

WEST COAST

# VETERINARIAN

ISSUE #2  
MARCH 2011

WHATS INSIDE...

## STEM CELL RESEARCH

Vet Stem Cell Perspective with  
Dr. Alan Kuzma

## ANESTHESIA BULLETIN

Dr. Nancy Brock

## ASK THE EXPERT

## NEW GRAD PERSPECTIVE

Expectations and Hesitations

## VET ON A BOAT

BC SALMON FISH FARMING



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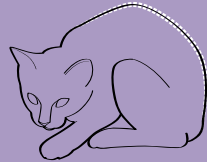


## Faces of Acute Pain®



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A cat with a hunched back, legs straightened often sitting quietly at the back of the cage may be in pain. This cat also has droopy ears and slanted half closed eyes. This posture is often seen after abdominal surgery.



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Cats with their heads down, ears “droopy” and eyes half closed and in a slanted position may be in pain. Note how a line drawn through the centre of the eyes makes a V shape.



### THE FLAT-OUT

Cats with their heads down, ears “droopy” and eyes half closed and in a slanted position may be in pain. Note how a line drawn through the centre of the eyes makes a V shape.



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**Issue No. 2**  
West Coast Veterinarian is Published by The Society of British Columbia Veterinarians  
**SBCV 2011**  
[www.sbcvet.ca](http://www.sbcvet.ca)  
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If for some crazy reason you decide not to keep this publication, please recycle it!



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**A NOVEL THERAPY**





**Go Green**   
**NO FILM / NO CHEMISTRY**

# KEEPING UP WITH PROGRESS...

**T**he first edition of the west coast veterinarian was really well received and i breathed a massive sigh of relief when i heard the positive and encouraging comments from the veterinarians of british columbia. thank you for taking the time to give your feedback and for all your enthusiasm surrounding the sbcv and the magazine. Progress: the act of moving forward; the advancement of knowledge and a gradual improvement or development. This word epitomizes what I think about the veterinary profession as a whole, not just in the province of British Columbia. Many of you who have been in practice for any length of time have had to develop and change your methods of practice many times over to stay relevant and offer the best services to your clients. If we didn't progress we'd still be neutering cats with Xylazine and prescribing an aspirin a day for arthritic dogs. Needless to say, not every progression in veterinary medicine is mainstream. Stem cell therapy is catching on as a viable complement to conventional OA therapy in our aging patients. It was a very interesting research project learning all about this progressive therapy and reminded me of how far we have come in the past 25 years.

There is no template in this profession that tells a veterinarian what they need to do in order to succeed. When a young grad steps out into the real world to practice, I would hope that most enter into this venture with a sense of pride in what they have achieved and with an open mind enough to learn from the seasoned veterinarians already in the trenches. In this day and age, progress is a fact of life. The world revolves around progression and companies need to constantly position themselves in a forward thinking fashion or they face becoming obsolete. The veterinary profession is no different. There is less call for the James Herriot's of the past and more emphasis on having the best technology available for the pet owner. Veterinarians are not exempt from the concept of progress and keeping up with the times. In fact, many veterinarians differentiate themselves by what they do offer to their clients that their neighbouring veterinarians may not. Laser surgery, monitoring equipment, rehabilitation, and digital radiography are all examples of technology related progress. It is very important to be aware of your long-standing habits and ask yourself on a consistent basis, "Am I doing all that I can to be the best veterinarian for my patients?" "Am I turning a blind eye to progress because I am comfortable doing what I have always done?" It's OK to feel uncomfortable about something new, but try not to avoid a new technique or method based on a lack of comfort with it. Progress is something to be welcomed. As consumers, we expect advancements all the time. Your clients are no different. Take a look around you, evaluate yourself and your practice and all things associated with it and ask yourself the simple question..."Am I a 1994 car phone or am I a BlackBerry?"

**Sharron Brownlee**  
Editor in Chief



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# PRESERVING THE CHOICE

The issue of Cropping, Docking and Dew Claw removal has become a major concern for the members of the Canadian Kennel Club since the New Brunswick Veterinary Medical Association moved to restrict their members from providing these services to their long and loyal clients. It has definitely created a gap in professional services provided to clients in that province. Since that time, and as the issue is debated across the country the CKC has been active in presenting a rationale to the vet community for continuing to preserve the choice for both vets and dog breeders/owners. The following letter was sent to the CVBC in August of 2010 with a different perspective and is reprinted with permission of the Canadian Kennel Club.

Dr Raymond Snopek,  
President College of Veterinarians of British Columbia

Dear Dr Snopek,

I am writing to you in regard to an upcoming vote by the BCVMA. I understand the Veterinary Association is considering the banning of ear cropping, tail docking and dew claw removal. This is an issue that is of major concern to the many pure-bred dog breeders who are members of the Canadian Kennel Club. As an organization that has been protecting the integrity of dogs since 1888, is the primary registry of purebred dogs in Canada registering 175 distinct breeds and the steward of their breed standards, we are extremely concerned.

CKC breeders want to work with their Veterinarians in providing the best care for their dogs. They do not want to be driven to another provider of services because their Veterinarian is banned from providing "cosmetic" services. They would like to see the Veterinary Association allow choice to their membership when it comes to cropping ears, docking tails and removing dew claws. Banning these procedures will drive many of the breeders to the US or worse find another provider for the services. Like

prohibition many will find an alternative.

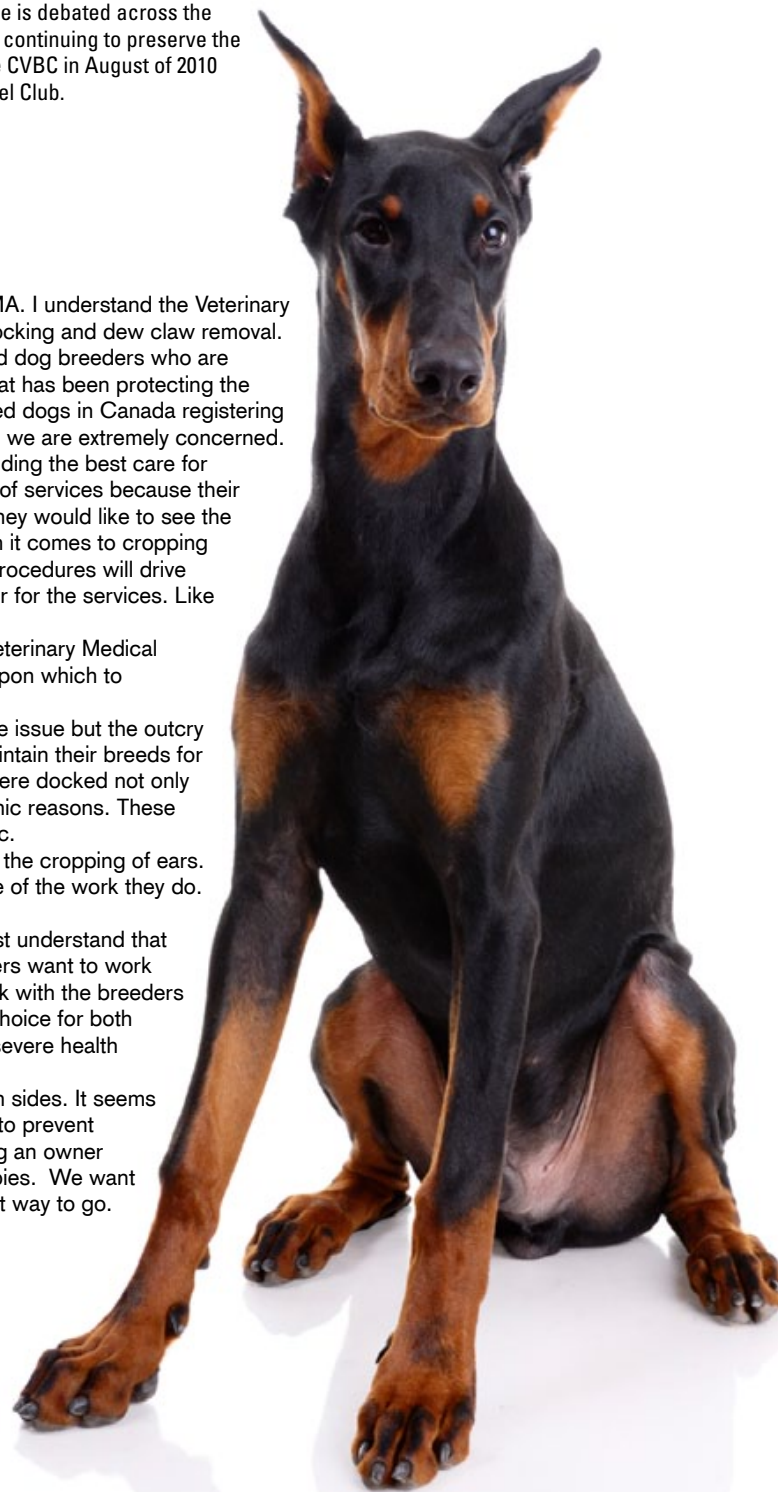
The Canadian Kennel Club has been actively in touch with the Canadian Veterinary Medical Association and provincial bodies hoping to find some common perspective upon which to acknowledge the value of allowing this choice.

Since the issue surfaced the CKC has surveyed its 25,000 members on the issue but the outcry against the decision of the vet community continues to build. They want to maintain their breeds for the function for which they were originally developed. Tails on some breeds were docked not only for function but to prevent injury. Tails on other breeds were docked for hygienic reasons. These practises are similar to docking lambs. Breeders do not consider this cosmetic.

The CVMA has been informed that not one of our breed standards requires the cropping of ears. The removal of dew claws in some breeds is essential for their safety because of the work they do. A torn dewclaw causes more trauma and pain than a quick procedure performed within seconds on a two or three day old puppy. Veterinarians must understand that they provide the management of a safe and painless procedure. CKC breeders want to work with their Veterinarians and we suspect many of the Veterinarians want to work with the breeders to provide medically necessary tail docking and dewclaw removal. We need choice for both parties or the changes being considered now by BCVA will just create more severe health issues and much worse possibilities as an outcome.

