

# VET CANDY

April 2023

**U.S. UNPREPARED  
FOR DANGERS  
POSED  
BY ZOO NOTIC  
DISEASES,  
SAYS STUDY**

**PUPPIES MATCH  
HUMAN ACTIONS,  
WHILE KITTENS ...  
NOT SO MUCH...**

**BENEFITS OF  
HEALTHY GENDER  
BALANCE**

**HOW TO  
CATEGORIZE  
PLAY AND  
GENUINE  
FIGHTING  
IN CATS**

**CANINE DISTEMPER  
NOW THREATENS  
BIG CATS**

## THE ADVENTURE BEGINS!

Meet the women of Tier 1

+ much more

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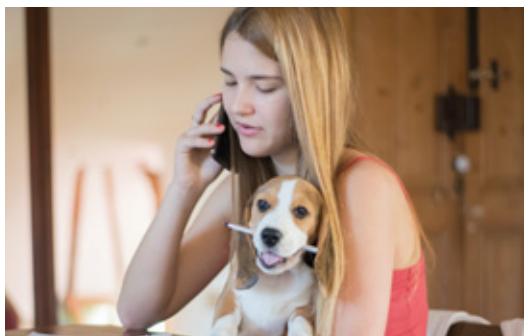
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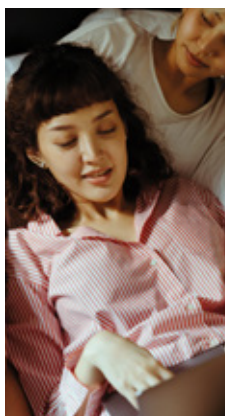
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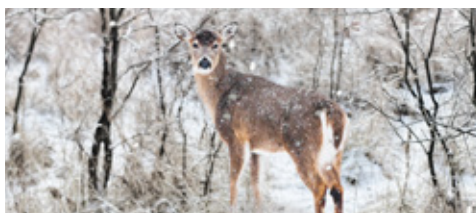
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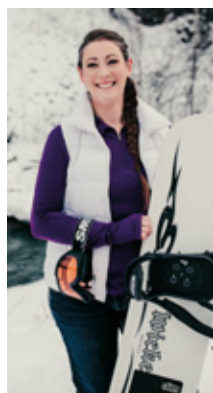


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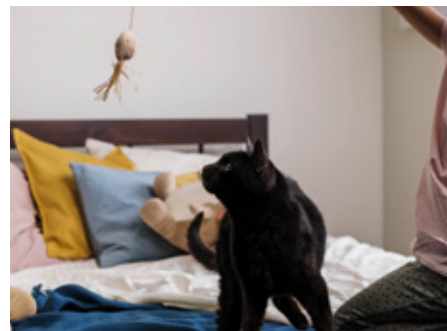
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*Welcome to the world of*  
**VET CANDY**

*Dr. Jill Lopez*



Last month was National Women's History Month, but did you know how it all started? Years before there was a full month, there was Women's History Week, which was proclaimed by President Jimmy Carter in 1980. In his proclamation, Carter noted that men and women have worked together to help build the United States since the country's founding.

"Too often, the women were unsung and sometimes their contributions went unnoticed," he wrote. "But the achievements, leadership, courage, strength, and love of the women who built America was as vital as that of the men whose names we know so well."

Our cover models this month feature an incredible veterinary team from Tier 1 Veterinary Medical Center in Alaska. When I say that everyone has a great story to tell, that is never truer than this issue. We also have some great advice on how to embrace equity in your clinic and of course, the latest clinical updates.

Let's imagine a gender equal world. A world free of bias, stereotypes, and discrimination. A world that's diverse, equitable, and inclusive. A world where difference is valued and celebrated. Together we can forge women's equality. Collectively we can all #EmbraceEquity.

This month and beyond, I encourage you to celebrate women's achievement. Raise awareness about discrimination. Take action to drive gender parity.

**VET CANDY**  
*Welcome to the world of*

# Five Things you don't know about Dr. Sara Mc. Peck

By Dr. Jill Lopez

**Success doesn't happen overnight. It takes months (often years) for a person to grow from an animal loving kid into the professional and thriving veterinarian they were always meant to be.**

Dr. Sara Mc. Peck, a Massachusetts native and mom of three, is the co-owner of one of the largest veterinary practices in Alaska, Tier 1 Veterinary Medical Center. We caught up with this busy boss mom to find out more!

1. Dr. Sara is a graduate of Mississippi State College of Vet Med.

2. After graduating, she served four years in the U.S. Army as a Veterinary Officer where she was responsible for more than 350 military working dogs.

3. As a Veterinary Corp Officer, she received a variety of awards, including a Bronze Star, a NATO Medal, a GWOT Medal, two Army Accommodation Medals, among many others.

4. While in officer training at Fort Benning, Georgia, she met and later married the love of her life, Dr. Sean McPeck.

5. At first, Dr. Sara hated the idea of living in Alaska, she was a born and bred New Englander and couldn't imagine a life far away from the east coast. But after moving there and starting her family, she now couldn't imagine living anywhere else.



“Alaska is home to 17 of North America's tallest mountains and has more than 3,000 rivers and 3 million lakes,” says Dr. Sara, “If you love the outdoors like we do, Alaska is definitely a place you can live your dream.”

”

# STUDY SHOWS SOME TYPES OF DOG RECEIVE A CANCER DIAGNOSIS *at younger age*



A new analysis has determined median ages of cancer diagnosis for dogs with different characteristics, providing support for the establishment of cancer screening guidelines that vary according to breed or weight.

More adult dogs die from cancer than from any other cause. Just as in humans, detecting canine cancer earlier can enable more effective treatment. New, noninvasive blood tests for dogs can detect tumor DNA long before other signs of cancer arise. However, formal guidelines for when dogs should be screened using these tests are lacking.

To aid establishment of such guidelines, Rafalko and colleagues sought to determine the median age at cancer diagnosis of dogs with different characteristics. Their analysis included 3,452 dogs with cancer in the U.S.

They found that the median age at cancer diagnosis for dogs weighing 75 kilograms or more was 5 years, compared to 11 years for dogs weighing 2.5 to 5 kilograms. The mean diagnosis age for purebred dogs was 8.2 years, compared to 9.2 years for dogs whose breed was described as mixed or "other."

Among breeds with enough representation in the study, the researchers were able to determine that Mastiffs, Saint Bernards, Great Danes, and Bulldogs had the youngest median diagnosis age, at approximately 6 years. Irish Wolfhounds, Vizslas, and Bernese Mountain Dogs had median diagnosis ages of 6.1 to 7 years. At 11.5 years, the Bichon Frise had the oldest median diagnosis age.

Female dogs were typically diagnosed at older ages than males, and dogs that were neutered were diagnosed later than intact dogs.

The researchers also developed a statistical model to predict median diagnosis age based on weight, which could be applied to breeds with less representation in the study and to mixed-breed dogs.

Considering these findings in combination with evidence from prior studies, the researchers propose that canine cancer detection could be improved through blood test-based screening beginning 2 years before a dog reaches the median diagnosis age for their breed or weight.

