veterinary outreach program offering human health services and health education alongside preventative veterinary care that is a model for exemplary work in this area. What led you to focus on this important area?

A One Christmas, while still in vet school, I volunteered to serve food at a church in Toronto. That was the first time I met someone who had a dog who was homeless. I had the same bias a lot of people have. I assumed that these dogs are probably hungry and not getting care. I found out that wasn't the case. It was also the first time I had a chance to sit down and hear these folks' stories of what led to homelessness. I hadn't really worked in the space around homelessness until I served that meal. It was an eye-opening experience for me.

When I returned to Ottawa after graduating from OVC I set up a mobile unit and began offering behavior consultations for companion animals, but I wanted to broaden how I used the mobile unit. I was working full time as a veterinarian and teaching at the local college, but also wanted to offer wellness care for pets. Through a veterinary colleague, I contacted the executive director of the Ottawa Mission, an organization that offers community and social services to the most vulnerable in the community, and offered to provide wellness clinics. That first clinic was just me and a classmate; we saw 12 people that day, offering exams and immunizations. It was really pretty small. But word of mouth started to spread.

We developed a relationship with the public health unit and they started sending their nurse to our clinics. We also started to hear that

social workers and agencies were able to engage new people who needed support because they were coming in asking about the vet clinic. By working with us on outreach they began to see pets were a way to establish rapport and a relationship.

Since I started CVO I've been asked many times 'should homeless people have pets'? It's a misguided question. You can't answer that question unless you understand what homelessness is and what contributes to it. To understand homelessness, you have to understand the structural and systemic barriers that prevent people from being healthy and accessing care, the social determinants of health, their lived experiences, the impacts of racism, ableism, gender inequality, heterosexism, economic disparity and intergenerational poverty. These are all the same things that impact animal welfare. You can't address animal welfare in any meaningful way without understanding that the things that are impacting people are also impacting animals and people's ability to care for them.

I've always had the sense from the beginning that you just kind of put your head down and do what you feel you need to do. And this is what I found, that people start to walk on the path with you. People who are like-minded with similar goals and shared values, start to join you in this journey.

Q You are helping to redefine the role of veterinarian as community health workers. Did you always see veterinarians in this light or did this approach evolve as you developed the CVO program?

A It definitely evolved over time. As we partnered with other community

organizations and human health and social services, we came together with the same goals, to improve the health and welfare of those marginalized in our communities, human and animal alike. As veterinarians, we had much to learn about the challenges that our clients and their pets experienced, and we also had the opportunity to educate on the significance and impact of the human-animal bond. We believe that CVO is an interdisciplinary model where all of us are there to serve both the people and their animals regardless of our professional background.

Q What do you value most? What are the greatest challenges for a veterinarian working in this area?

A I value the possibility to impact both people and animals, but a big challenge is the embedded concepts that people have about the role of veterinarians. As One Health practitioners, we see veterinarians as community connectors and partners, and have a unique and trusting relationship with people through their animals. Part of the challenge is to

demonstrate the impact of our work on human health and this is one of the reasons I came back to do my masters at OVC, to conduct peer-reviewed research to contribute to the scientific knowledge base on the social issues involving animals. Another challenge is the cultural sensitivity and competency piece, which is the

reason I pursued a masters degree in social work. Social work helped me learn so much about myself, others and my place in this world. It has literally changed how I interact with every person, not just my clients. I think that profoundly elevates my ability to make impact, and I believe that when working with marginalized populations as veterinarians we need to embrace and practice the values and ethics of social work.

Q Could you give an example of a particular challenge or setback you overcame and some words of encouragement for others who wish to pursue a path in community medicine?

A I can think of two instances in which I experienced real challenges to my outreach work. They represent the exception, not the norm. I had to reach deep down inside myself, have some really honest, heartfelt conversations with people I trust to help me deconstruct the situation and find my truth because these instances challenged everything that I thought I believed. Having people who can support you in



BEYOND the BANDAGE

Community Healthcare Partnership Program

A transformational new program at the University of Guelph's Ontario Veterinary College, the Kim and Stu Lang Community Healthcare Partnership Program, will improve the health of animals through more accessible care and help shape the future of veterinary education in Canada.

A new community healthcare program at the University of Guelph's Ontario Veterinary College (OVC) will improve the health of animals by improving access to care and influencing the future of veterinary education in Canada.

An \$11-million donation, the largest single gift received by OVC, will create the Kim and Stu Lang Community Healthcare Partnership Program (CHPP). Longtime U of G and OVC benefactors Kim and Stu Lang will provide the funding through their Angel Gabriel Foundation. At its core, the new program will focus on identifying, understanding and removing barriers that impede access to healthcare for animals.

"Our role is to prepare our graduates for their future careers. In doing so, we consider not just the skills that will equip our students for their first day on the job, but also the attributes that will sustain them in their careers for the coming decades," says OVC Dean Jeff Wichtel. "This new program will employ an interdisciplinary One Health approach to positively impact animal health and welfare of animals for years to come."

"This gift represents our love for animals and our desire that this program becomes a force for good in the world. We hope it will have a positive and lasting impact on animals and those who love them, and that it will help inspire generations of future veterinarians," said Kim Lang.

The CHPP will transform OVC's approach to veterinary medical education, providing advanced community-based learning opportunities, ensuring student veterinarians can grow their competence and confidence before they graduate.