As this philosophical battle ground unfolds there are considerations on both sides. It seems logical that altering an animal for no apparent reason seems unnecessary but to prevent possible injury by refusing a service seems extreme. The CKC supports letting an owner review with their Veterinarian the needs and conditions of their dogs and puppies. We want to work with Veterinarians for medical counsel. We support choice as the right way to go.

Yours Sincerely  
Margaret S Jones,  
CKC Director BC Southwest



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# ANESTHESIA BULLETIN

By Nancy Brock DVM  
Board Certified Veterinary Anesthesiologist

GREETINGS FELLOW ANESTHESIA ENTHUSIASTS AND WELCOME TO THE FIRST ISSUE OF ANESTHESIA BULLETIN. IN THIS COLUMN, WE WILL EXPLORE CONTROVERSIES AND NEW DEVELOPMENTS IN CLINICAL VETERINARY ANESTHESIA.

**F**or the readers who don't know me, I am a board certified veterinary anesthesiologist in private anesthesia referral practice in BC. My practice is mostly involved with small companion animal care although I also look after the occasional llama, pot bellied pig, Anaconda, and marine mammal. My work is primarily in the Pacific Northwest and California. I grew up in Montreal, obtained my DVM from the University of Guelph and completed my residency training at the University of California, Davis.

In this issue we'll be taking a closer look at the pros and cons of medetomidine as a premedication agent for small animal patients. From my perspective, premedication is an essential and non-negotiable component of an anesthesia protocol. It has many beneficial effects such as reducing the necessary doses of other anesthesia drugs, such as reducing the necessary doses of other anesthesia drugs, providing anticholinergic protection if indicated, establishing pre-emptive analgesia, avoiding excitation at induction and recovery and making a patient safer to handle.

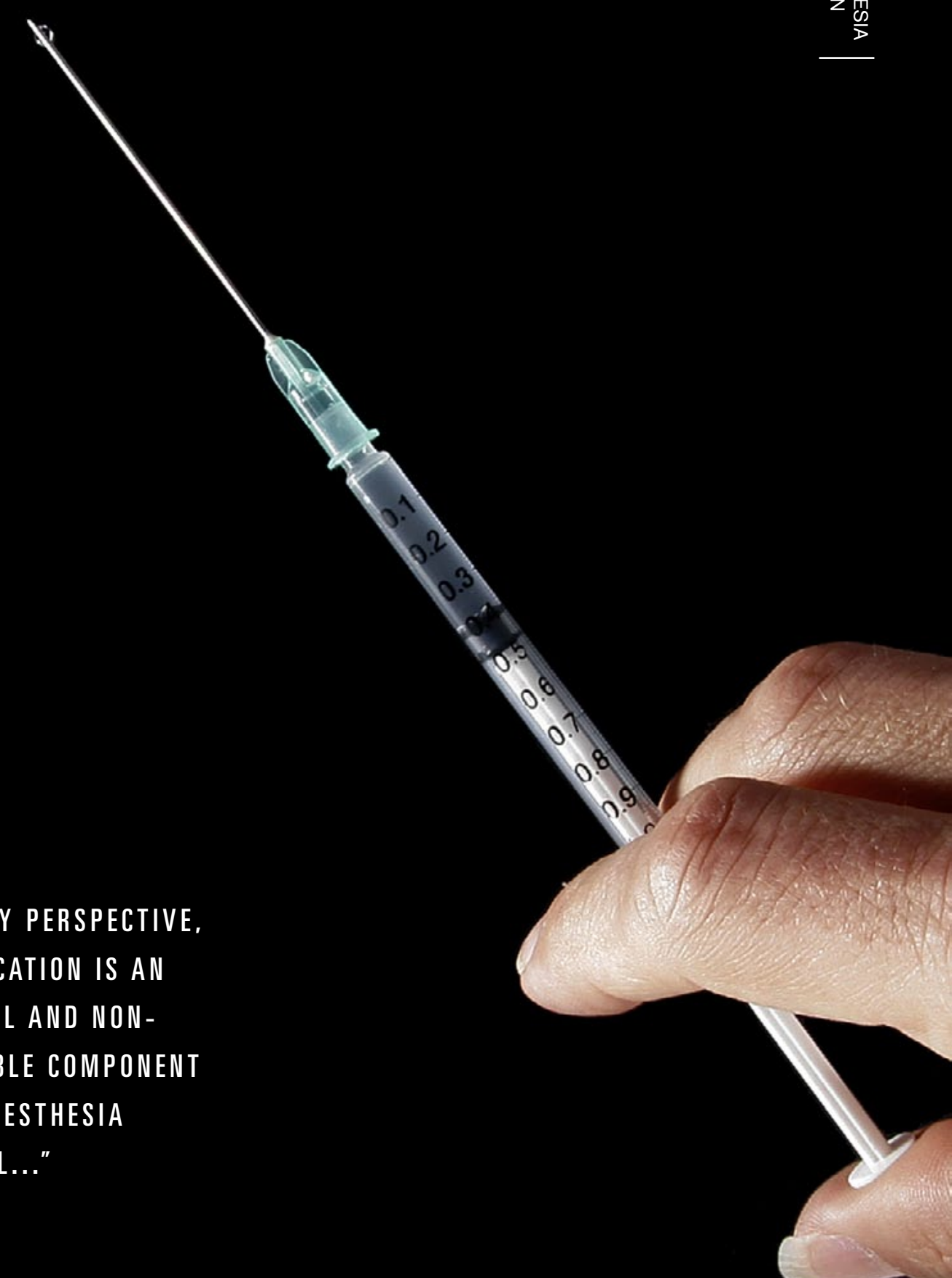
Dexmedetomidine (Dexdomitor) has recently become available in Canada for use in dogs and cats and has now replaced medetomidine (Domitor) which Pfizer Animal Health no longer distributes. The two drugs act virtually the same though there may be a slightly shorter duration of effect with dexmedetomidine. My comments apply to both drugs.

Just a quick review of the pharmacology of medetomidine: It is an alpha-2 receptor agonist that is an

analgesic sedative comprised of two enantiomers: dex and levo. Another word for enantiomer is stereo - isomer: a drug that exists in two configurations which are three dimensional mirror images of each other, like the left (levo) and right (dex) hands - both are hands but one is the mirror image of the other. Since the dex enantiomer is the active portion of medetomidine, dex-medetomidine has been extracted from the mixture of dex and levo and marketed as a sort of a "purer" medetomidine. The dose of (dex) medetomidine is HALF the dose of medetomidine because of this "purer" solution. But the manufacturers in their wisdom have made it so that the calculated volume is the same. If you have a dose chart in your clinic that specifies mLs/kg, you can still use it.

Medetomidine causes dose-dependent sedation and analgesia. Patients can override the sedation if they are sufficiently stimulated, so it's important to remember that while they may look asleep, they are only relaxed. With the right stimulation, they can rouse up and bite you. Medetomidine causes peripheral vasoconstriction and increased systemic vascular resistance (SVR) that can lead to an increase in blood pressure and bradycardia (which can be quite profound). The vasoconstriction can cause "muddy" or pale looking mucous membranes especially at the higher doses (which I avoid). Medetomidine is also a cardiovascular depressant and when combined with other drugs can be quite respiratory depressant as well. As such, medetomidine is contraindicated in patients with cardiovascular disease. The increase in SVR makes diseased hearts work harder and doesn't do them any good. I also avoid medetomidine in patients that are acutely ill or injured.

(cont'd pg. 12)



"FROM MY PERSPECTIVE, PREMEDICATION IS AN ESSENTIAL AND NON-NEGOTIABLE COMPONENT OF AN ANESTHESIA PROTOCOL..."



**THE PROS AND CONS OF  
MEDETOMIDINE AS A  
PREMEDICATION AGENT  
FOR SMALL ANIMAL  
PATIENTS.**

**01** **GOOD SEDATION LEVELS**  
The first pro I see to using medetomidine is a very nice level of sedation and relaxation – much more than with acepromazine/opioid combinations or with benzodiazepine/opioid combinations. Since acepromazine and the benzodiazepines are the other commonly used sedative/tranquilizers in veterinary medicine, I think of medetomidine as a substitute for them in my premedication protocols. I do not combine acepromazine with medetomidine in the same patient although I occasionally administer medetomidine post-anesthesia to a patient that has received acepromazine premedication.

**02** **LOWER INDUCTION AND MAINTENANCE**  
The increased sedation brought on by medetomidine isn't a problem unless you ignore its dramatic anesthetic induction/maintenance drug sparing effects. If you administer your other anesthesia drugs to effect, you will use much less than you are accustomed to in order to reach the same end point. One benefit to lower induction and maintenance (inhalant) drug doses is a reduced degree of vasodilation from these agents and thus less hypotension under anesthesia. Additionally, less vasodilation means less heat lost by the anesthetized patient.

**03** **REVERSIBILITY**  
Another benefit to medetomidine is its reversibility. Acepromazine isn't reversible though benzodiazepines are technically reversible with flumazenil, but it's expensive and was developed as a tool to assist in treating intentional benzodiazepine overdose in the ER. If you think that your anesthetic recovery is too prolonged because of the medetomidine sedation, you can administer ¼ to ½ of your calculated dose of atipamezole (Antisedan) by intramuscular injection and usually that will reverse any lingering sedative effects.

**05** **PROVIDES SOME ANALGESIA**  
Another “pro” regarding medetomidine is that it provides some analgesia. It doesn't replace the need for opioids, NSAIDs and local/regional analgesia in painful procedures, but it will enhance the analgesia from your opioids somewhat.

**04** **GOOD QUALITY CHEMICAL RESTRAINT**  
When I use medetomidine, I use very low doses, (WAY lower than the label dose) and I always use it in combination with an opioid. This combination with opioids allows me to achieve good quality chemical restraint with very low doses.

**06** **USED WITH OR WITHOUT ANTICHOLINERGICS**  
Now for the anticholinergic debate. When I administer medetomidine I do NOT combine it with an anticholinergic. This is a debatable issue. Many people use medetomidine successfully in combination with anticholinergics in their anesthesia premedication and that's fine – I'm just more comfortable leaving it out. One aspect of the medetomidine/anticholinergic debate that has generated much more consensus among anesthesiologists is the use of anticholinergics to treat bradycardia after the onset of medetomidine sedation. This is considered unwise and is discouraged. The bradycardia is partially in response to the increase in blood pressure that accompanies the medetomidine induced vasoconstriction.