**Read the full study by clicking the link below:**



**CLICK HERE**



# Benefits of healthy gender *balance*

By Shauna Simmons

Equal rights regardless of gender identity or sexual orientation.

Gender balance, also referred to as gender equality, is the equitable distribution of resources between men, women, and everyone else regardless of gender identity or sexual orientation. Sadly many conversations and issues surrounding gender balance have historically fallen into the laps of women. Women have been actively fighting for their space in society for a long time. From their right to vote, to their freedom to move about without being overshadowed by men.

Women's rights and gender balance go hand in hand. While women may have started the fight, equal rights are necessary for the joy of everyone living in the structures of society. That means gender balance does not only serve to benefit women. Men, women, trans, non-binary, and children all stand to benefit from gender balance.

## **Equal Opportunity = Diversity and Growth**

Encouraging gender balance at home and in work spaces would naturally boost growth and diversity. For small businesses, companies, or even families gender balance provides everyone the space to contribute. Equal rights mean distributing resources, work, responsibilities, opportunities, and expectations evenly among everyone. This challenges a lot of people's old-fashioned views on what gender roles are, and how a family "should be" run. Gender

balance also means listening to potentially under-represented groups of people to help generate a more authentic environment for gender balance to thrive.

## **Safer & Healthier Communities**

Gender balance helps to encourage safer and healthier communities. It supports children, families, parents, and other adults in society. Especially adults that do not fall within the socially acceptable demographic of white European men. When any person or group of people is intentionally constrained from reaching their fullest potential, society as a whole naturally suffers. Gender balance helps to guarantee that everyone has equal opportunities. Equal opportunity in turn allows everyone a healthy and safe space to contribute their best to their communities and society. Gender balance would help navigate responsibilities among families for work and at home (children, cooking, cleaning, chores, bills, etc.). It would also provide everyone with equal opportunity for financial independence.

Gender inequality is a threat to everyone, regardless of their socioeconomic background. Men, women, trans, non-binary, and other gender-diverse people seeking safe and healthy home or work environments stand to benefit from gender balance. Hopefully, as we build a better understanding of what gender balance means, we can break down harmful gender stereotypes. More people will learn how these stereotypes have caused harm to our society. Then we can find new, healthier ways to navigate structures surrounding sexuality and gender.



# PUPPIES MATCH HUMAN ACTIONS, WHILE KITTENS . . . NOT SO MUCH . . .

According to a new study published in Scientific Reports puppies - but not kittens and wolf pups - tend to spontaneously imitate human actions, even when they are not rewarded with food (or toys). The researchers of the Department of Ethology at Eötvös Loránd University (ELTE), Budapest, investigated whether young puppies, kittens and wolf pups have different tendencies to observe and imitate what a person did, without any pre-training and food reward.

Doing what others do in a new situation is a convenient way for young individuals to learn about the world. The tendency to copy the behaviour of others is not only useful to learn new skills or new information, but is also a way of promoting belonging to a social group.

Dogs, cats and wolves differ in their domestication histories and innate sociality, which may influence their tendency to observe humans and learn socially from them.

The scientists first checked how 42 puppies, 39 kittens and 8 wolf pups, all socialized and living in human families, acted with a novel object placed in a room (e.g., touching it with the nose or paw).

Next, while the owner was holding the subject, the experimenter demonstrated a different action on the object. For example, if the subject previously touched the object with its nose, then the experimenter touched it with her hand. Then the researchers observed whether the subject eventually performed the same action on the object.

“Since paying attention to the demonstration is a fundamental requisite for social learning, we first assessed whether the puppies, kittens and wolf pups looked at us when we performed the demonstration”, explains Claudia Fugazza, lead researcher of the group. “While typically the puppies looked at us almost immediately, it took four-five times longer to get the attention of wolf pups and kittens”.

Puppies and wolf pups replicated the demonstrated actions in 70% of the trials, twice as often as kittens, but only the puppies tended to imitate the action with a body part homologue to the human experimenter (e.g., paw – hand), even if that action differed from the action they performed when they had not observed a demonstration.





“Typically, most subjects touched the object with their nose, when they had not observed a demonstration. However, after observing the experimenter touching the object with her hand, the puppies tended to touch it using their paw”, reports Stefania Ucheddu, co-author of the study. Kittens and wolf pups did not copy the action.

The results seem to support the effect of both investigated factors - inherent sociality and domestication history: “While dogs’ and wolves’ ancestor was a group-living, social animal, with intense within-group cooperation for survival, cats’ ancestor was a solitary hunter”, explains Andrea Temesi, co-author of the study.

“Both, dogs and cats are domesticated species that today live in human families, but the dog was domesticated much earlier than the cat (between 20000-40000 years vs. 10000 years ago) and dogs were selected for several forms of cooperation with humans. Cats had a different domestication process; they hunted mice and rats in the human environment, but did not have to cooperate or communicate with humans”, continues Márta Gácsi, co-author of the study.

Thus, it is not surprising that only puppies have developed the tendency to pay close attention to people and imitate their actions, even if there is no specific reason for doing so, such as getting food.

These results are intriguing, not only from a theoretical perspective, but also from an applied point of view:

“We believe that our findings can form the basis for the development of novel training methods that rely on the tendency of puppies to learn by observation and to imitate human actions. This way, dog training can be less dependent on the use of food rewards and more able to take advantage of dogs’ natural propensity for social learning”, concludes Ákos Pogány.



# Green flags vs. red flags in a relationship

By Shauna Simmons

**T**he skill of developing healthy relationships is underrated. We all know healthy relationships are important, but when work is required we often turn a blind eye.

When it comes to our relationships, there is potential for an abundance of love, affection, joy, and comfort with ourselves and with others. The downside to this is that unhealthy relationships left unchecked can cause a lot of distress in our day-to-day lives. Without accountability in our relationships, balance can easily become thrown off. How do we learn to navigate healthy relationships?

# Red Flags vs. Green Flags

If you have ever been in a relationship of any kind, you know there are good and bad qualities present in just about everyone. This means that you have to understand yourself and your needs to navigate a healthy relationship with someone else. That way you know your triggers and deal breakers for when it's necessary to start setting healthy boundaries.

## Red Flags

These are the qualities in another person that are either triggering for you or just unfavorable for a healthy relationship. Red flags occur when someone refuses to respect your boundaries or to give you space when you need it. This is a sign of a toxic dynamic where one person is always looking to please for the other person. Relationships are a give-and-take back and forth, not one person gives and the other takes limitlessly.

Other red flags to look out for include someone who cannot respect the decisions you make. This could range from financial decisions to moral decisions. Another red flag is someone actively working to undermine you, gaslight you, or belittle you. These are all narcissistic traits that display a level of insecurity about a person. Most times, when a person cannot navigate or regulate themselves, it comes out as a form of projection. This projection can be random, but it can also be a common red flag in unhealthy relationships.

## Green Flags

Green flags are what we look for and want more of in a healthy relationship. This comes in healthy forms of validation and encouragement when you are dealing with an obstacle. Green flags can be compliments or random acts of kindness intended to uplift you. A healthy relationship means two people with their own set of boundaries and respect for one another's boundaries.