It will also provide funding for post-graduate training including Doctor of Veterinary Science (DVSc) and internships in community and shelter medicine, training previously only available outside of Canada.

"Through this aspirational investment, OVC will be able to fully integrate this type of community-based training into our curriculum, valuing the role that our veterinary graduates can play in improving the lives of vulnerable populations," adds Wichtel.

OVC has benefited from strong partnerships with a number of neighbouring humane societies and other community organizations, he notes. "Faculty, staff and students who have been fortunate to volunteer with these organizations have experienced the impact

these groups have on the lives of people and their animal companions." The new program will bring more of these opportunities into the curriculum, helping students to learn how to build these relationships and partnerships with communities in need.

Importantly, it will also expand and enhance the existing OVC spay-neuter facilities to further support existing community partnerships, benefit regional shelters, as well as further enhance the student experience.

As a result of the gift, new experiential learning opportunities are being developed, such as a rotation for fourth and final year student veterinarians to improve access to veterinary care in Northern Indigenous communities.

The program will include a veterinary director who will forge collaborations with community partners.

As well, the gift will create a new professorship in community and/or shelter medicine to drive academic research in this field.

Research is needed to establish evidence-based best practices in providing care for underserved communities and for sheltered animals and to study shelter management strategies to measure cost-benefits and community benefit. On the social side of the spectrum, research can help determine which approaches to the intercultural exchange of knowledge and experience build the strongest partnerships and community benefits. It also can help determine what effect volunteering to provide accessible care to marginalized groups has on student and veterinary professional wellness and mental health, and it can help determine if providing this veterinary care impacts the social and health determinants of people without access to veterinary care.

In addition to CHPP, the gift will also launch Remy's Fund, named for one of the Lang's rescue dogs that received life-saving cancer treatments at OVC, to help subsidize medical care for animals in need.

"Through this new investment, the Ontario Veterinary College will graduate veterinarians who are competent to support and lead programs that expand access to animal healthcare for underserved populations," says Wichtel.

A lifelong champion of animal welfare, Kim Lang has served on the OVC Pet Trust advisory board since 2009 and currently co-chairs its marketing committee. OVC Pet Trust improves and advances companion animal health and well-being by supporting health care, education and innovative discoveries at OVC. 🐾



Photo credit: Memory Tree

Contributing to care and community are critical components in the student veterinarians' journey at OVC. Curricular elements are honing clinical and communication skills in community outreach, while student outreach clubs provide further hands-on opportunities to build one-on-one relationships in communities. Together these formal and informal approaches at OVC have laid the foundation to enhance valued community partnerships along with expanded community-based training for the next generation of graduates.

Pet Smart Charities grant supports spay-neuter clinics

A new pilot program has launched to support spay-neuter clinics in the Guelph area.

A grant from PetSmart Charities Canada to the Guelph Humane Society (GHS), will support a partnership among GHS, the University of Guelph's Ontario Veterinary College (OVC), and Community Veterinary Outreach (CVO) to bring spay-neuter options to pet-owning populations who need it most. The innovative collaboration is the first of its kind in the Guelph area. Previously there have been very limited local low-cost spay-neuter options available.

"GHS continues to elevate animal welfare, and it is a great honour to collaborate with OVC and Community Veterinary Outreach to address pet overpopulation of owned animals in our community", says Lisa Veit, Associate Director at the Guelph Humane Society. "We know there is a tremendous need for this type of program, and we are excited about the impact that this program will have on under-resourced pet owners in our community."

The partnership will provide low-cost spay neuter options for two groups of under resourced, owned pets: barn cats, whose owners often have large populations of cats and cannot afford multiple spay-neuter surgeries, and cats and dogs of Community Veterinary Outreach clients, a charity that provides free preventive veterinary care for pets whose owners are homeless or who are vulnerably-housed.

The clinics are made possible through the generous time donated by volunteer veterinarians, registered veterinary technicians and OVC student veterinarians, providing high-value experiential-learning opportunities for participating student veterinarians.

The grant will fund 10 clinics and will provide approximately 150 spay-neuter surgeries for owned pets. Initial clinics were held in the fall of 2019.

C O U M M U E N A I C T h Y

SEEING POSITIVE GROWTH IN HEALTH AND RELATIONSHIPS FROM ANNUAL POP-UP CLINICS.

Students from the Ontario Veterinary College (OVC) at the University of Guelph have found a meaningful way to contribute to reconciliation with what they do best – taking care of pets and in turn, the hearts of their owners.

Since 2012, the First Nations project, part of the OVC Community Outreach Club (COC), has provided two First Nations communities in southern Ontario with annual pet wellness clinics. These clinics are supported by students, faculty, sponsors and the First Nations themselves. The project's popularity has continued to grow among First Nations members, and within the OVC community. The project has resulted in well-informed pet owners and improved pet health, and notably in a reduction of heartworm disease, a fatal parasitic disease found in dogs and cats.

"What's most important to me as a coordinator is the improvement of animal health, but also this unique opportunity to aid reconciliation efforts with the First Nations people through direct communication and pet welfare assistance," says Prof. Shane Bateman, COC faculty coordinator from OVC's Department of Clinical Studies. "It's so important for our students to understand

this relationship so they know how to contribute when they are outside of our walls."

OVC students visit Walpole Island First Nation and Kettle and Stony Point First Nation once a year, supervised by licensed vets, and provide one-on-one consultations and examinations that can provide anything from microchipping to immunizations. In its first year, 32 pets were seen through this program but its growing popularity has increased this to over 233 pets in those communities in 2019.