**04** **SIDE-EFFECTS ON BLOOD PRESSURE AND HEART RATE**  
Additionally, 1) 2) 3) and 4) are connected - given the effects that medetomidine has on heart rate and blood pressure, reliance on these two vital signs to assess depth of anesthesia becomes problematic. You can have a patient that is too deeply anesthetized with a “normal” blood pressure, very poor circulation and profound respiratory depression.

**05** **NOT IDENTIFYING SIDE-EFFECTS QUICKLY**  
My concern is that veterinary staff members are not altering their approaches to anesthesia delivery when medetomidine is used for anesthesia premedication. Because of its effects as listed above, patients are getting into trouble and the problems are not being identified quickly enough to avert anesthesia related morbidity and mortality.

**PROS**  
**CONS**

**01** **PREMEDICATION**  
Premedication, because it takes place early in the anesthesia delivery process, influences everything that follows, including induction, maintenance and recovery characteristics - and the effects can be either positive or negative depending on how anesthesia decision making is handled (or NOT handled).

**02** **POSSIBLE UNDESIREABLE EFFECTS**  
Medetomidine's sedative and analgesic qualities make it a reasonable choice for anesthesia premedication. However, it is not a perfect drug and as with every other anesthetic drug it has its undesirable effects. When you select a drug, you can't opt for only the desirable effects. You get the full package of good and bad. In practice, we try to tip the balance toward more of the beneficial effects through dose selection but we are only partly successful. My concerns about medetomidine as anesthesia premedication are that:  
1) it has effects which alter (and complicate) the way in which anesthesia depth can be monitored.  
2) it increases blood pressure significantly but it is nonetheless a cardiovascular depressant agent. This sounds like a contradiction in terms but it is not.  
3) Medetomidine has a profound and poorly appreciated sparing effect on the amount of induction and maintenance agents required to keep a patient at a surgical plane of anesthesia.  
4) the vasoconstriction that occurs causes problems with the proper functioning of monitoring devices.

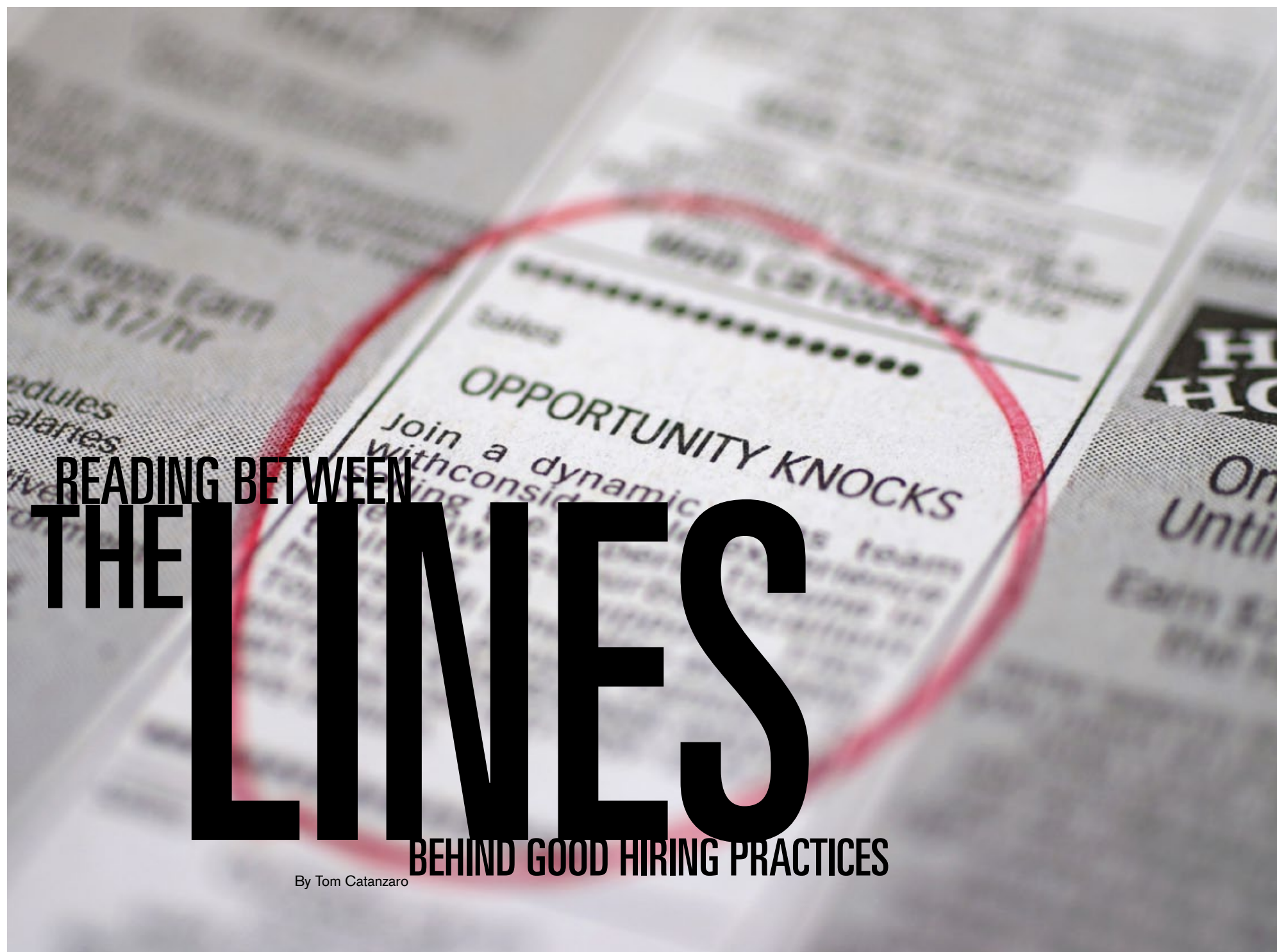
**03** **NOT SUITABLE FOR UNHEALTHY/OLDER PATIENTS**  
Another con is that if the patients are too deeply anesthetized, and you combine excess anesthetic depth with perhaps a patient that is not young and healthy, you have a recipe for poor outcome.

**SUMMARY**

So, although there are many good reasons for the selection of medetomidine as anesthesia premedication, the circumstances surrounding its use - poor ability to determine depth of anesthesia, not being able to identify a patient that is suffering from excess respiratory and CV depression, not reducing the doses of other anesthesia drugs sufficiently and unreliable monitoring tool function cause medetomidine premedication to be associated with reduced anesthesia safety. **WCV**

If you would like more information about the way in which I incorporate medetomidine into my anesthesia protocols and the doses of medetomidine that I use, you can obtain a free copy of an overview that I have prepared for clinic use by visiting my website at :  
<http://www.nancybrockvetservices.com/Products.html>

“JUST AS YOU MAKE A LIST OF FEATURES YOU DESIRE WHEN SHOPPING FOR A NEW CAR, DEVELOP A SHOPPING LIST FOR NEW HIRES. IT SHOULD INCLUDE THE DESIRED EMPLOYEE’S CAPACITIES, ATTITUDE, PERSONALITY AND SKILLS...”



By Tom Catanzaro

**W**hen hiring veterinary practice support staff, it is a tough prospect when all you have at the start is a résumé to work from that reads like an autobiography. With the right selection tools and a few tips, you can increase your odds of hiring someone who is actually as good as their résumé indicates.

Just as you make a list of features you desire when shopping for a new car, develop a shopping list for new hires. It should include the desired employee’s capacities, attitude, personality and skills, with capacities being most important and skills least important. You should hire for attitude and train for skills. Skills don’t mitigate a bad attitude or disruptive personality.

Another tool is a performance profile. This is a prioritized list of the top six or eight things a person in the job must do to succeed or excel in the position. It describes the position’s primary performance objectives, key sub-tasks and challenges. You should look for people who have accomplished similar tasks at other jobs. By developing performance profiles, you also ensure that everyone involved in the hiring process looks for the same attributes in applicants.

On a similar note, a selection reflector which is a form designed to help conduct the selection processes objectively, but also to assure that applicants for employment receive fair and equal treatment, lends uniformity to the candidate-screening process. It guides the hiring-team’s observations and ensures that team members score the same assessment elements for applicants. The reflector focuses on personal characteristics and skill sets. Determine these selection and hiring parameters before sorting and scoring the applicants. These checklists are found in the Blackwell text, *Building The Successful Veterinary Practice: Innovation & Creativity* (Volume 3), as are the hiring team concepts.

**There are two basic ways to start finding candidates/applicants:**

1) If you receive a prospective résumé, have them come in and complete an application. Don’t underestimate the telling power of employment applications. Have prospective employees fill them out on site and record how long it takes them. Look for other indicators, too – for example did they leave blanks when they were told not to? Applications can be more valuable than résumés because they tell you what you want to

know rather than what the applicant wants to tell you.

2) Have them submit résumé by fax or e-mail. Be very careful of résumés, since some are developed by creative writers. Always ask for their address as well as salary expectations; if either item is omitted, delete the resume from competition, since you now have found someone unwilling to follow directions. Ensure résumés are submitted with references. Look for other indicators on the résumé – frequency of job changes and sequence of job difficulty - were they upwardly mobile or just “bouncing around”? Always remember, a résumé only tells you what the applicant wants you to know.

After the résumés or applications are received, sort them into two stacks: possible and not probable. Pursue the possible stack with phone interviews by the hiring team, with about three knock out questions integrated into the script. For instance: “How much advanced notice do you need to work overtime?” In response, the answer must be “I am available for the needs of the patients and the practice.” Or, “We are a multi-shift practice, do you have shift restrictions?” In response, the answer must be, “I am available for the shifts as scheduled in advance.”

After the résumé/applications are sorted and the telephone interviews are completed, you should now be down to a manageable number of candidates for the hiring team to interview. Don’t use employment applications or résumés as the basis for on-site interview questions. This phase is when the checklists mentioned earlier come in handy for coordination between ownership and the hiring team. The questions are all predetermined by joint discussion, the desired attitudes/attributes are identified and the hiring team scores with ‘-’ and ‘+’ marks on the checklists. Instead of the employment applications/résumés, develop a standard guide for the position. Ask open-ended or situational questions and take notes.