It can be difficult to learn between red flags and green flags in a relationship. Taking the time to be patient with yourself as you discern between healthy and unhealthy is very important. Just remember, red flags mean it's time to slow down and address something. While green flags are a sign that you are on the right track.





# Non-processed meat-based early diet reduces risk of dog digestive issues later in life

A diet of non-processed meat, human leftovers, and raw bones during puppyhood and adolescence may protect dogs against certain gastrointestinal disorders later in life, suggests Peer Reviewed research published in *Scientific Reports*. In contrast, a highly processed carbohydrate-based kibble diet and regular rawhide chews were associated with increased risk of gastrointestinal problems. These findings could have implications for gut health in pet dogs.

Kristiina Vuori and colleagues used data from the DogRisk food frequency questionnaire, established in 2009 at the University of Helsinki, to explore associations between dogs' diets in early life and owner-reported incidence of chronic enteropathy (CE) – an on-going gastrointestinal disorder characterised by diarrhea, vomiting, and weight-loss – later in life.

Owners reported what types of foods they had fed their dog and how often, during puppyhood (two to six months old) and adolescence (six to eighteen months old).

The diets were then associated with whether the dogs developed chronic CE later in life or not. The sample consisted of 4,681 diets of puppies and 3,926 diets of adolescent dogs, of which owners later reported CE symptoms in 1,016 (21.7%) from the puppy and 699 (17.8%) from the adolescent diet group individuals.

## Findings

The authors found that, compared to a highly processed kibble diet, dogs fed a non-processed meat-based diet – including raw red meat, organs, fish, eggs, and bones, but also vegetables and berries – or human leftovers and table scraps including items such as cooked potatoes, and cooked fish in puppyhood or adolescence were significantly less likely to experience CE symptoms later in life.

Non-processed diets and leftover foods in puppyhood reduced associated CE risk by 22.3% and 22.7% respectively, whereas associated CE risk was 28.7% greater with a highly processed diet. In adolescence, non-processed diets and leftovers saw reduced risks of 12.7% and 24% respectively, compared to 14.6% greater risk of CE with a highly processed diet.

## Other results

For specific foods, the authors report that feeding puppies raw bones or cartilage a couple of times a week was associated with a 33.2% reduced risk of CE, while feeding berries a couple of times a year saw a reduced risk of 28.7%. However, giving puppies processed and chemically treated rawhides daily was associated with a 117.2% increased risk of CE.

These findings suggest that providing puppies with a variety of non-processed and whole foods early in life may reduce the risk of future incidences of CE, according to the authors. However, further studies – including those assessing diet over the lifetime of dogs – are needed to confirm the results.

# The golden days of Megan Kinney

Megan Kinney sure has her hands full.

She is a mother (as well as fur momma to Pembroke Welsh Corgis), wife, friend, daughter, and Licensed Veterinary Technician all bundled into one package! A graduate of the University of Colorado, Denver and Bel Rea Institute of Animal Technology, Megan has been working in the veterinary field since 2013.

But no matter how busy she gets or what challenges life throws at her, Kinney stays true to her vision: offering the gold standard of care.

Today, Megan Kinney gives us a sneak peak into her life. **Green flags vs. red flags in a relationship**

Introducing, a vet tech whose dedication knows no limits, Megan Kinney!

## It's Not a Bad Life. Just a Bad Day

Taking care of animal patients and their families isn't always easy. From long hours and sleepless nights to physical demands and emotional burnout, those employed in the veterinary field face extraordinary pressure.

Consequently, it can be hard to keep your spirits up. One way Megan Kinney manages to stay positive is to repeat the best career advice she ever received like a mantra.

She encourages people to remember, "It's not a bad life, just a bad day."

And when all else fails, she thinks about the one person she admires most in the whole wide world, her mother.

Megan explains, "I admire my mom for her commitment to family. I owe her everything for showing me what unconditional love is. She is patient, compassionate, and genuine. Yet she has no problem being brutally honest when needed. I admire her more than she'll ever know. You'll never know how much I look up to you, Mom!"

Currently, Megan is developing special interests in anesthesia and emergency medicine. Her commitment to care and "can-do" attitude will surely serve her well in these endeavors.



## Additional Q & A

**What should everyone try once in their lifetime?**

Jumping out of a perfectly good airplane! AKA, skydiving.

**Books that left a lasting impression on you?**

Because of Winn-Dixie.

**Who will you be in 5 years?**

A more refined, vintage version of the me that I am today.

**Who was your hero growing up?**

My daddy!

**What advice would you give your younger self?**

Stop caring about what other people think.

**How do you clear your head after a long day?**

Watch a good TV series and spend time with loved ones

**What adventure has most changed your life?**

My children. They are the most wonderful blessings!

# Is egg freezing for you?

By Shauna Simmons

## From Fertility Issues to Backup, Take Initiative

If you are a woman who hopes to get pregnant at any point in your life, egg freezing might be worth considering. Egg freezing is the process by which unfertilized eggs are taken from your ovaries and frozen and stored for future use. This is a great option for women who aren't ready for children but don't want to miss out on their opportunity to have kids. It's also an incredible option for women coping with fertility issues, or those who fear fertility issues down the line.

For women, egg freezing is a huge deal. Our biological clock is pretty set in stone. This means you are born with your egg reserves for the rest of your life. So from the moment you are born, your eggs are developing in your body. From the moment you begin your first period, you begin to deplete your egg reserves. Once they are gone, your chance for biologically giving birth to a child is gone. This is why some women consider freezing their eggs.

## Talk to Your Doctor

If you are interested in egg freezing at all, you need to talk to your doctor. They are most equipped to handle the situation as you move forward with making a decision. It's important to note that certain illnesses or types of cancer do place a window time for when you can go through with the freezing process. Making sure your doctor is aware of your interest as soon as possible will leave you with the most favorable outcome.



## It's for Backup

Remember if you choose to go forward with freezing your eggs you won't cause harm to your body. The eggs are taken from your natural reserves and stored for later use. This means in the absence of complications, you will still have the option of having children the old-fashioned way. But it also provides comfort and backup in case you do need to tap into your frozen eggs in the future. There is nothing wrong with desiring security as a woman through egg freezing.

# Study finds white-tailed deer may serve as reservoir for nearly extinct SARS-CoV-2 variants

*by Krishna Ramamujan*

White-tailed deer — the most abundant large mammal in North America — are harboring SARS-CoV-2 variants that were once widely circulated but no longer found in humans.

The study, “White-tailed Deer (*Odocoileus virginianus*) May Serve as a Wildlife Reservoir for Nearly Extinct SARS-CoV-2 Variants of Concern,” which was published Jan. 31 in the journal *Proceedings of the National Academy of Sciences*, represents one of the most comprehensive studies to date to assess the prevalence, genetic diversity and evolution of SARS-CoV-2 in white-tailed deer. The study focused on the white-tailed deer population in New York.

“One of the most striking findings of this study was the detection of co-circulation of three variants of concern — alpha, gamma and delta — in this wild animal population,” said Dr. Diego Diel, associate professor of population medicine and diagnostic sciences and director of the Virology Laboratory at the Cornell University College of Veterinary Medicine’s (CVM) Animal Health Diagnostic Center.