"First Nations often have dog and cat overpopulation issues because individuals will take responsibility for animals even when not affordable – I've been told that there are some that feed up to 25 to 28 dogs," says Alison Bressette, member of the Chippewas of Kettle and Stony Point First Nation and COC liaison. "These clinics provide affordable veterinary services to those that have been marginalized, while breaking barriers and providing an opportunity for relationship building."

Bressette and Bateman have seen numerous positive changes in the communities over the last few years, including a dramatic decline in heartworm disease due to the annual heartworm preventative care

provided.

Additionally, Bressette notes that the clinics have helped bring communities together through the open sharing of love for pets. Community members have also held each other accountable for responsible pet ownership to ensure all pets are well-cared for.

"I see the animal-human bond as the greatest benefit of the program," says Bressette. "It's important to me because the dog worked with our ancestors to help them survive. First Nations communities are re-embracing the dog as family and bringing their pets to these clinics gives individuals a sense of pride as custodians."

Community members also appear to be more confident in their pet health knowledge, something students have assisted through one-on-one consultation and monthly newsletters addressing needs identified by the communities.

"This effort wouldn't be possible without the support of the communities, Alison, and the time volunteered by students and local vets," says Bateman. "This initiative has grown in a very positive way and we hope to continue improving it for many years to come."

Genevieve Harris, OVC 2020, First Nations Committee Representative on the COC Executive Team, works with other members of the COC First Nations Committee, Jennifer Ho, Taylor Morris and Christina Jobson, to organize the spring wellness clinics in both Walpole Island First Nation and Kettle and Stony Point First Nation.

How has this experience organizing the clinics helped you?

I have gained so much confidence in blood collection, physical examinations, and perhaps most importantly, client communication, while also providing an important service in these communities.

What have you learned from working in the clinics?

Our clinics have close to 100 patients come through on busy days, meaning that we are not only helping many pets, but we also have the opportunity to learn about many different diseases.

What do you think is the biggest benefit of the program?

We see improvements in animal health every year. Conversations have shifted from why preventative care is important to clients telling

us that their pets are due for vaccines and asking about the next clinic. Along with this, we hope the clinics aid in reconciliation efforts with First Nations. We are very fortunate to be involved with both communities who allow us to make these clinics as approachable and effective as possible. The clients care deeply for their pets, but are often not in a financial position to afford the level of care that they would like to provide without these clinics.

What would you like OVC students to know?

I would encourage all students to participate in at least one of the spring wellness clinics! Even if you are just starting, it's a great opportunity to learn in a supportive environment. Stepping away from school and reminding yourself why you work so hard is rewarding.



Photo credit: Wutsup Media

First-of-its-kind rotation at OVC combines clinical skills building with community involvement

Teaching and community service often go hand in hand.

A fourth-year community outreach rotation at the Ontario Veterinary College (OVC) not only offers student veterinarians an opportunity to reinforce their clinical skills, it encourages placements in non-traditional settings and a focus on pet over-population.

During this elective rotation, fourth and final year student veterinarians can spend time outside of OVC with any community group that does any outreach.

"It could be a humane society, it could be another veterinary organization that provides services to general areas in need," says Prof. Carolyn Kerr, chair of OVC's Department of Clinical Studies, who coordinates the rotation with OVC critical care clinician and professor Shane Bateman.

The rotation includes three days of spay-neuter surgeries with pets that have come under the care of humane societies around the Guelph area.

The rotation begins in the summer, timed perfectly for students finishing third-year surgery classes. Throughout their studies at OVC, student veterinarians steadily build their technical and surgical skills. Surgery and anesthesia training in third year prepares them for the additional hands-on experience.

During the rotation, student veterinarians have the opportunity to complete dog and cat spays and neuters, providing an excellent opportunity to hone their surgical skills under supervision.

The rotation also provides the opportunity to work with patients and clients of all demographics.

"All of our surgical cases were dogs and cats who belonged to low-income com-

munity members. These animals were our responsibility for the day and we took great care in giving them a safe and fear-free experience for their wellness examinations and surgeries," says Julia Saturno, OVC 2019, who participated in the rotation during her fourth year at OVC. "The Community Outreach rotation was my first exposure to these cases and I utilize the communication and practical skills I learned during that week every day of my career."

Students also complete two additional volunteer activity days in one of three theme areas: animal health and marginalized communities; shelter medicine; or cat overpopulation.

"We want students to be exposed to the sorts of skills and leadership veterinarians can provide in shelters and shelter management and guiding organizations that are providing care for vulnerable animals," says Bateman. "We have such a substantial and valuable role to play in those situations."

The pet overpopulation focus is an area of importance in relation to community cats and feral cats.

"Veterinarians are well suited to try to answer some of the questions about how we manage these populations of animals to minimize their impact on the environment and resident wildlife," says Bateman. "We have enough evidence to suggest that targeting specific demographic populations where pet overpopulation arises because they may not be able to afford surgical spay neuter is one way for the community to get a handle on overpopulation."

In the first three years the rotation was offered, all the animals referred were under the care of humane societies and rescue organizations.

One of those community partners, the City of Hamilton Animal Services, provides a number of services including a municipal animal shelter for dogs, cats and other pets looking for a new home.