Positioning applicants to tell the truth is also a critical part of the interview. Let them know what the interview process will consist of and what you expect from them. Tell them that you will be truthful with them and ask them to be honest with you.

**Five important questions to ask are:**

Tell me about the first job you ever had. Because the first job they ever had could have been years ago and unrelated to the one for which they’re applying. Applicants don’t expect this question. The answer may reveal their values and ethics. Tell me about the achievements in your life you’re



**YOU SHOULD ALSO “TEST DRIVE” THE FINAL CANDIDATES IF THERE IS A CLOSE COMPETITION. MANY UNKNOWING CANDIDATES WILL COME FOR A “TEST DRIVE” PRACTICE DAY AND END IN A CRASH.**

most proud of and the obstacles or problems you had to overcome. The answer indicates what motivates applicants.

Tell me about your last performance appraisal. An applicant reveals his/her level of self-esteem and feelings about another’s appraisal of them.

**On a scale of 1 to 10, how would you rank yourself as a (insert relevant term)?**

Then ask what it will take to get to the next number.

**What one question would you like to ask me?**

After answering, ask, “Why, of all the questions you could have asked, did you choose that one?” Role reversal is always informative, plus the question reveals an applicant’s No. 1 priority.

You should also “test drive” the final candidates if there is a close competition. Many unknowing candidates will come for a “test drive” practice day and end in a crash. Others will show their true colors including potentially challenging the practice’s Standards of Care or Core Values; these are cause for immediate release from the candidate list. Some practices use word or math tests (extra credit given of the candidate who asks for a dictionary or calculator instead of guessing). Well-developed application tests more accurately predict success on the job than many other pre-selection tools. They also provide systematic, validated information for better decision-making while frequently revealing hidden qualities.

An average veterinary practice that hires a warm body in a rush to fill an existing vacancy, may wonder where their minds have gone when things turn out badly within a short period of time. Staff turnover is common and a major expense to practice culture and continuity of care. A good practice is slow to hire and fast to fire if the new person isn’t working out as expected. A great practice is always looking for the next great staff member and will build or enhance new practice programs around staff strengths. A thorough hiring system and valuable tools allow you to hire the right person the first time. **WCV**

## Ethics, Advocacy & Transparency

The mission of the Society of British Columbia Veterinarians is to create a strong community that promotes collegiality among veterinarians, enlightens and directs public opinion, cultivates and advances the art and science of veterinary medicine and surgery, and maintains the honor and dignity of the veterinary profession.



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<sup>1</sup>Hägström J, et al. Effect of Pimobendan or Benazepril Hydrochloride on Survival Times in Dogs with Congestive Heart Failure Caused by Naturally Occurring Myxomatous Mitral Valve Disease: The QUEST Study. *J Vet Int Med* 2008;22:1124-1135.  
<sup>2</sup>Lombard CW, et al. Clinical Efficacy of Pimobendan Versus Benazepril for the Treatment of Acquired Atrioventricular Valvular Disease in Dogs. *J Am Anim Hosp Assoc* 2006;42:249-261.



# THE SBCV BOARD OF DIRECTORS

WEST COAST VETERINARIAN TAKES A LOOK AT THE SOCIETY OF BRITISH COLUMBIA VETERINARIANS BOARD OF DIRECTORS. THE SBCV IS RESPONSIBLE FOR PRODUCING WEST COAST VETERINARIAN MAGAZINE.



**Dr. MARCO VEENIS**

**SBCV CHAIR**

Marco studied veterinary medicine and graduated with distinction at Utrecht University in Holland. Utrecht is one of Europe's largest Veterinary Medicine Colleges and is fully accredited with the American and Canadian Veterinary Medical Associations. He practiced small animal medicine for nine years in the Netherlands before moving to Canada with his wife Liesbeth, daughter Marthe and son Luuk. In 2002, Marco and Liesbeth purchased Okanagan Veterinary Hospital. They have built the practice to become a full service small animal hospital with a strong surgical component. The hospital just completed an expansion and major renovation in 2008. An avid outdoor enthusiast, Marco can often be found hiking through the woods with his dog Goochem. His cats Pluis and Lucky have gracefully allowed him to share their home with his family.



**Dr. GEORGE GUERNSEY**

**SBCV BOARD OF DIRECTORS**

George graduated from the Ontario Veterinary College in 1969. He moved to Victoria and was one of the founding members of the Central Victoria Veterinary Hospital (1973). George has had the distinction of being involved with both the BCVMA and the CVMA, serving as Chair for various task forces and also President for both associations. George believes that it is incredibly important that all members of the profession in BC have the opportunity to enjoy the benefits of professional advocacy, support, collegiality, and camaraderie and looks forward to the day that younger benefactors will take the SBCV reins and provide the leadership necessary for an exciting future in veterinary medicine. George now lives in Summerland on a small vineyard with his wife Linda and still practices part-time.

Dr. Rob Ashburner graduated from the WCV in 1984 and began practicing in British Columbia. He purchased the West King Edward Animal Clinic in 1988 and has since operated it as a successful small animal practice. Rob has been actively involved in the BCMA, including two terms as President, and as Chair of the Conduct Review Committee for 12 years. He has also been involved with the CVMA on numerous committees, on Council and as President. Rob has been actively involved in the development of the SBCV and is presently the Treasurer and representative on CVMA Council. Rob believes that all veterinarians in BC need a strong organization to speak for them as the experts in dealing with all matters relating to the animals we deal with. He is confident that the open and responsive alliance developing between CVMA and SBCV will accomplish this and be a model for other provincial veterinary associations to follow.

**SBCV BOARD OF DIRECTORS**

**Dr. ROB ASHBURNER**



**Dr. MARK LANG**

**SBCV BOARD OF DIRECTORS**

Dr. Mark Lang is a 1983 WCV graduate and started in mixed practice in Chase, BC. After 15 years he moved to Vancouver and has since been in small animal practice. Currently he is working at Canada West Veterinary Specialists caring for the hospitalized patients. Mark has volunteered for the BCVMA in various capacities such as Advisory Committee member and the AHTA of BC Liaison also helping to run the Okanagan Veterinary Medical group. Mark was a BCVMA council member from 1993-2001 and 2006-2009 (acting as President from 1999-2000). He served as the BC rep for the CVMA from 2007 to 2009. Mark is married to Karen, also a veterinarian and has 3 children, Paul, Valerie and Tomas. Mark believes the SBCV needs to engage a significant number of members for it to be a truly valuable asset to its members. The SBCV will become the face of veterinarians to the BC public and he hopes that you will find a small amount of time to help make that happen in a positive way.



**Dr. SARAH ARMSTRONG**

**SBCV BOARD OF DIRECTORS**

Sarah graduated from the Ontario Veterinary College in 2007. During school she was a member of the student initiative Global Vets and traveled to East Africa. After successfully completing school, Sarah worked full time in general practice for 2 years, focusing on cats, dogs and exotics and also worked part time at a small animal emergency clinic. Sarah moved out west with her partner Matthew and their furry family consisting of 2 cats (Rumple Stiltskin, and Miss Trouble) and a parrotlet named Ducky. She is currently working at the Vancouver Animal Emergency Clinic, and is very happy to have found a great team with which to work with. She fully enjoys the outdoors and what the west coast has to offer namely rock climbing, and recently she and her partner have taken up skate skiing. She is very excited to be a part of the new BC veterinary association, and is looking forward to help shape it into a great member service outlet for BC vets.



A microscopic view of numerous red blood cells, appearing as bright red spheres with darker red centers, scattered across a light-colored background. The cells vary in size and focus, creating a sense of depth.

# NOVA THERAPY

By Sarah Armstrong DVM,  
SBCV Board of Directors,

*An interview with Dr. Kuzma at CWVS  
and his take on this new modality.*



**“CURRENTLY THERE ARE NUMEROUS STUDIES AND ANECDOTAL REPORTS THAT SUPPORT THE USE FOR STEM CELLS AS A REGENERATIVE TOOL IN VETERINARY MEDICINE FOR DEGENERATIVE DISEASE PROCESSES SUCH AS TENDON INJURIES, OSTEOARTHRITIS, OSTEOCHONDRAL DEFECTS, AND LIGAMENTAL INJURIES. THE RESULTS INDICATE, ACCORDING TO OWNERS AND VETERINARIANS, THAT THERE IS ABOUT AN OVERALL 80% IMPROVEMENT IN QUALITY OF LIFE...”**

**H**istorically, in human medicine, the knowledge of stem cells evolved in the 1950's when researchers demonstrated the presence of self-renewing cells in the bone marrow of mice. It was not long thereafter that the first bone marrow transplant in people occurred for the treatment of severe combined immunodeficiency (SCID). This was then followed by bone marrow transplants to help treat leukemia. Furthermore early research revealed that bone marrow cells infused intravenously could repopulate the bone marrow and produce new blood cells. These discoveries were all paramount in the advancements in stem cell therapy and its use in veterinary medicine today.

Stem cells are multipotent, which means they can differentiate into many different cell types, providing building blocks for different tissues in the body. They also appear to have some immunomodulatory effects. Mesenchymal stem cells are of stromal origin (connective tissue) and have been harvested from adipose tissue, lung, bone marrow and dental pulp. The stem cells used to treat orthopedic injuries in veterinary patients are harvested from the adipose tissue of the patient because this method of collection is relatively non invasive and technically simple.

By the late 1990s, the use of autogenous mesenchymal cells that could function as stem cells was pioneered by veterinarians treating tendon injuries in racehorses. In 2002, Dr. Robert Harman and Michael Dale became interested in the potential applications for stem cell therapy in veterinary practice, and founded Vet Stem Inc. Vet Stem, based in San Diego, California was the first company licensed to offer fat-derived stem cell therapy for use by private practitioners. Other companies such as Medivet, and Avivagen also offer similar stem cell therapies. Vet Stem reports that over 3600 equine patients and 2600 canine patients have been treated with stem cell therapy, mainly for tendon, ligament, and joint injuries, and that 80% have shown clinical improvement following stem cell use. Although there are few peer-reviewed published reports on the efficacy of stem cells in treating injuries, there are anecdotal reports on the successful use of stem cells in equine, canine and feline patients suffering from diseases as diverse as osteoarthritis, osteochondral defects, and cruciate ligament injuries. Vet Stem is currently investigating the use of stem cells in immune mediated disease, atopy, inflammatory bowel

disease, renal disorders, and heart disease.