Although the exact cause remains unknown, research indicates that over the course of the pandemic, deer have become infected with SARS-CoV-2 through ongoing contact with humans, possibly from hunting, wildlife rehabilitations, feeding of wild animals or through wastewater or water sources.





This study was made possible thanks to a program co-designed by Dr. Krysten Schuler, assistant research professor of public and ecosystem health at CVM and a senior author of the study. As director of the Cornell Wildlife Health Lab, Schuler has worked with the New York State Department of Environmental Conservation to design a statewide surveillance program for chronic wasting disease in white-tailed deer. The program collected thousands of samples of deer lymph tissues taken from deer killed by participating hunters.

“We were able to leverage those samples that had already been collected and then test them for SARS-CoV-2, so we had a good statewide representation,” Schuler said.

The testing revealed potential hotspots of infection across the state, including seven clusters where samples from a defined geographic area all contained the same variant. Samples from one cluster, for example, confined to one county, all tested positive for the gamma variant. Similar clusters were also found for alpha and delta variants in different locations in the state.

When researchers compared the genomic sequences of the variants found in deer with sequences of the same variants taken from humans across New York, they found the viruses had mutated in the deer, suggesting the variants had likely been circulating in deer for many months.

By the time alpha and gamma variants were detected in deer, for example, there was no evidence of these viral strains still circulating in humans. In fact, when they were found in deer, neither variant had been detected in humans in New York for four to six months.

In future work, Diel and colleagues hope to assess the effect of the viruses’ mutations, including whether these changes make the virus more or less capable of binding to human receptors. Currently, only one study published in Canada has documented a case of a human being infected by SARS-CoV-2 that originated in deer.

“Obviously, humans are still the primary reservoir and the likelihood of anybody getting SARS-CoV-2 is from another human rather than a deer,” Schuler said.

More research is needed to confirm whether white-tailed deer have truly become a reservoir for these variants now extinct in humans or whether the variants will disappear over time in the wild. Other questions include whether the deer might spread SARS-CoV-2 to other wildlife animals, including predators.



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# Meredith Mapes:

## Fearless, fun, and defying our expectations

By Jen Boon

Some people like dogs.

Others “paw-sitively” love them! If you happen to visit Meredith Mapes’s home, you will instantly know which camp she falls into.

That’s because her fur family consists of not one or two dogs, but a whole pack. In fact, her pets include a Cavalier King Charles Spaniel, a Dutch Shepherd, three Border Collies, a three-legged sled dog, plus 20 racing sled dogs.

Wow!

Yes, for this Licensed Veterinary Technician and Iditarod dog musher, every day is filled with dogs, dogs, and more dogs.

Meredith Mapes is by far one of the most adventurous staff members at Tier 1 Veterinary Medical Center (Alaska’s largest privately owned veterinary hospital) and we are so excited to introduce her to our readers!

### From Sled Dog Racing to Primary Veterinary Technician

Originally born in Texas, Meredith is as rooted in the Alaskan wilderness as they come. When just a baby, her parents decided to swap out hot and dry weather for a more remote and northern climate. Instantly, she took to her new Alaskan life.

She even participated in the Junior Iditarod.

Meredith shares:

“It’s a 150-mile sled dog race for kids aged 14-17 years, that is basically unsupported. You must be self-sufficient enough to take care of your 10 dogs and yourself for 24 hours in the literal wilderness of Alaska. Running that for the first time at 14 was entirely life-changing. I wouldn’t be half the person I am today without that experience. And then I did it three more times as a kid and each year was a different challenge to overcome.”

From there, she worked as a sled dog tour guide for ten years.

And while she continues to run tours part-time, ultimately Meredith Mapes says that her heart lies with the veterinary community. Nowadays, she is a Primary Veterinary Technician extraordinaire at Tier 1.

Meredith credits perseverance, dreaming big, and striving to learn at all times for her success.

“I like to work in a place where I feel like I’m always learning, even if the work is hard and even if I feel like I might not be qualified to be there,” she explains.



"But I would never have finished the Iditarod in 2018 if I had given up at any point in my mushing career previously. I had every opportunity to turn away and say Iditarod was too hard, there was no way I'd ever make it to the starting line with my own team, or I could have quit at any point during the race when the going got tough. But I kept mushing and crossed that finish line proudly! I love to push myself and I love learning. Which is why I'm excited to have stepped into an oncology position at my clinic this year. I feel like I'm learning so much every day."

We agree!

Being a lifelong learner is important in the field of veterinary medicine.

## More Peace and Less Hate

Above all, Meredith admires compassion for people, animals, and the world around us.

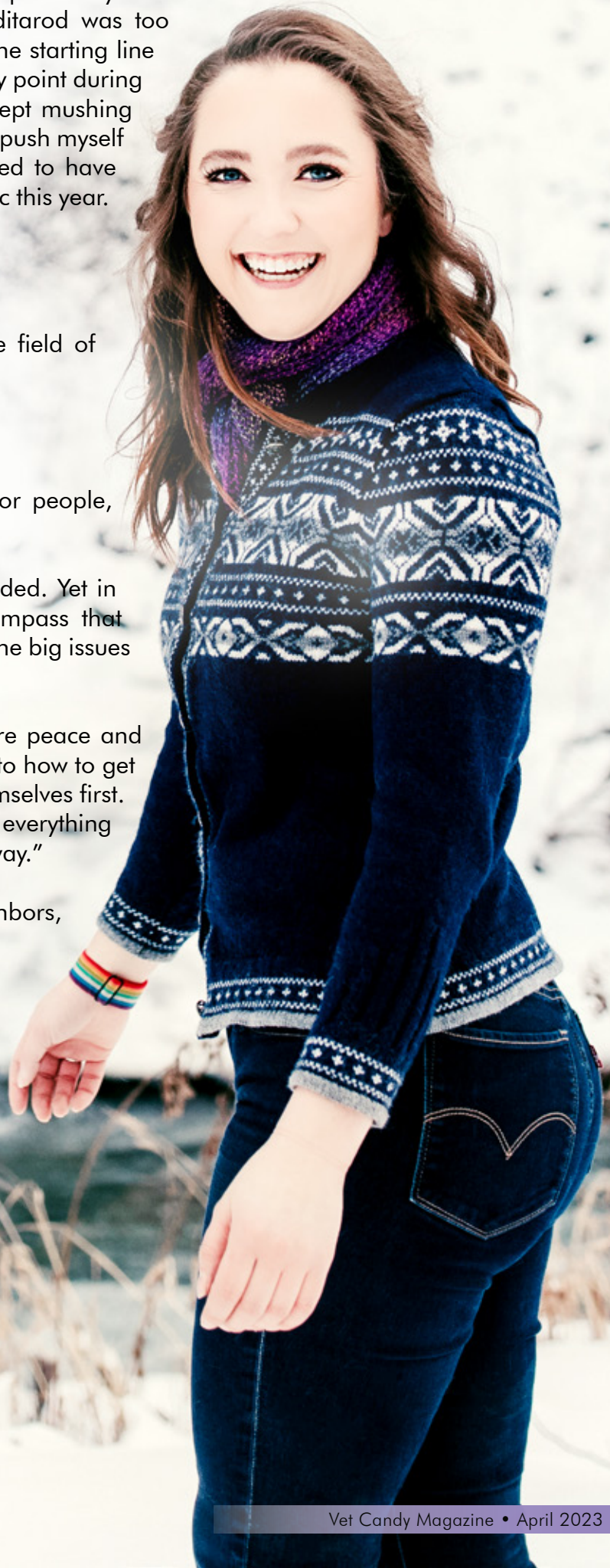
Some say society has never been more divided. Yet in times like these, compassion acts as a compass that points us forwards and helps solve many of the big issues humanity is faced with today.