"Programs like this help support our adoption program and it has been a great asset to our organization," says Tiffany Trebych, with the City of Hamilton, Animal Services. The staff and students in this program have been nothing but helpful and a pleasure to work with. We look forward to the years ahead and what else it may bring to us here at the shelter."

In the past few years, the rotation has further expanded its reach.

"In 2017, we began, through community outreach in Guelph, to perform spay-neuters for individuals who have demonstrated financial need to help reduce pet overpopulation and maintain pet ownership with this population where their pets are a big part of their lives as they are for all of us," says Bateman.

It adds another element of education, with students responsible for communicating with clients and talking to them about potential complications.

Adds Kerr, "Even if the students don't end up doing community outreach themselves I think they will end up with an improved understanding of why people do it and therefore engage better with our profession and society in general."



Let's talk about sexual health

Photo credit: istock.com

For members of the LGBTQ+ community, accessing sexual health care can be complicated for a variety of reasons. It's this and other marginalized communities who face systemic barriers that benefit the most from improved access.

It's a challenge Juan Medina, Capacity Builder at ARCH, a Guelph-based AIDS service organization, is meeting head-on. Using the training he received in the Master of Public Health program at the University of Guelph, Medina acts as the liaison between the organization and the community. At present, he is developing a health care curriculum, including a package of resources to help local clinicians better meet the needs of the transgender community.

"The LGBTQ+ community is one priority population that AIDS service organizations commonly work with," says Medina. "We also

focus our outreach on local sex workers, substance users, the African-Caribbean-Black community and Indigenous communities since these groups are disproportionately affected by HIV and AIDS."

Medina's role involves local outreach in the form of workshops and educational activities and other projects relating to sexual health and harm reduction. Unlike other AIDS Service Organizations,

navigate the healthcare system, as well as getting the chance to address gaps he saw. Ultimately, it encouraged his move to public health and application to the MPH program at OVC.

"What really puts fire and intention behind what I do is uncovering health inequities," he says. "Seeing the obstacles patients were facing made me want to address those larger systemic barriers."

He appreciated the MPH program's focus on One Health and also valued the program's strong foundations in health promotion and health communications.

"In my work I do a lot of workshop facilitation and community consultations. I constantly find myself going back to what I learned in the program about different approaches for engaging people, as well as making health services more inclusive and accessible to different populations," he says.

Classes covered general themes relating to public health, but assignments were open-ended, allowing students the freedom to provide topics that were of interest to them. Medina says his growing interest in sexual health was unexpected, but it led to a practicum placement with ARCH. He notes these mandatory practicums provide great hands-on, real-life experience and, as in his case with ARCH, can lead to employment.

"No one should struggle with feeling uncomfortable or judged when they access health care," says Medina. "It's important to celebrate improvements in the system, and to acknowledge that some groups still face systemic oppression and disadvantage, especially when it comes to health care." 🍌

MPH GRAD HELPS BREAK DOWN BARRIERS FOR PRIORITY POPULATIONS



Innovation + collaboration accelerating discovery

The whole is greater than the sum of its parts...

Innovation and collaboration are an integral part of Prof. Michelle Oblak's approach to veterinary care.

"Veterinary innovation to me is the opportunity to influence both animal and human health. It's constantly reevaluating what we do and how we approach each case to think outside the box and influence positive change," says Oblak, a veterinary surgical oncologist and professor in the Department of Clinical Studies at the University of Guelph's Ontario Veterinary College (OVC).

As the first holder of the new Animal Health Partners Research Chair in Veterinary Medical Innovation, announced in October 2019, Oblak brings expertise in clinical research with a focus on novel interventions and therapeutics. The \$1-million research chair is a five-year term funded by Animal Health Partners, a veterinary referral and emergency hospital in Toronto.

An OVC DVM 2008 graduate, Oblak completed a combined surgical residency and DVSc. at OVC, followed by a post-doctoral fellowship in surgical oncology at the University of Florida. She joined OVC's Department of Clinical Studies in 2013.

"This collaboration will enhance OVC's role as a leader in translational medicine and in our One Health approach to veterinary medicine and innovation," says OVC Dean Jeff Wichtel.

Central to the approach is collaborative and interdisciplinary veterinary and clinical research, including exploring advanced diagnostic and therapeutic models and methods for treatment to advance care.

The new research chair will facilitate sharing of clinical case material, specialized equipment and expertise, as well as new opportunities in comparative and translational research and training.

"Clinical trials are so essential to the work that we do at OVC, enabling our patients to access advanced techniques and ultimately accelerating translational discovery," says Oblak. "Through our work with Animal Health Partners, we will be able to have access to a larger patient population and improve the patient experience."

As a clinician and clinical researcher, Oblak is focused on translational discovery to improve care. Her comparative

oncology program at OVC includes innovative approaches for staging and treatment of dogs with cancer including the use of 3D printing and novel technology.

Her initial work with AHP will focus on developing innovations in image-guided surgery.

One of Oblak's current studies involves sentinel studying lymph node mapping using a novel imaging agent to highlight them. The imaging agent helps identify the appropriate lymph nodes more easily, improving both the ability to sample them and improving understanding of how to better stage cancer (seeing where cancer has spread in the body).

"There's quite a lot of interest around some of these novel imaging techniques, as well as how we can use image-guided therapeutics to improve treatment," adds Oblak. "By looking at some of these therapies, we can improve care in our animal population while also sharing information to improve human health."

The collaborations that happen between human health researchers and veterinary researchers are vital.