In 2008, Vet Stem launched a small animal stem cell credentialing program and began actively marketing in clinic processing kits to practitioners interested in offering stem cell therapy to their patients. A similar program is offered by MediVet, a Kentucky based company that markets a procedure by which fat cells can be harvested from a patient, processed in the clinic, and injected back into the patient on the same day.

The procedure for collection of stem cells is simple. Inguinal, falciform, or interscapular fat is collected from the patient under general anesthesia. In the Vet-Stem procedure, the harvested fat is sent by courier to the Vet Stem facility in Prince Edward Island, where the stem cells are isolated and cultured. Some cells are banked for future treatments, while others are returned to the clinician for use in the patient. In the Medivet system, the cells are cultured and activated using specialized equipment in the practice. In both systems, the stem cells are injected directly into the injured area, usually a joint or tendon. Once in situ, the stem cells differentiate into cells appropriate to their local environment and induce repair.

Vet-Stem specifically uses adipose derived adult mesenchymal stem cells. Other methods of attaining these stem cells has included bone marrow collection.

Some of the advantages to using the adipose derived stem cells rather than bone marrow derived stem cells are; adipose derived stem cells are more readily available, fat collection is far less invasive and is easier than bone marrow collection, and fat cells contain a heterogenous mixture of regenerative cells (mesenchymal cells, endothelial progenitor cells, pericytes, immune cells, fibroblasts, etc).

Compared to traditional medicine, regenerative medicine does not rely on a single target receptor or a single pathway for its action. Regenerative cells (stem cells) can differentiate into many different tissue types, induce repair with their immunomodulatory/antiinflammatory effects, and stimulate regeneration. Regenerative cells communicate with the cells in their local environments through paracrine and apocrine modalities, thus creating an optimal environment for natural healing. Lastly, it is considered a more natural medical approach as you are injecting the patients with cells, not pharmacologic agents.

Veterinary medicine is at the forefront of this novel regenerative approach, and Dr. Alan Kuzma has realized its potential and recently started instituting stem cells in his practice, at Canada West Veterinary

**“ANOTHER WAY I AM USING STEM CELLS, IS IN PATIENTS WITH CRUCIATE TEARS. AT THE TIME OF THE ORIGINAL SURGERY, I HARVEST FAT FROM THE PATIENT'S FALCIFORM LIGAMENT AS IT HAS THE HIGHEST POPULATION OF ADULT STEM CELLS. I THEN SEND THIS ADIPOSE TISSUE OFF TO VET-STEM FOR THE HARVESTING OF THE STEM CELLS. TWO DAYS LATER WE THEN INJECT THE JOINT OF THE AFFECTED STIFLE...”**



**ABOVE:** Technician at a Vet-Stem Laboratory.

Services, Burnaby BC. Dr. Kuzma is a diplomate of the American College of Veterinary Surgeons. I was fortunate enough to sit down with him in early January 2011 to discuss his role in offering stem cell therapy to his patients.

***What is your involvement with Vet-Stem and adipose derived stem cells?***

My involvement is exclusively for treating osteoarthritis in dogs. I had heard about it being a treatment modality, took an online course to become certified with Vet-Stem, and then made a plan to do a case. I use it as a treatment for existing osteoarthritis in any joint. Originally it was used primarily in horses with tendon injuries, and then in 2007 Vet-Stem started using the technology for dogs with osteoarthritis. First it was used in dogs with hip dysplasia, then elbow dysplasia. There were many anecdotal reports of how promising the results were with only 1 injection into the joint so I became interested in its use. Originally it was used as an IV injection, but the results were not as long lasting as the intra articular route.

Another way I am using stem cells, is in patients with cruciate tears. At the time of the original surgery, I harvest fat from the patient's falciform ligament as it has the highest population of adult stem cells. I then send this adipose tissue off to Vet-Stem for the harvesting of the stem cells. Two days later we then inject the joint of the affected stifle. Additionally, the original adipose tissue and the stem cells are banked at Vet-Stem and I will use them when/if the other stifle becomes unstable. Thus I am dealing with existing osteoarthritis of the affected stifle in addition to the insult to the joint from surgery. I see it being a good use of it in this respect.

Vet-Stem is a parent company, but they now have a Canadian company called Chemophor Inc. I have not dealt with them yet.

***What are your thoughts on the advantages/disadvantages of stem cell therapy in a clinical setting?***

There are many advantages. I've seen 80% of my patients treated experience an improved quality of life. This is consistent with the statistics that Vet-Stem states.

I have also witnessed other advantages other than the benefits of treating existing osteoarthritis. For example, I can think of one patient who received several intra articular injections for his elbow osteoarthritis who also had pretty severe atopic dermatitis. This patient's atopic dermatitis was treated with several ongoing medications. He was treated for his arthritis with IV injections of stem cells, and his atopic dermatitis went away. This is something that Vet-Stem is currently investigating, along with immune mediated disease (polyarthritis, inflammatory bowel disease, etc). I also had another case of a patient who did not get much benefit of the stem cell therapy for his arthritis but his existing inflammatory bowel disease disappeared. I am in contact with Vet-Stem with these results.

Another big advantage of the product that stem cell offers for osteoarthritis is in cases where clients are interested in pursuing other modalities of treatment or have exhausted all surgical and medical treatment options. I also use stem cells injections in cases such as in TPLO's to provide optimal healing. The benefits seen last upwards of 1 year in some cases.

There are few disadvantages to stem cell treatment. One is that you need to do a general anesthesia to collect the falciform fat. To better deal with this Vet-Stem is offering cell culture and banking of the cells collected, thus decreasing the number of times the fat must be collected. One concern is patients that have had a previous GDV surgery and have had their falciform fat removed will need to have fat collected from another region

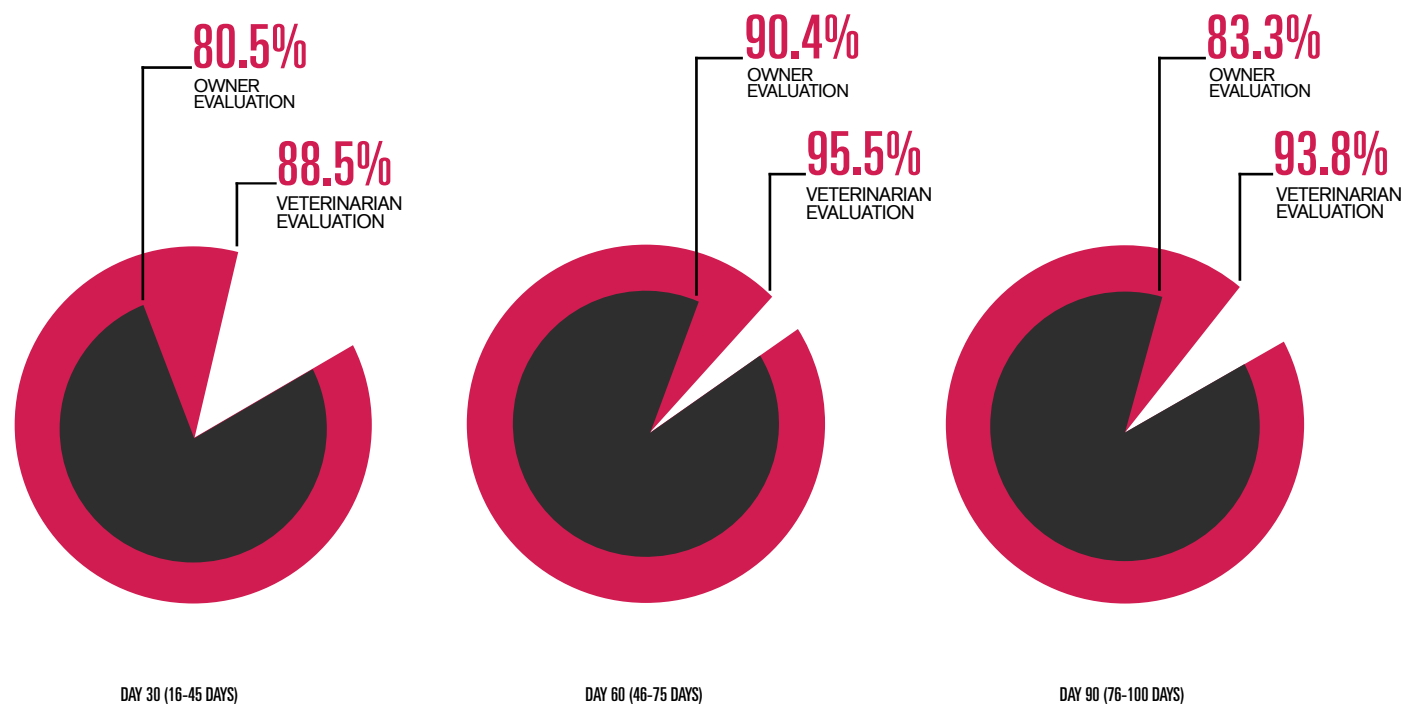


In this image, Dr. Kuzma and assistant Alina inject stem cells into Wally, an 8 year old spayed Rottweiler. She had TPLO surgery 6 years ago, and 1 year ago did stem cell treatment for both stifles. Her owner was really pleased with the results, and reported her being able to use lower dosages of NSAIDS post stem cell treatment. Now her owner is finding that she is not doing as well as she used to be doing after the original stem cell injection. Today she is back for her second injection. Under light sedation (propofol) Wallys stifles are shaved and prepped aseptically. Kuzma removes the stem cells from their package and injects them into Wallys stifles. This takes less than 15 minutes and its all over and done with.



## PERCENTAGE OF DOGS WITH IMPROVED QUALITY OF LIFE

Post Stem Cell Treatment for Orthopedic Conditions



### CONCLUSION:

At 30, 60 & 90 Days, Post Stem Cell Treatment

80%

Greater than 80% percent of dogs showed an **improved quality of life** according to owners and veterinarians.

81%

Showed and improved quality of life.

63%

Were not re-treated in the first year.

76%

Of older dogs treated suffered from severe arthritis.

85%

Additionally for orthopedic conditions, 85% of dog owners would recommend **Vet-Stem Regenerative Cell Therapy** to others.