Mapes points out, "I would love to see more peace and less hate. I don't have any good answers as to how to get there. I think everyone needs to work on themselves first. But if we take care of mother nature and everything around us, everything flourishes in a good way."

That includes looking after family, pets, neighbors, the local community, and yourself too.

Meredith's final words of advice?

"Take the leap, do all the things you want to do while you can!"





# U.S. unprepared for dangers posed by zoonotic diseases, *says study*

The United States, the largest importer of wildlife in the world, is not prepared for future spread of animal-borne, or zoonotic, diseases due to gaps among governmental agencies designed to combat these threats, concludes a new analysis by researchers at Harvard Law School and New York University. The authors call for a “One Health” approach, integrating multiple agencies in order to better govern human-animal interactions.

The editorial, “Blind spots in biodefense,” which appears in the journal *Science*, is authored by Ann Linder, a research fellow at Harvard Law School’s Brooks McCormick Jr. Animal Law & Policy Program, and Dale Jamieson, a professor at New York University’s Center for Environmental and Animal Protection in the Department of Environmental Studies.

Linder and Jamieson note that the Biden administration’s recent release of its National Biodefense Strategy (NBS-22), the first update since the COVID-19 pandemic began, frames threats as largely external to the United States.

“NBS-22 focuses primarily on bioterrorism and laboratory accidents, neglecting threats posed by routine practices of animal use and production inside the United States,” they write.

This oversight is significant, Linder and Jamieson observe, given the United States’ past and present when it comes to human-animal interface:

- More zoonotic diseases originated in the United States than in any other country during the second half of the 20th century.
- In 2022, the U.S. processed more than 10 billion livestock, the largest number ever recorded and an increase of 204 million over 2021.
- The ongoing H5N1 avian influenza outbreak has left 58 million animals dead in backyard chicken coops and industrial farms in the U.S.
- Since 2011, the U.S. has recorded more swine-origin influenza infections than any other country. Most occurred at state and county fairs, which attract 150 million visitors each year and where an estimated 18% of swine have tested positive.

Moreover, they add, the current patchwork of siloed agencies and authorities is marked by a lack of coordination, leaving significant gaps and areas of underregulation. In fact, of the many agencies that govern food animal production, the U.S. Department of Agriculture is the most important, but it has no authority to regulate on-farm animal production.



The authors call for rebuilding from the ground up the U.S. regulatory system in order to combat zoonotic disease risk.

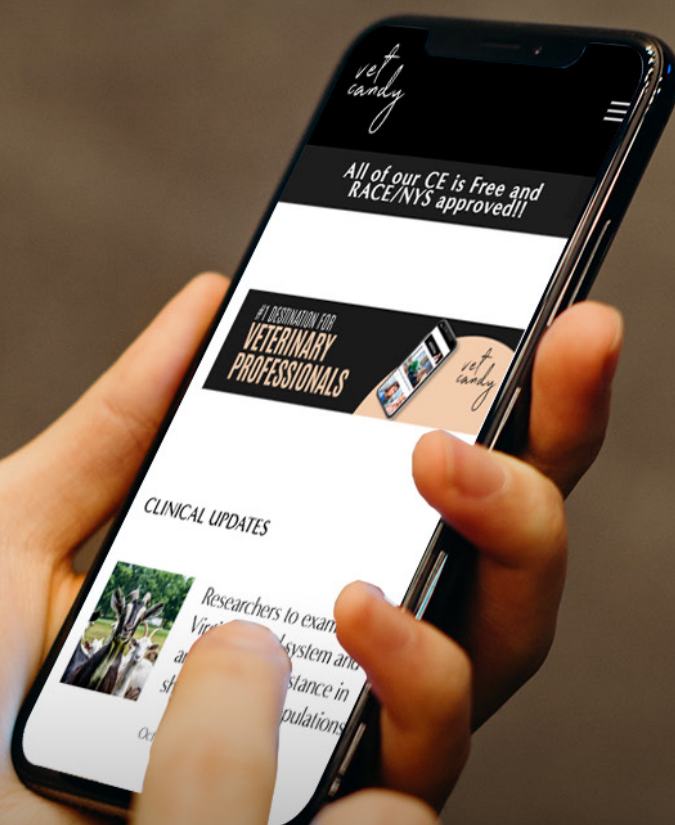
“What is needed is not simply for agencies to do their jobs better or to paper over the gaps, but a fundamental restructuring of the way that human–animal interfaces are governed,” Linder and Jamieson urge. “A One Health approach, which NBS-22 claims as its guiding principle, would take the health of other living things not merely as the occasional means or obstacles to human health, but as continuous with it. The first step in implementing such an approach would be to create a high-level process for integrating the broken mosaic of multiple agencies, with their unclear and sometimes competing mandates, into an effective, comprehensive regime.”

The editorial is based on research from the Live Animal Markets Project, which is examining global policy responses to animal markets and their role in zoonotic disease transmission. The project includes 15 individual country case studies involving local collaborators, partner institutions, and members of the core research team.

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# CANINE DISTEMPER NOW THREATENS BIG CATS

Researchers with the Cornell College of Veterinary Medicine have confirmed the first cases of canine distemper virus (CDV), which can cause fatal neurological disease, in tigers and leopards in Nepal.

“Canine distemper virus has been repeatedly identified as a threat to wild carnivores and their conservation,” said Martin Gilbert, Cornell Wildlife Health Center wild carnivore health specialist and associate professor of practice in the Department of Population Medicine and Diagnostic Sciences. “This study is a first step to understanding the potential impact for Nepalese tiger and leopard populations.”

Although researchers have suspected distemper was infecting these species, the study, published Jan 28 in the journal *Pathogens*, is the first definitive proof of infection in Nepal’s big cats. The survey found 11% of tigers (three out of 28) and 30% of the leopards (six out of 20) had antibodies to CDV, indicating prior infection with the virus.

Relatively little is known about the status of Nepal’s leopards, but scientists believe the population is in decline due to a combination of poaching, habitat loss and human-wildlife conflict. Leopards also face increasing competition for space due to the expansion of the country’s tiger population. Could CDV push them even further into decline?

Unlike leopards, “tigers are enjoying a resurgence in Nepal,” Gilbert said. “Their national population has almost tripled in size over the past 12 years – however, globally the species remains endangered.” As the larger and stronger of the two species, tigers have been displacing leopards from national parks and forcing them into areas with more people, where they often prey on street dogs.