For Dr. Taufik Valiante, a neurosurgeon with the Krembil Neuroscience Centre, part of the University Health Network, it is a perfect alignment. "You can mature technologies while trying to provide therapeutic benefit to the animal but then you can translate that to humans," he notes.

"We are regularly approached by researchers in the human health space who are starting to understand that our veterinary patients could share a lot of valuable information to try to understand diseases better," Oblak adds.

She also has been working closely with researchers at the University Health Network in Toronto, studying a new staging technique for lung tumours. "Fortunately, we don't see a lot of lung tumors but that also means that it can take a lot longer to get the case information we need. By working with Animal Health Partners, we can increase the number of patients we see, which ultimately will improve our study."

Adds Oblak, "The ultimate goal is to create a framework to encourage a collaborative environment where we can work with both human and veterinary researchers with the same goal of benefiting health in both animal and human patients."

Animal Health Partners

The Animal Health Partners Research Chair in Veterinary Medical Innovation is a unique partnership between the Ontario Veterinary College (OVC) at the University of Guelph and the Animal Health Partners (AHP). Toronto Animal Health Partners Emergency and Specialty Hospital is one of Toronto's newest hospitals led by a team of highly qualified veterinary specialists and modeled after best practices in human medicine.

The partnership aims to facilitate a One Health approach to advancing medical diagnoses and therapies in companion animal health and translate this knowledge to accelerate human medical discoveries.

"We're looking to better the care and outcomes for both humans and animals. OVC provides for us a strong opportunity to ensure our knowledge is constantly growing and that we can disseminate that knowledge for better quality of care and better quality of service for everybody in the veterinary industry," Dr. Scott Woodrow, CEO, Animal Health Partners.

EDUCATION

EXPERIENTIAL LEARNING AND

When Adam Quinlan and Juan Orjuela accepted summer research positions with Ontario Veterinary College (OVC) professor Michelle Oblak, they didn't realize it would ultimately lead them to connections in business and entrepreneurship.

The student veterinarians at OVC immersed themselves into the world of 3-D printing to learn more about the technology and opportunities for use in veterinary medicine.

As part of the Fall 2019 cohort with the Hub Incubator Program, part of the John F. Wood Centre for Business and Student Enterprise at the University of Guelph, the two explored opportunities to help other student veterinarians learn this innovative technology.

Through the summer of 2019, Oblak, a veterinary surgeon oncologist in OVC's Department of Clinical Studies, asked Quinlan and Orjuela to learn all they could about 3-D technology.

The previous year, Oblak performed a veterinary first by successfully using a 3-D printed custom titanium plate for surgery on a dog's skull, a news story that went viral around the world. The achievement signaled a new breakthrough in cancer treatment and research.

For Orjuela, OVC Class of 2022, and Quinlan, OVC Class of 2021, the deep dive into 3-D technology was an inspirational learning process.

The pair tackled hands-on training with the technology at the John F. Woods Centre Maker Space at the U of G. Open to all U of G students, the Maker Space provides creativity-inspiring tools, including 3-D printing technology, workshops and co-working space for students to explore the steps to prototype a product or idea.

"The experience really helped us understand the reality of a veterinary practitioner or a student veterinarian learning 3-D technology and all this entails," says Quinlan.

It also sparked an idea to create 3D-VETIC, an innovation club for student veterinarians focused on 3-D printing technology, and their subsequent enrolment in the Hub Incubator Program to further develop the concept.

Available to U of G students and alumni, the Hub Incu-

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bator program offers mentorship and access to experienced entrepreneurs and helps startups take the steps from prototype to a strong business model.

"The people in the Hub Incubator bring a background in business and entrepreneurship," says Orjuela. "It's really vital for us to get their opinions and hopefully develop something to help veterinary students adopt these new technologies and these new ways of thinking in our profession."

Melanie Lang, Executive Director of the John F. Wood Centre believes that when you help build up the entrepreneur, the business naturally evolves as well. "Entrepreneurship and entrepreneurial thinking have a beautiful way of bolstering onto and leveraging any domain it touches. Entrepreneurship knows no boundaries, it's the vehicle that allows people to be self-determining, communities to thrive and students to see the market potential of their thoughts and actions."

Through 3D-VETIC, Orjuela and Quinlan hope to encourage groups of student veterinarians to work together to create veterinary innovation clubs at their academic institutions. They want to develop a blueprint of what a successful veterinary innovation club would look like, including guest speakers, educational labs in 3-D printing, as well as suggestions on how to network with mentors and professionals in the field. To begin, they have started a veterinary innovation club at OVC as proof of concept.

Through the Hub Incubator, Orjuela and Quinlan met bi-weekly with like-minded individuals exploring their own entrepreneurial ideas. Participants shared ideas, learned how to engage with potential mentors, how to communicate their ideas and pitch their products, as well as set smart and stretch goals for the semester.

While their work with Hub Incubator meant stepping out of the box for Orjuela and Quinlan, they recognize the opportunities innovation and entrepreneurship can offer their future careers.

"The networking, mentorship opportunities and connection with fellow entrepreneurs are so valuable," says Quinlan. "They are one of the most impactful parts of the process."

Orjuela and Quinlan created 3D-VETIC. Their goal: to encourage groups of student veterinarians to work together to create veterinary innovation clubs at their own academic institutions and to network with mentors and professionals in the field



Adam Quinlan, Doctor of Veterinary Medicine, OVC class of 2021

"The networking opportunities with the Hub Incubator were so valuable and probably one of the most impactful parts of the process."