83%

Of owners would recommend the treatment for older dog owners.

\* Statistics for Older Dog Treatment (9 to 18 Years)

\* Statistical information & Clinical Data provided by Vet-Stem (www.vet-stem.com)

such as inguinal fat. A complication with inguinal fat harvesting is the dead space left behind. I always try to collect from the falciform.

The only other obvious downfall is cost to the client. Cost for the first stem cell procedure is on average \$3000-4000. Cost depends on the number of joints injected, processing, shipping, collection and injection fees. However when its an alternative to surgery maybe cost is not such a disadvantage.

So clinically I think there are more advantages than disadvantages.

**When did you start your involvement with Vet-Stem? How many cases have you treated? What kind of results are you seeing?**

I started using stem cells in conjunction with Vet-Stem in January 2010. I have treated a total of 16 patients, 3 of which are were repeat injections. Results that I am seeing (in patients with hip dysplasia, stifle injuries, hock and carpal ligamentous injuries) are pretty much what stem cell is claiming, that is 80% of patients show improvement. Sometimes in as little as a few weeks owners are seeing their dogs showing increased energy and behavioral improvements.

**How do you choose candidates?**

I would choose candidates that have arthritis that is not amenable to surgery, or have had previous surgery that has made them prone to further arthritis, perhaps in dogs that cannot take an NSAID. An example would be in a dog with hip dysplasia where the owners are not planning on getting a hip replacement, stem cell injections would be ideal. I also use stem cells in dogs with cruciate tears who have been treated and have underlying osteoarthritis, or whose stifles joints have been chronically arthritic, and dogs with elbow dysplasia that has been managed medically or surgically that are still arthritic. I use it as an adjunct treatment to NSAIDS, or for patients who cannot take an NSAID due to its side effects.

Sometimes stem cell use is driven by the clients who are investigating the news, and sometimes it is not appropriate. It is important to make the point that in terms of cruciate injury it is necessary to first stabilize the joint surgically and then to follow up with stem cell treatment. I have gotten some calls from clients wanting to know whether I can treat their dogs stifle injuries with stem cell therapy alone. That is not really appropriate as you end up with a mechanical instability of the joint.

**Are you using stem cells for any other applications other than OA?**

No. I have not used stem cells for any other applications, but I would be quite interested in treating an immune mediated polyarthritis case. The usual treatment is a high dose steroid treatment for a long term, which is fairly aggressive and has many side effects. I should also mention that stem cells are not to be used in patients with underlying neoplasia

**Are you participating in any clinical trials using stem cells?**

No I'm not, but I do all the follow up with each patient. Vet-Stem requires a follow up appointment with me and a questionnaire on patients using their stem cells at 30, 60, and 90 days for FDA purposes in order to maintain their licenses. The questionnaire and follow up measures quality of life according to owner/clinician. All of that information goes back to Vet-Stem.

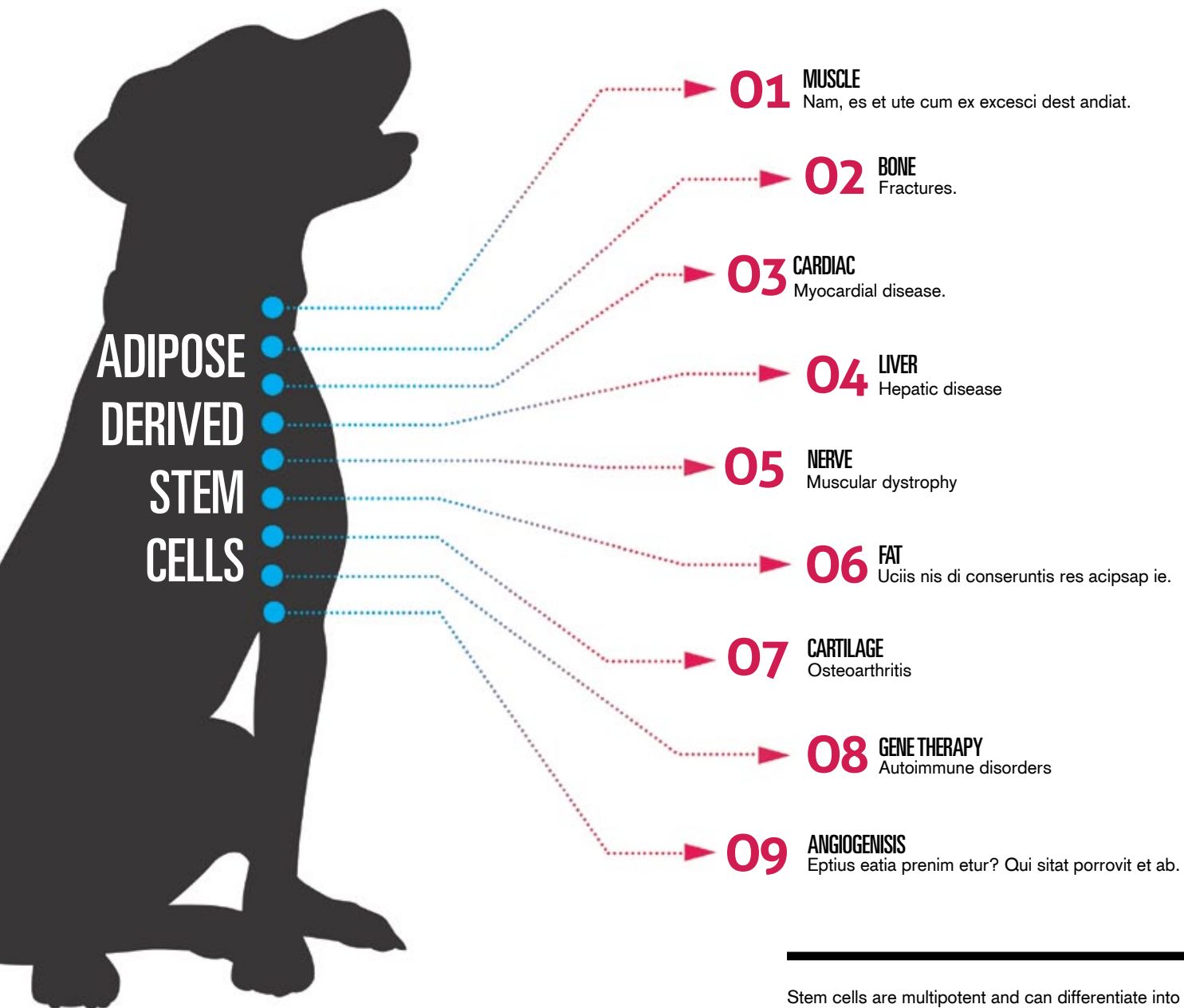
Lastly, on the day we did our interview, I was invited into the CWS treatment area to watch Dr. Kuzma inject a patient of with stem cells. Wally, a mature male neutered spayed Rottweiler mix. He had TPLO surgery in both stifles about 6 years ago, and 1 year ago had stem cell treatment for both stifles. His owner was really pleased with the results, and reported being able to use lower dosages of NSAIDS post stem cell treatment. Now his owner is finding that Wally is not doing as well as he used to be doing after the original stem cell injection. Today Wally is back for his second injection. Under light sedation Wally's stifles are shaved and prepped aseptically. Dr. Kuzma removes the stem cells from their package and injects them into Wallys stifles. This takes less than 15 minutes and its all over and done with. Wally will be discharged this afternoon.

(cont'd pg.28)

**“I WOULD CHOOSE CANDIDATES THAT HAVE ARTHRITIS THAT IS NOT AMENABLE TO SURGERY, OR HAVE HAD PREVIOUS SURGERY THAT HAS MADE THEM PRONE TO FURTHER ARTHRITIS...”**



## POSSIBLE APPLICATIONS FOR FAT-BASED STEM CELL TREATMENT



Stem cells are multipotent and can differentiate into tendon, ligament, bone, cartilage, cardiac, nerve, muscle, blood vessels, fat, and liver tissue (see diagram below). The stromal fraction that is harvested from adipose tissue is a heterogeneous mixture of regenerative cells.

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VET ON A  
**BOAT**  
BC SALMON FARMING



“FARMS OPERATE SINGLE YEAR- CLASS SITES, WHICH MEANS ALL OF THE FISH ON THE FARMS ARE THE SAME AGE. THIS IS IMPORTANT FOR SEVERAL REASONS: FIRSTLY, THIS REDUCES THE POTENTIAL SPREAD OF FISH PATHOGENS FROM OLDER FISH TO YOUNGER FISH AND SECONDLY, HARVESTING AT ONE POINT IN TIME ALLOWS THE FARM SITE TO BE FALLOWED - LEFT EMPTY WITH NO FISH...”

## VETERINARIANS PIONEER AMID CONTROVERSY

**W**hat if...looking at your patients required travelling by car, plane and boat to a farm? ...you could only fully examine a patient once he/she was dead? ...the 'examination room' was a trolley that rolled back and forth on a metal walkway in stormy seas? These questions highlight just a few of the differences that make being an aquaculture vet a challenging but often fun veterinary specialty.

Aquaculture has been around for thousands of years: records show that the Chinese practiced 'fish farming' as early as 2000 BC and many other ancient societies cultured aquatic plants and/or fish as well. Modern aquaculture has a much shorter history and large scale salmon production is younger still - less than 60 years old. In British Columbia, the fledgling salmon farming sector started to take shape in the mid 1980's.

Being a veterinarian in a relatively new agricultural sector really is a pioneering effort. And while aquaculture vets share a number of similarities with other vets - they have the same educational background, focus on animal health and welfare and, as with any large-scale food production, these vets manage population, not individual health - here the similarities end.

The culture of fish is far removed from our experiences with terrestrial animals. Even the most primitive of fish species has evolved many complex adaptations to living in the water and we, as humans don't always understand their needs well.

### Complicating matters are:

*-Significant differences in the culture condition requirements of even closely related species, for example, Coho, Chinook and Atlantic salmon all require different diets and densities and experience different diseases*  
*Ever-changing technologies as more is learned about specific culture requirements.*

*-The need to balance the animal's health and welfare with minimal impact and interaction with the environment.*

*-The differences in ocean conditions from one salmon farming jurisdiction to another that restrict the ability to take lessons learned in these other areas and apply them unconditionally to BC salmon farming.*

So how different is it to be an aquaculture vet?