Based on the findings of this paper, these dogs may be the source of infection. “We already know CDV is circulating in the Nepali dog population” said Dr. Jessica Bodgener, a veterinarian with Wildlife Vets International, who co-authored the paper, “and that leopards frequently eat dogs, while tigers do not. When we found a greater exposure in leopards it seemed like a good fit, but we need more evidence to be sure. And we can’t forget three tigers also tested positive. If tigers aren’t eating dogs, it raises the question, how did these animals get infected? The situation may not be straightforward.” Other species that could be acting as reservoirs include wild carnivores such as jackals and civets.

The team examined blood samples collected from tigers and leopards between 2011 and 2021 by veterinarians working for Nepal’s Department of National Parks and Wildlife Conservation and the National Trust for Nature Conservation (NTNC). These were opportunistic samples, with most of the captures occurring as part of routine wildlife management. Routine collection and archiving of samples like these are important for investigating disease.

In many places, CDV surveillance is hampered by a lack of local laboratories set up to run the appropriate tests. Access to specialist international labs can be blocked by export bans or slowed by permit application processes. To sidestep these issues, Gilbert’s team chose not to export the samples, but to partner with the Agricultural and Forestry University in Chitwan to establish testing in Nepal, something they hope to see replicated elsewhere.

“Establishing national testing facilities that can support coordinated CDV research and surveillance efforts is both highly desirable and achievable, and should lead to increased sampling and collaboration,” Gilbert said.

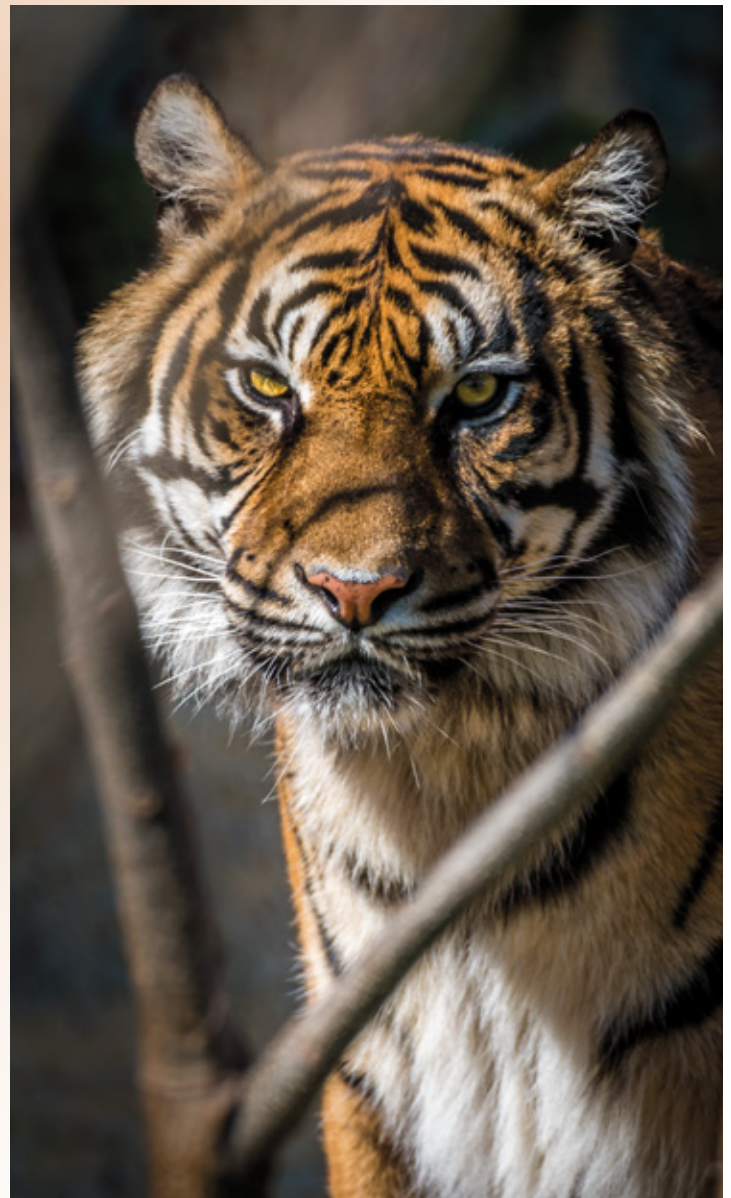
With the presence of the virus confirmed in these populations, the research team recommends several immediate actions:

- Wildlife managers should be made aware of the threat posed by CDV to leopards and tigers and encouraged to report signs of neurological disease.
- Testing of leopards and tigers should be expanded to include molecular testing and genetic sequencing, as well as continued monitoring of antibodies.
- To inform appropriate control measures, such as vaccinating dogs, or potentially the big cats themselves, researchers should confirm which animals are acting as reservoirs for CDV.

- Because small, isolated populations are most at risk, efforts should be made to increase habitat connectivity through wildlife corridors.

“Since 2014, we have seen 10 leopards showing neurological disease that could be consistent with CDV infection,” says Dr. Amir Sadaula, NTNC veterinarian, who led the Nepali research team. “With increased awareness, we plan to confirm future cases and obtain genetic sequences to help determine the source of infections.”

Gilbert and his team plan to continue their work in Nepal, particularly on the under-studied leopard. Research is already underway to introduce more comprehensive big cat health assessments in a bid to understand the potential roles of injury and disease in increasing the likelihood of conflicts with people. Meanwhile, ongoing ecological fieldwork is investigating how the predation of domestic dogs may be influencing the behavior and distribution of leopards outside of national parks.





# REBECCA WALKER'S FEARLESS FUTURE

By Jen Boon

## All About Rebecca Walker

For Rebecca Walker, working with animals is more than a job.

It's a calling.

Originally from Kodiak Island, Rebecca has over fifteen years of experience working primarily in small animal facilities. In her current role as Lead Technician at Tier 1 Veterinary Medical Center, Walker knows it takes perseverance, integrity, collaboration, and teamwork to make a veterinary animal hospital run smoothly.

Luckily, she has got these qualities in spades!

Today, Rebecca shares the best career advice she ever received and answers some interesting questions from the perspective of a vet med professional.

## KNOWLEDGE IS POWER

In addition to her daily duties, Rebecca Walker considers herself a lifelong learner. She is always thinking about next steps. Rehabilitation and pain management are two areas of educational interest. When asked about career advice, Rebecca recalls being told the following.

"Investing in your brain is the best investment you can make and never a waste of money," she explains. "Knowledge is power."

Likewise, the easiest career decision she ever made also had to do with education. In Rebecca's case, it was studying to become a Cat Friendly Veterinary Professional (CFVP).



# ADDITIONAL

## Q & A

### Who do you admire and why?

The technician in charge of my veterinary technician program at Portland Community College, Dolores Galindo. She was classy, compassionate, courageous, supportive, and a pioneer as the first LVT to sit on the Oregon State Veterinary Medical Board.

### How did you make your first dollar?

My first job was as a dishwasher at the only Mexican restaurant on Kodiak Island (that I still think has the best tasting food between here and Florida).

### How I clear my head after a stressful day?

Go for a run.

### What should everyone try once in their lifetime?

Horse archery.

### Books that left a lasting impression on you?

The Power of One by Bryce Courtney.

### What advice would you give your younger self?

Travel.