Juan Orjuela, Doctor of Veterinary Medicine, OVC class of 2022

"Entrepreneurship for me has been something really new and exciting. It's something different that I think could have a really promising future for me."



Bryan Jenkins, PhD candidate with Jibrán Khokhar, Department of Biomedical Sciences

Also part of the Fall 2019 Hub Incubator cohort, Jenkins is focusing on a product to provide substance users with a channel to assess and evaluate their substance use in real-time. The product will use 'neurofeedback' to visualize data on a user's brain state before, during, and after drug craving, and will aim to predict craving onset and precede it with a gentle reminder for the user, or their support network, to intervene. "I strongly believe that all scientists can benefit from learning how to think and design from the perspective of an entrepreneur," says Jenkins. "As we are also in the business of selling our ideas and have a responsibility to ensure we translate that knowledge to funders and the public."



Kash Kuruppu, Doctor of Veterinary Medicine, OVC class of 2017

For Kuruppu, it is Milo (www.miloplans.com). Milo uses technology to help bridge the compliance gap between veterinarians and pet parents. "The Milo app simplifies creating, launching and managing personalized preventative healthcare plans," says Kuruppu. "A big part of what we do is raising awareness on the importance of preventative care." Kuruppu is currently helping implement Milo in companion animal practices across Canada.



Michelle Lam, Doctor of Veterinary Medicine, OVC class of 2016

Lam is developing Pawmorial (www.pawmorial.com), a service geared towards providing owners with an alternative way of coping with the loss of their pets by allowing them to create an online memorial for their pet and giving them access to a supportive online community. "I see owners struggle all the time with pet loss," says Lam. "Pawmorial was created to help owners get through this difficult time."

What is the Maker Space?

An entrepreneurship and innovation hub, the John F. Woods Centre Maker Space provides U of G students with the tools they need to start prototyping, including: 3D printing; co-working space; workshops and creativity-inspiring tools.

What is the Hub Incubator?

As part of the John F. Wood Centre for Business and Student Enterprise at the University of Guelph's Gordon S. Lang School of Business and Economics, the Hub Incubator offers U of G students and alumni funding, dedicated office space and access to experienced entrepreneurs. The Hub focuses on helping startups develop a strong business model that can be rigorously tested and intelligently scaled.

Ontario Veterinary College alumni are also exploring the opportunities the Hub Incubator program provides. Both Kash Kuruppu, OVC DVM 2017, and Michelle Lam, OVC DVM 2016, enrolled in the innovative program after completing their DVM degrees. They both have products they designed in development.



OVC Alumni Class Notes

AWARDS & ACCOMPLISHMENTS

If you have news or an update you would like to share please contact: Amy Tremaine, Alumni Advancement Manager, OVC, by phone (519) 824-4120 x 56679 or email tremaina@uoguelph.ca.

50s

Duncan G. Sinclair, OVC DVM 1958, has been named a **Member of the Order of Canada**. Sinclair, professor emeritus at Queen's University was recognized "for his contributions to the Canadian health care system as a teacher, university administrator and adviser, and for his leadership in health care reform in Ontario."

60s

Wayne Martin, OVC DVM 1967, MSc 1970, PhD UC Davis, was recognized with a **2019 Alumni Achievement Award** from the UC Davis School of Veterinary Medicine.

70s

Vern Chase, OVC DVM 1975, received the **Ontario Veterinary Medical Association Golden Life Membership**

Award. Ontario Pork recognized **Robert Friendship**, OVC DVM 1977, MSc 1984, with the **2019 Industry Achievement Award**.

Paula Menzies, OVC DVM 1978, in OVC's Department of Population Medicine, was named **University Professor Emerita** at the Summer 2018 U of G Convocation.

80s

Theresa Bernardo, OVC DVM 1984, in OVC's Department of Population Medicine, was recognized with the **American Veterinary Medical Association (AVMA) XIIth International Veterinary Congress Prize**. Bernardo is the IDEXX Chair in Emerging Technologies and Bond-Centered Animal Healthcare.

Todd Duffield, OVC DVM 1990, DVSc 1997, **David Kelton**, OVC DVM 1984, MSc 1989, PhD 1995, and **Stephen LeBlanc**, OVC DVM 1997 and DVSc

2001, were among a select group of dairy researchers **inducted into the Journal of Dairy Science (JDS) 100 Club**.

Walt Ingwersen, OVC DVM 1982, OVC DVSc 1988, received the **Ontario Veterinary Medical Association Outstanding Veterinarian Award**.

Maria Spinato, OVC DVM 1985, DVSc 1989, was **appointed Director, Animal Health Laboratory and Co-Executive Director, Laboratory Services Division**, effective September 1, 2019.

90s

Sandra Godden, OVC DVM 1993, DVSc 1998, College of Veterinary Medicine, University of Minnesota, received the **American Association of Bovine Practitioners Award of Excellence**.

Alfonso Clavijo, OVC PhD 1995, named head of the **new U.S. National Bio and Agro-Defense**

Facility (NBAF) in Manhattan, Kansas. Veterinary Association World Congress in Toronto.

00s

Tracy Godfrey, OVC DVM 2009, received the **Ontario Veterinary Medical Association Associate of the Year Award**.

Brandon Lillie, OVC DVM 2000, PhD 2007, was named **chair of the Department of Pathobiology**.