Well, aquatic vets can't take for granted whether their fish are able to get enough oxygen to breathe; we need to be continuously aware of changes to the environment (area specific differences, seasonal changes due to overturn of upper and lower water layers) that impact dissolved oxygen levels. We need to know about marine plankton: levels and species that may be harmful to the fish population. We need to know about predators and techniques, such as predator nets that enclose the entire net cage system, that eliminate attacks from other animals and the stress that can be caused by their presence. We need to know about the complexities of salmon feed: the differing nutritional requirements at different life stages, feed delivery systems and feeding regimes that maximize health and growth, but minimally impact the environment.

Working in an agricultural sector that has experienced so much scrutiny and controversy has its positives and negatives and these highlight additional differences between terrestrial animal and aquaculture veterinary care. In fish medicine in Canada, all therapeutic treatments require a veterinary prescription and are only prescribed to treat infection. These treatments are given to the salmon in their feed and as with other production animals, a group, not individual fish are

treated. So ensuring that the proper dose is provided requires accurate knowledge of the number and size of fish to be treated as different sized fish eat different sized feed. We need to know how much of the feed they are eating, and even the palatability of the required medicant as fish don't like bitter tasting antibiotics. Moreover, all antibiotic treatments have a withdrawal period to clear the antibiotic from their system prior to harvesting. Even this calculation is not simple and requires knowledge of the water temperature as cold blooded animal's metabolism is directly related to their environment - metabolism is much slower in cooler waters than it is warmer waters.


People are often surprised to learn that very little antibiotics are utilized in salmon farming with fish often requiring no more than one or possibly two treatments. It is not uncommon for entire populations of fish to receive no treatment at all during their life.

We put a lot of emphasis on preventative medicine and biosecurity to ensure that farmed fish are as healthy as possible. For example all farmed salmon are individually vaccinated to prevent infectious disease. Every fish is anaesthetised prior to vaccination to reduce handling stress and given an injection of vaccine. This is done when the fish are still in their freshwater production phase to protect them from pathogens commonly found in the marine environment. Since each farm site consists of approximately ten 30m by 30m cages and each cage contains about 50,000 fish, each farm site holds about 500,000 fish -that's a lot of fish to vaccinate! Additionally, as salmon are entered into about 40 farms sites throughout BC each year, stocking of these sites represents about 20 million vaccinated fish!

Farms operate single year- class sites, which means all of the fish on the farms are the same age. This is important for several reasons: firstly, this reduces the potential spread of fish pathogens from older fish to younger fish and secondly, harvesting at one point in time allows the farm site to be fallowed - left empty with no fish. Fallowing is a benefit for cleaning and sterilizing the site equipment prior to entry of the next production group and allows any fish feces below the net pens to break down naturally. Fish and the environment are continuously monitored to watch for concerns. As aquatic vets, this is most often done by looking at dead fish (mortalities). Mortalities may be collected by divers or specially designed collection systems that lift mortalities to the surface for removal. Mortalities are examined to determine the cause of death. Most often infectious disease is not a main cause, and barring unforeseen environmental issues such as low oxygen or harmful plankton blooms, farmed salmon survival from saltwater entry to harvest is very good - about 95%. In contrast, survival for wild salmon from saltwater entry to adult returns is about 5%.

The level of transparency and health information sharing in salmon farming in British Columbia is very rigorous. All antibiotic use is tightly controlled and monitored and this information is summarized each year and provided to the government for entry onto public websites. In BC, all fish health data as well as sea lice counts are shared with the government and this information is posted on public websites as well. Fish health and sea lice are not only assessed by fish health personnel employed by the farming companies but government veterinarians and fish health technicians also visit farms and conduct their own assessments. There has been a lot of debate about aquaculture in British Columbia and lately much of it has been centered on fish health issues. Much of the criticism has been unjustified and is a source of ongoing frustration for veterinarians and others who work in salmon farming. In the following editions of the magazine we will have an opportunity to address specific topics including sea lice, infectious diseases and wild and farmed fish interaction in the point of view of veterinarians. **WCV**





“THE BROUGHTON FISH FARMS RAISE ATLANTIC SALMON (SALMO SALAR) IN NET-SIDED PENS IN THE WATER. WILD PINK SALMON ARE SEPARATED FROM THE FARM FISH ONLY BY THE MESH OF THE NET ENCLOSURES. LICE FREELY PASS FROM WILD FISH TO FARM FISH, AND VICE VERSA...”

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BC SALMON FARMING FACTS:

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ANNUAL PRODUCTION IS ABOUT 80,000 METRIC TONNES

01

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DUE TO CONSOLIDATION, BC SALMON FARMING CONSISTS OF THREE ATLANTIC SALMON PRODUCERS AND ONE CHINOOK SALMON PRODUCER

02

---

OVER 95% OF BC PRODUCTION IS ATLANTIC SALMON — THIS SPECIES IS PARTICULARLY SUITED TO GROWTH IN CULTURE

03

---

ALL THE FARMS OPERATING IN BC COULD EASILY FIT WITHIN STANLEY PARK.

04



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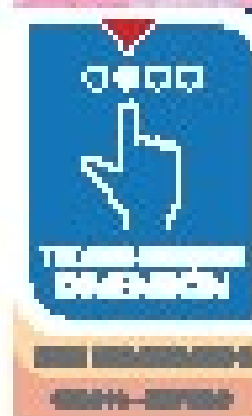
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# THE BC SPCA WILD ANIMAL REHABILITATION CENTRE WILD ARC IS SEEKING OUR HELP

**D**ear Editor,

The BC SPCA Wild Animal Rehabilitation Centre (Wild ARC) is seeking your help to replace its current analog x-ray machine for its wildlife facility in Victoria, BC. Wild ARC is the only wildlife rehabilitation centre on southern Vancouver Island and treats over 2,000 wild animals annually from throughout the region. Our efforts are not funded by any government agency and therefore we rely on public support and donations to fund our good works.

Wild ARC's mission is to provide humane care to injured, orphaned, sick and distressed wildlife based on established rehabilitation standards and the animal's natural history. Each patient is treated individually and assessed for eventual release back into the wild. Wild ARC also aims to educate the public about wildlife, animal welfare, and co-existing with nature. Over 80% of the animals treated at Wild ARC are impacted by human activity.

Wild ARC is permitted annually by the BC Ministry of Environment to rehabilitate raptors, mammals, amphibians and reptiles, also by the Canadian Wildlife Service to treat migratory birds. Seals and other marine mammals are rescued and emergency medical treatment is administered until the animal can be transferred to a facility specializing in marine mammal care. As a member of the Wildlife Rehabilitators Network of BC, the International Wildlife Rehabilitation Council and the National Wildlife Rehabilitators Association, Wild ARC is constantly abreast and contributing to, the latest research in wildlife rehabilitation and wildlife medicine.

In this specialized field of animal welfare, Wild ARC staff are highly trained individuals, having various animal care and biological educational backgrounds in addition to wildlife experience. This experience has prepared them for working with the over 140 different species of wild animals treated at Wild ARC.

Radiology has provided an extremely valuable tool in the diagnosis, treatment and management of many conditions here at the Centre. There are many situations where x-rays can mean life or death for our wild patients – for example, a radiograph can tell us if an eagle that has a broken wing is a suitable candidate for surgical fracture repair.

Our current x-ray machine is no longer viable and without an x-ray machine on site, our diagnostics are severely limited. The inability to take radiographs on site means the only option is to transport off site. In many cases this is not an option because of the undue stress of transport as well as the increased cost to its care. Wildlife are not accustomed to the sights, sounds and smells of humans so the containment and transport to the closest veterinary facility could cause tremendous stress and potentially compromise the care of many of our wild patients.

We are hoping to find a reasonably-priced or free x-ray machine as we are on a very limited budget.

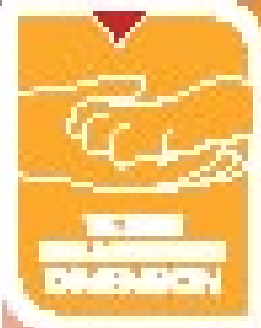
To learn more about Wild ARC, please visit our website at [www.wildarc.com](http://www.wildarc.com). To contact us about a potential replacement x-ray machine, please contact us by phone at 250-478-9453 or by email at [info@wildarc.com](mailto:info@wildarc.com).

Thank You,  
Angela Kendall, RAHT  
Administrator, BC SPCA Wild ARC



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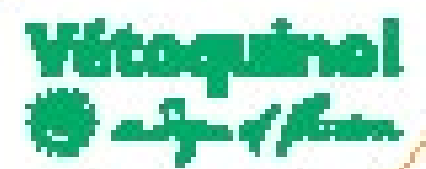
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# A PIONEER IN FELINE MEDICINE

AN INTERVIEW WITH  
DR. MARGIE SCHERK

By Sarah Armstrong DVM,  
SBCV Board of Directors

**“ I RECOMMEND PRETTY MUCH ALWAYS USING AN NSAID AND AN OPIOID IN A CAT FOR PAIN, AS ALMOST ALL MAJOR DISEASES HAVE A ROUTE IN INFLAMMATION I WOULD LIKE TO CLEAR UP THE MISNOMER THAT MELOXICAM IS NOT SAFE TO USE IN CATS. MELOXICAM IS EXTREMELY SAFE FOR USE IN CATS AS LONG AS IT IS DOSED APPROPRIATELY BASED ON LEAN BODY WEIGHTS AND USED IN HYDRATED CATS...”**



I had heard lots about Dr. Scherk since moving to the West coast 2 years ago. I had heard about her being one of the first to open a feline specialty practice, and of her work with analgesics and their applications in felines. I also heard her give a presentation at last years IVECCS on feline lower urinary tract disease, which was a great talk that highlighted Margie's tremendous enthusiasm for feline medicine. Early this year I was invited to her home in East Vancouver to interview her for the West Coast Veterinarian magazine. I pulled up to a well-groomed cobalt blue home, with a "kitty" welcome sign and knew immediately I was at the right address. Once inside I was welcomed into Margie's home and we started our interview. The conversation was easy, and I definitely learned a lot about feline medicine along with some insight on Margie.