### If you were not a vet tech, what would you be?

Echocardiographer.

Of course, being from Alaska, it's no surprise that Rebecca also loves the great outdoors! When not at the hospital, you can find her sharpening her aim through mounted archery, hanging out with her husband, or snuggling with her doodle-mutt named Beaker and cat Bonsai.



A black cat with yellow eyes is looking intently at a green, textured rope toy held by a hand. The background is blurred, showing a person in a blue shirt. The title 'How to categorize play and genuine fighting in cats' is overlaid in white and light blue text.

# How to categorize play and genuine fighting in cats

The behaviour of cat interactions has been categorised into playful, aggressive and intermediate groups that may help owners distinguish between play and genuine fighting. The study, published in Scientific Reports, suggests that cats may engage in a mixture of playful and aggressive behaviours, which could escalate into a fight if not managed by the owner.

Noema Gajdoš Kmecová and colleagues evaluated 105 video clips sourced from YouTube and directly from cat owners of interactions between 210 cats. Based on initial observations of the cats, the authors assembled six observable behaviour categories including wrestling, chasing and vocalisation, which they then used to assess the remaining cats. Cats were grouped based on the frequency and duration of the six behaviours. Separately, four of the authors reviewed the same videos and came up with three groups to define the interactions between cats: 'playful' (friendly interactions); 'agonistic' (aggressive interactions); or a third category, 'intermediate' (a mixture of both playful and aggressive behaviour).

More than a half of the cats (56.2% or 118 cats) were described by the authors as playful in their interaction, 28.6% (60 cats) were labelled as agonistic, and 15.2% (32 cats) were labelled as intermediate.

When comparing the cat behaviour groups with the three interaction groupings defined by the authors, they found that wrestling behaviour between cats was most closely associated with the playful group, while vocalization and chasing were associated with the agonistic group. The intermediate group, while observed as having characteristics of both, was more closely related to the playful group than the agonistic group. The intermediate group showed prolonged exchanges of behaviours such as laying on their back with their belly upwards, pouncing, stalking, and approaching and grooming each other.

The authors suggest that this combination of playful and aggressive behaviours may reflect a short-term disagreement in social behaviour between the cats, rather than a break-down in the relationship. The authors suggest that identifying potential tension between cats may help owners manage the relationship to avoid escalation and the need for separation.

# COMPRESSION TREATMENT COULD RELIEVE HORSES' PAINFUL SWOLLEN LIMBS



Researchers from North Carolina State University have taken technology aimed at helping humans suffering from lymphedema – in which the accumulation of excess lymph fluid causes swollen limbs – and developed a medical device to aid horses suffering from the same condition. In a pilot study the device, called the EQ Press, was successful in moving fluid up the limbs and into the lymph nodes. This could lead to relief for horses with chronic conditions, as well as with temporary swelling due to injury or inactivity.

“Across the board, horses are predisposed to lower limb swelling,” says Lauren Schnabel, associate professor of equine orthopedic surgery at NC State and study co-author. “Lymphatic flow is driven by muscle contractions that circulate lymph fluid through the lymphatic system – horses are prone to lymphatic issues because they have very little musculature in the lower limbs.”

The severity of the condition can vary widely – from temporary swelling due to curtailed mobility, to lymphangitis caused by infections that can scar the lymphatic system. Owners will usually treat the condition by wrapping the limbs and icing them while encouraging exercise. But the effects of these treatments are usually only temporary.


“Humans suffer from the exact same type of lymphedema horses do, but the difference is that human medicine has a very effective treatment option – pneumatic compression devices,” Schnabel says. “So we wanted to create a horse-specific version of those devices and see if it would be similarly effective.”

Working closely with a company that manufactures human pneumatic compression devices, Schnabel developed the EQ Press in collaboration with former NC State veterinary student Irina Perdew.

The full EQ Press system comprises custom garments designed to accommodate the front and rear limbs of horses. Powered by pumps that tuck into a saddle pad, the device creates cycles of dynamic pressure waves that start at the bottom of the limb and move up, forcing fluid up the limb and eliminating backflow.

“There was anecdotal data that indicated compression treatment worked well for horses, but we wanted scientific evidence that demonstrates the utility of pneumatic compression for such large animals,” Schnabel says. “So we designed the NC State pilot study.”

In the study, six healthy thoroughbreds were injected with a tracer isotope in their lower front limbs – a harmless sulfur colloid that is taken up and excreted through the lymphatic system. A specialized camera followed the progression of the isotope up the lymphatic system and into a lymph node in the upper limb, a process known as lymphoscintigraphy.

A photograph of two horses, one white and one brown, wearing halters, standing in a field at sunset. The white horse is in the foreground, and the brown horse is behind it. The background is a bright, hazy sunset sky. There are decorative purple circular shapes in the top left and bottom right corners of the page.

Each horse underwent lymphoscintigraphy twice – once with treatment by the EQ Press on the front limbs and once without – randomized between treatment and control.

In all of the EQ Press treated horses, the camera showed the tracer isotope moving from the lower limb to the lymph node in the upper limb within a 60-minute window. Of the control horses, only one showed that the tracer isotope was able to reach the lymph node.

Overall, EQ Press treated horses had significantly accelerated lymphatic flow compared to untreated horses, recorded as both time to move out of the lower limb and also as time to reach the lymph node in the upper limb.

Schnabel and the research team found the results encouraging and want to determine whether pneumatic compression treatment will be as helpful for horses as it is for humans.

“Now we have compelling evidence that pneumatic compression treatments can accelerate lymphatic flow in healthy horses,” Schnabel says. “Our next step is to study the effectiveness of the EQ Press for treatment of horses with medical conditions such as lymphedema.”

# Hallmarks of a healthy mentorship

By Dr. Mithila Noronha

Finding the right mentorship program is never easy. New graduates are more educated than ever on how we deserve to be treated as practicing veterinarians. We're asking for higher pay, reasonable hours, and—most importantly—good mentorship. As a result, most employers are offering these things in order to meet the high demand for vets. So, how are we to know which practices just look good on paper and which are truly going to support us through the daunting transition from student to doctor?

## Green flags

When you start searching for your first job as a vet, it feels a bit like internet dating. Your inbox is overflowing with messages from recruiters and practice owners trying to stand out and get your attention. Thankfully, the red flags are easy to spot: after-hours emergency calls, suspiciously large signing bonuses, “fast-paced” work environments... the list goes on. But once you get past the job listings and sit down face-to-face with potential mentors, it becomes increasingly important to look for the green flags that will make one job stand out above the rest. I was lucky to find mentorship in my first job that provided the level of support I needed to thrive.

## My list of mentorship green flags:

### Meaningful conversations about mental health

The mental health crisis in veterinary medicine is often talked about over the course of a



lunch meeting and then slips away into the background due to the demands of the job. As a new grad, I knew I would struggle with building confidence and battling imposter syndrome. I was so worried that I would get overwhelmed and not know how to cope with every tough situation. After speaking with my mentor during the interview process, those fears started to fade. I saw that the workplace culture was very open to talking about mental health, and knowing that early on made me feel comfortable talking about my feelings and asking for support when I needed it.

### Commitment to work-life balance

“We’re all work to live, not live to work kind of people.”