OVC Community

Allan King, OVC MSc 1975, Department of Biomedical Sciences, was named **University Professor Emeritus** at the Fall 2019 U of G Convocation.

David Waltnier-Toews, OVC PhD 1985, University Professor Emeritus, received the **Covetrus International Veterinary Community Service Award** at the 2019 World Small Animal

Veterinary Association World Congress in Toronto.

Darren Wood, OVC DVSc 2000, in OVC's Department of Pathobiology, received the **2019 American Society for Veterinary Clinical Pathology (ASVCP) Educator Award**.

Grant Maxie, OVC PhD 1974, **retired** from the Animal Health Laboratory on September 1, 2019.

New Faculty

Giannina Descalzi joined OVC's Department of Biomedical Sciences.

New faculty in the Department of Clinical Studies: .

Ryan Appleby, OVC DVM 2014; **Patricia Biello**, OVC DVSc, PhD 2017; **Monica Gomez**, OVC DVM 2014, DVSc 2019; **Diego Gomez**, OVC PhD 2017; **Monica Jensen**, OVC DVM 2014, DVSc 2019; **Melissa MacIver**, OVC DVM 2013; **Shari Raheb**, DVSc 2019; and **Valerie Poirier**.

Photo credit: C.A.V. Barker Collection, Archival Collections, University of Guelph Library

PASSAGES

50s

Alvin Rae MacKay, OVC DVM 1950, of Sanford, NC, passed away Saturday, August 17, 2019.

John (Sandy) McKenzie, OVC DVM 1950, passed away on February 13, 2020.

Harold Reed, OVC DVM 1955, former OVC faculty member, passed away on December 3, 2019.

Donald Stewart MacDonald, OVC DVM 1957, passed away April 24, 2020.

60s

Robert (Bob) Curtis, OVC DVM 1961, former OVC faculty member, passed away on December 8, 2019.

Larry Delver, OVC DVM 1961, passed away on November 24, 2018.

Sharon Lynne Kopinak, OVC DVM 1966, passed away on Saturday, July 6, 2019.

Theodoris A. "Ted" Poelma, OVC DVM 1960 passed away on June 16, 2019.

W. Bruce Ramsay, OVC DVM 1966, passed away on May 11, 2018.

Ted Valli, OVC DVM 1962, PhD 1969, former faculty member at OVC, passed away on Friday, August 9, 2019.

70s

Mike Weber, OVC DVM 1971 and Grad Diploma 1979 grad, passed away on July 6, 2019.

90s

Thomas Kral, OVC DVM 1991, passed away on September 15, 2018.

Faculty

Retired Biomedical Sciences professor **Onkar Atwal** passed away on Tuesday, July 16, 2019.

OVC ALUMNI ASSOCIATION 2019 ALUMNI AWARD WINNERS



Photo provided by Clayton MacKay

DISTINGUISHED ALUMNUS

Dr. Clayton MacKay, OVC DVM 1970, was recognized for his veterinary career, charitable and community contributions with the 2019 Distinguished Alumnus award. Following graduation, he joined his father Dr. Duncan Campbell MacKay in practice and purchased sole ownership in the practice in 1986. Clayton later joined OVC as Director of the Veterinary Teaching Hospital, before joining Hill's Pet Nutrition Canada as the Director of Veterinary Affairs from 1997-2010. He played an instrumental role in establishing a partnership between OVC and Hill's Pet Nutrition, which led to the creation of the Hill's Pet Nutrition Primary Healthcare Centre at the OVC. Clayton has served on the OVC Alumni Association Board, as well as a member of the OVC Pet Trust committee at its founding. With classmates Avery Gillick and John McNally, he led creation of the OVC 1970 Bob Brandt Fund, supporting international students participating in a fourth year DVM EcoHealth elective.

ALUMNI VOLUNTEER

Dr. Doreen Houston, OVC DVM 1980, was recognized for her commitment to giving back to the veterinary profession she loves. She currently chairs the OVC Pet Trust Board, is a member of the OVMA Small Animal Issues Committee, sits on a graduate student committee at OVC and peer reviews for a number of international journals. Following her DVM degree and four years in private practice, Doreen returned to OVC to complete an internship, residency and DVSc in internal medicine. She became a board certified Diplomate of the American College of Veterinary Internal Medicine in 1991. Her career has included time in academia at both OVC and the Western College of Veterinary Medicine in Saskatoon, as well as time in industry with Medi-Cal and Royal Canin. Doreen officially retired from Royal Canin in 2011 and registered her own business, Doreen Houston Consulting.



Photo credit: Dean Palmer

YOUNG ALUMNUS

Dr. Colleen Best, OVC DVM 2009, is passionate about advocating for veterinary well-being. Following her DVM degree, she completed a PhD in the Department of Population Medicine, focusing her research on veterinarian-client and referring veterinarian-specialist communication and relationships in equine practice. During a Post-Doctoral Fellowship as part of the Advancing Wellness and Resilience via Research and Education (AWAR2E) Group at the U of G, she studied factors affecting the mental well-being of veterinarians with the goal to develop training and other support programs for both student and practicing veterinarians. She was instrumental in developing the Resilience for Veterinary Careers Rotation for fourth-year OVC student veterinarians, serving as primary instructor for the rotation from 2016-2019. The rotation focuses on an evidence-based understanding of mental wellness and resilience, including mind-body techniques, relaxation techniques, financial planning and self-care.