This was another green flag from the first interview at my clinic. I work with incredible veterinarians who care deeply about the animals and people that they serve, but they also know that work is not the top priority in life. We all take a lunch break every day, leave work on time as much as possible, and never take medical records home. My mentors have shown me a level of work-life balance that I had rarely seen before in this profession, and I hope that it soon becomes normalized in every vet clinic.



### Open-ended mentorship timeline

My contract for my first job promised me three months of formalized mentorship. This is a fairly common timeline along which new grads are expected to transition from a training phase to functioning as a full doctor. However, the real learning process extends far beyond the first few months. While I encourage all new grads to sign a mentorship contract to make sure minimum standards are met, it's also worth having a conversation with your mentorship team about their willingness to provide guidance beyond a set time period. I have been practicing for several months now, and though I am more independent, I still frequently ask questions and rely on my mentors to be my safety net as I encounter new challenges.

### Valuing input from the new grad

Feelings of unpreparedness and insecurity are overwhelming as a new grad, so it's easy to forget what we bring to the table as associate veterinarians. My mentors reminded me from day 1 that I was coming in with the most up-to-date knowledge in the veterinary world. Even when I felt like I knew nothing at all, they asked for my thoughts on their cases and treated me as their equal. Simple acts of collaboration made me feel valued as a new doctor and reminded me that I'm not the only one who needs help sometimes.

## Putting it into practice

Each individual is going to have a different skill set and confidence level as they start their career, but at the end of the day, we all have the same goal. We all need mentors who show support for us as people first and veterinarians second.

Mentors should take the time to ask new grads how they're doing, not just with medicine but with balancing the demands of an emotionally taxing profession. Ask where they could use extra support and figure out ways to provide it. If you help them feel comfortable communicating with you early on, it will tailor the mentorship to their needs and prevent the frustration of a first job that doesn't live up to expectations.

Being a new veterinarian is hard. We're managing a wide variety of cases for the first time and learning how to take care of ourselves in a stressful career. The ideal mentorship program should understand all aspects, providing guidance in clinical cases and support for our well-being as we navigate life as a new grad vet.

# 5 reasons you will love living in Alaska

By Shauna Simmons

Alaska is a beautiful state with lots of bright sunlight and open land to explore. If you are looking for a new place to live, consider adding Alaska to the top of the list of options. Between the tax breaks and the Northern Lights, you don't want to miss out on the adventurous life Alaska has to offer you and your family.



# Get Paid to Move!

You read that right, Alaska will pay you a yearly allowance for being a full-time resident of the state. Alaska uses its Permanent Fund's investment earnings to encourage residents to stick around. In the last 10 years, payments have ranged between \$800 and \$2,000. Just in 2022, residents were awarded just \$3,000 by the state as long as they were eligible.

## No State income or Sales Taxes

As if getting paid wasn't big enough, Alaskans don't even have to bother with the hassle of income or sales taxes. Alaska has the lowest tax rates in the entire country. The biggest worry you'll have is how to pay for your property taxes, which compared to other states is a walk in the park.

## Catch A Glimpse of the Northern Lights

While this one isn't nearly as exciting as the first two, it still deserves its recognition. The Northern Lights is a natural phenomenon that has been captivating onlookers for a long time. Many people who have the opportunity to experience them regard it as one of the most spectacular experiences of their lives. If you ever find yourself a resident of the wonderful state of Alaska, you can have front-row seats to the incredible Northern Lights.

## Alaska is Great for Remote Work

Alaska is designed for a more relaxed lifestyle. Due to the weather, most of the locals are pretty laid back when it comes to dress codes and social obligations. If it's not the weather, then maybe it's the long sunlight hours. Either way, Alaska is perfect for people who enjoy working from home. It's set up for people to be comfortable in their homes for long periods, and the high-speed internet makes this the perfect option for remote workers.

## Alaskan Nature

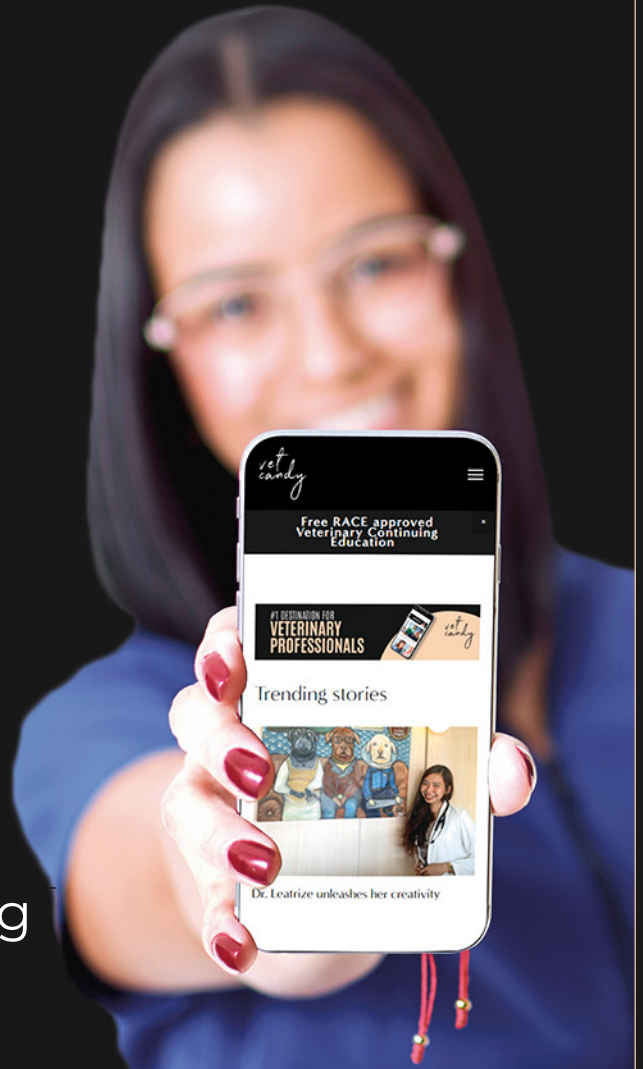
Alaska is widely known for its natural beauty. There is lots of beautiful open land to explore in Alaska for hikers and campers. There are plenty of other recreational opportunities as well like skiing and white water rafting that are sure to keep you entertained. Rivers, lakes, mountains, forests, everything for a nature lover and more. If you are a lover of nature and wildlife, then you would fit right into the Alaskan lifestyle!





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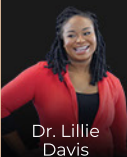

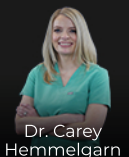
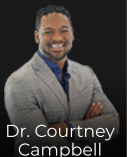
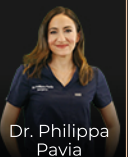
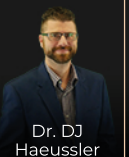
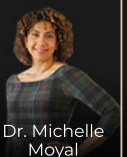
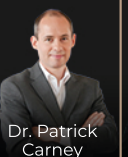
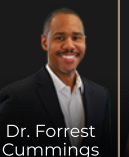
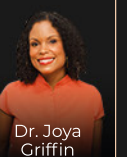
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