Photo credit: Ashleigh Martyn

CONVOCAATION OCTOBER 2019 CONGRATULATIONS TO OUR NEWEST ALUMNI MEMBERS

DOCTOR OF PHILOSOPHY

Farah Wahbeh
Jwar Meetro
Chris Victor Najdienow
Phillip Olszewski
Mackenzie Jessica Wong

PATHOBIOLOGY

Emma Alexandra Borkowski
Jonathon Kotwa
Alexandre Nikolai Leveille

MASTER OF SCIENCE

POPULATION MEDICINE

Clemence Geraldine Renata Nash
Jessica Francesca Reimann
Anastasia Stellato
Andrea Lynn Thomas

BIOMEDICAL SCIENCES

Danielle Marie Halucha
Rebecca Jagroop
Lisa Christine Reynen
Reem Sabry
Lauren Keiko Isaacs
Kate Colleen Nicholson
Hayley Ann Wilson

DOCTOR OF VETERINARY SCIENCE

CLINICAL STUDIES

Claudia Kabakchiev
Xiu Ting Yiew

CLINICAL STUDIES

Alexandra Marie Camara
Angelie Kim Shukla
Julia Luca

PATHOBIOLOGY

Marie Diane Nancy Brochu
Cedric B. Larouche

PATHOBIOLOGY

Michael Edward Edson
Daniel James Gibson
Sarah Victoria Hill
Akash Jairaj
Jonathan Lloyd Moffat
Tamara Mariel Morrill

POPULATION MEDICINE

Michelle Caissie

MASTER OF BIOMEDICAL SCIENCE

Sumetha Balachandran
Alysha Mikayla Briglio
Matthew Wilson Deratnay
Antonius El-Khoury
Sydney Maianne Fautkner
Jodi Ling Hong
Olivia Celina Kostecki
Veronika Laskowski
Sarah Anne Martone
Grace Chia-en Shei
Alvina Yuen Ling So

POPULATION MEDICINE

Karen Marie De Bruyn
Tavleen Kaur Dhinsa
Sydney Victoria Gosselin
Kaushalya Kuruppu
Matthew Douglas McBride
Jordan Lynn Pelkmans
Abhinand Thivalappil
Tom Chen
Kailyn Elizabeth Clarke
Miranda June Hawley
Jocelyn Taylor White
Justin Michael Wurtzel

ALUMNI & REUNION WEEKEND June 19 - 21, 2020

Alumni & Reunion Weekend - June 19-21, 2020 - will not go forward as planned. We are exploring ways to re-envision this important celebration with our alumni community.

Find your reunion and more information at

alumni.uoguelph.ca/alumniweekend

Get involved: Join the OVC Alumni Association

Join the OVC Alumni Association and be part of an exciting opportunity to network and volunteer with other veterinary professionals and OVC community members.

To learn more, contact: Amy Tremaine, Alumni Advancement Manager, OVC Tel. 519-824-4120 ext. 56679 or email: ovcaa@uoguelph.ca

1943



2019

SHEEP CARE THEN AND NOW

Students attending the OVC in 1948 were required to have at least four months of practical farm experience and experience with farm livestock when they applied to the college. They also were trained in the care of ruminants throughout their four years at the OVC (a five-year program was introduced in the 1949-50 year). Subjects involving sheep would have included learning how to give examinations, animal husbandry - including types and breeds, judging (placing with reasons, breeding and market classes), feeding and management,

diseases of ruminants, obstetrics and pathology.

Today, training in care of ruminants continues to be an important part of the OVC curriculum. First-year OVC DVM students learn general principles of health management with small ruminants, as well as how to do physical exams. Upper year students focus on more in-depth learning around health management, developing the skills, knowledge and attitude to assess and advise on sheep and goat production and performance and implement health management programs on-farm. By their

final year, student veterinarians participate in regular farm calls including flock health visits and emergency calls with the Ruminant Field Service, which works with both sheep and goat producers. Fourth year rotations include a lambing and lamb survival elective and a small ruminant hands-on elective with farm visits which develops skills including flock or herd level problem solving, body condition scoring, parasite control strategies, pregnancy diagnosis, lamb and kid post mortems and nutrition and feed management.

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Attention: OVC Marketing Communications,
OVC Main Building, Dean's Office

POSTPONED EVENTS

To help reduce the spread of COVID-19, as of Crest going to print, all University and community events on campus have been cancelled until further notice. Watch the U of G (uoguelph.ca) and OVC (ovc.uoguelph.ca) websites for updated information.

Spring U of G convocation is postponed.

Alumni & Reunion Weekend - June 19-21, 2020 - will not go forward as planned. We are exploring ways to re-envision this important celebration with our alumni community.

Let's Stay Connected at alumni.uoguelph.ca/lets-stay-connected

Update your email contact information at alumnirecords@uoguelph.ca so we can keep you up-to-date on future events. Did you know Alumni Affairs helps organize class reunions? Find more information at www.alumni.uoguelph.ca/alumniweekend/reunions or contact OVC's Alumni Advancement Manager, Amy Tremaine at tremaine@uoguelph.ca or 519-824-4120 ext. 56679.

The University of Guelph, and by extension OVC, is a registered charity. Your contribution can support the area of your choice or OVC's highest priority at the time. Visit our giving page at ovc.uoguelph.ca/give. Tax receipts are provided.

The University of Guelph charitable registration number:
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