**What are you currently working on in feline medicine?**

I am currently working on reviewing grant proposals for the Winn Feline Foundation and preparing upcoming talks for the next few months. Some of my upcoming lectures will be at the Western College of Veterinary Medicine, and as a sixth time repeat speaker for the Association des Medecines Veterinaires du Quebec (AMVQ) in Quebec. I will be lecturing at conferences for the American Animal Hospital Association (AAHA) the Ontario Veterinary Medical Association (OVMA), and the Veterinary Community (CVC). I will be both speaking as well as leading hands on labs with the Veterinary Medical Association (VMA). I am course coordinator for the North American Veterinary Conference (NAVC), and I will be lecturing as well as coordinating speakers and labs for the Feline Institute in Orlando in May 2011.

I act as editor for the Journal of Feline Medicine and Surgery (JFMS), which takes me about 15-20 hours per week. I review papers for several other journals including the Journal of the American Animal Hospital Association (JAAHA), the Canadian Veterinary Journal (CVJ), Veterinary Behavior: Clinical Applications and Research, Clinician's Brief, and the Compendium.

I founded the feline internal medicine folder on VIN but am currently not active on it. I do teach on VIN in online courses as well as lead rounds both for VIN as well as for the AAFFP.

I also edit and contribute to textbooks. Recently, I have co-authored a chapter on liver diseases with Sharon Center in the last two Ettinger's "Textbook of Veterinary Internal Medicine Expert Consult." I recently finished an extremely lengthy chapter on Renal diseases for Susan Little's book, The Cat: Clinical Medicine And Management and have to start on

my chapter entitled "The cat friendly practice" as well as other shorter sections for the BSAVA Manual of Feline Practice.

Lastly, I write questions for ABVP feline exam, and in the past have been on the NAVLE exam writing committee. Im about to sit on the WSAVA committee. I just try to spread it out across organizations that I think I can contribute and do something useful.

**What is your advice on a few simple things the rest of us could do to practice better on cats - you must see loads of mistakes, or things that people forgot to do that should have been remembered - if there was one thing you could tell us, what would it be ?**

The first thing is to try to think like a cat, and try to imagine what it would be like to be a cat in the environment you are in. Stress plays a huge role in cats, and we are well aware now of how many conditions are related to stress in cats. Tony Buffington has researched this area heavily and is making efforts to improve and advocate environmental enrichment. I think that's really important.

Another thing to recognize is that the body (which ever species it is) is designed to heal itself, therefore it's extremely important not to get in its way and make the job harder. This means that one of the most important things we can as clinicians is to start with a really thorough history, and a comprehensive physical exam, such that imaging and labwork only confirms your suspicions. You should be 90% of the way there without diagnostics after a good history taking and physical exam.

Another point I would like to make is that we need to be focusing on hydration, analgesia and caloric intake and the body will take care of the rest.

I recommend pretty much always using an NSAID and an opioid in a cat for pain, as almost all major diseases have a route in inflammation I would like to clear up the misnomer that Meloxicam is not safe to use in cats. Meloxicam is extremely safe for use in cats as long as it is dosed appropriately based on lean body weights and used in hydrated cats. I co-wrote a review article published by the American Association of feline practitioners (AAFP) on the safety of the long-term use of NSAIDS in cats. This review looked at 108 articles and is the gold standard. The Black box warning in the United States that came out recently is unfounded. Nobody knows what that was about. A dosage of 0.2 mg/kg subcutaneously based on ideal lean weight as a one-time dose for acute pain is safe and useful. For long-term use, the dose should be dropped down to 0.05 mg/kg per os every 24hrs. I also don't care about whether the cat is in renal failure or not as long as they are hydrated. There is a paper just about to be published that shows that even if cats are in stage 1, 2, or 3 renal disease using

IRIS renal staging methods, NSAIDS were found to be safe. The cats with renal failure in this trial did not get worse, and in fact some cases actually improved.

Another thing we do not do is we do not calculate how much food a cat needs to eat of a particular food type. Instead of passing an owner a bag or flat of canned food, we need to calculate caloric intake and specify what exact amount they need to be feeding their pet per day. We tell clients to injects 100 ml SQ fluids or 2 ml of clavamox q 12 hrs, and we should also be telling clients how much food to give their cats. We do not treat diets as therapy and we should. It is impossible to distinguish true weight loss unless you know that they are eating adequately.

I think we are also massively overusing antibiotics. There actually aren't many situations where you need antibiotics. We also massively over use antacids (h2 blockers). Unless nausea is associated with uremia it is not warranted. We are risking altering stomach pH and thereby altering the stomachs bacterial microflora. I believe in using antibiotics and antacids sparingly.

**What is your academic background? How did you get to this point?**

I had spent many summers shoveling manure growing up. I studied Zoology at the University of Toronto for two years, as I wanted to be an ethologist originally. After getting into some pretty erudite stuff, I decided that there might be a more practical midpoint, which landed me into the path of veterinary medicine. I graduated from the Ontario Veterinary College in 1982 wanting to work with dairy and beef and drove out to British Columbia immediately after graduation. I wanted to live where I could see the mountains every day to remember just how small and my life and problems are. I worked in Creston for my first year in a mixed animal practice and then migrated to the coast for personal reasons. In Vancouver I did some locums and then worked at the SPCA hospital for a year where I got to see a huge volume of cases and got lots of exposure to surgery. The SPCA was also where I learned that the relationship between a person and their companion animal could help them overcome their situations if I treated them with honor and respect. People from the poorest situations became creative and were so proud to have come up with the money to help their pet!

**What prompted you to open a Cats only clinic? What was your journey into opening Cats Only Veterinary Clinic?**

While I worked at the SPCA I sat there, listening to the endlessly barking dogs made me think about how much stress that must add for a sick cat. Kind of like the stress of hospitalizing an injured Palestinian and Israeli, both victims of violence, together.



I had never heard of a single species practice at that time but found out about Heritage Cat Clinic in Victoria, which was the only cat clinic in Canada. I went for a visit and was welcomed. The roll of film I shot was destroyed in developing which I took as a sign that I would need to start using MY ideas. I built a facility that reflected who I was and was very proud of it. I opened Cats Only Veterinary Clinic in 1986 and sat and passed the American Board of Veterinary Practitioners (ABVP) Board exams in feline practice the first year they became available (1995). I sold the clinic in 2007 and worked there for an additional year. I loved the ongoing relationships with clients and getting to know their kitties. Growing a team that danced well together was very satisfying...but took a LONG time.

**Where does your drive for cats and becoming a veterinarian come from?**

I grew up in Toronto where we always lived with cats. I was pretty happy when I was sequestered with a good book and one or more cats. As a teen, I wanted to be a kid on a farm because the city wasn't cool and I hung out with horses whenever I could. From then on, I wanted to work with large cats and primates. My heroes were Konrad Lorenz and Jane Goodall. Ethology was my future. I actually never considered vet medicine even though I was always trying to rescue injured critters people brought me. I find veterinary medicine fascinating.

**What is your number 1 achievement in veterinary medicine and in your non academic life?**

Pioneering the transdermal fentanyl patch in veterinary medicine and trying to raise awareness of pain and analgesia. Trying to teach respectful and compassionate handling of cats as well as to learn and teach about feline geriatric internal medicine.

In my non academic life, my biggest achievement is raising two absolutely incredible kids of whom I am extremely proud. I'm also proud of my participation in a couple of triathlons in 1985 – that was cool.

**What do you do in your spare time - do you have ANY spare time?**

I absolutely love to cook. My favorite type of cooking would have to be French and Italian. I also love to bake and to can foods. Cookbooks I use most often would be Julia Child's Mastering the Art of French Cooking, The New Basics (Silver Palate), and De Lucas Italian Way, but I have many other cookbooks I also use.

I also work out 5 times a week, and I really enjoy distance training. Im going to take part in a triathlon very soon- I have not been in one since 1995.

Im executive director for my garden- meaning I pay to have it done. I also love interior design, and helping

other people with their home design.

**Who makes up your family (furry and non furry)?**

I am married to Jim Bilenduke, a clinical pathologist at True North Veterinary Diagnostics. We met in 1997, and married in 2002. I have 2 adult children.

My furry family consists of 4 cats. Mr. Will is a grey tabby DLH who decided to come in through the cat door and hang out on top of the dryer, sneaking food whenever he felt safe enough from the other cats. He is approximately 7 years of age. Nimitz is a ginger DSH who we met at Cats Only as a very young kitten (approx 6 weeks of age) in 2005. He had been abandoned in Manning Park and picked up by very caring clients. I adopted him when his projectile vomiting with evidence of megaesophagus and aspiration pneumonia became more than these good samaritans had bargained for. He is treat trained to perform high five, low five, up, and can touch with his right as well as with his left paws, distinguishing between them. Jules and Monty (also ginger, although Monty is a DLH) are approximately 10 and 7 months respectively when I met them as participants in a behavior lab I included a couple of years ago at NAVC Institute. Jules bullies Nimitz, so I have been learning about which med works best for whom (Nimitz is on Zylkene and Jules is on Paxil) while trying to teach Jules other behaviors. **WCV**

*Margie is a DVM, a Diplomate of the ABVP (feline), and current editor of the Journal of Feline Medicine and Surger (JFMS) journal.*

**“ANOTHER THING WE DO NOT DO IS WE DO NOT CALCULATE HOW MUCH FOOD A CAT NEEDS TO EAT OF A PARTICULAR FOOD TYPE. INSTEAD OF PASSING AN OWNER A BAG OR FLAT OF CANNED FOOD, WE NEED TO CALCULATE CALORIC INTAKE AND SPECIFY WHAT EXACT AMOUNT THEY NEED TO BE FEEDING THEIR PET PER DAY...”**



**RIGHT:** Margie at home, in here favourite place, the kitchen, along with her two cats orange 1 and orange bastard cat 2



# INTERVENTIONAL ENDOSCOPY

# URINARY INTERVENTIONS

By Marilyn Dunn DMV, MVSc, Dipl. ACVIM  
and Sharron Brownlee

**T**he use of interventional endoscopy (IE) is a relatively recent advancement and can be used to alleviate a variety of urinary disorders. It can offer significant life improvement for a number of veterinary patients using non-surgical methods, reducing hospitalization and recovery time. Cost is often the same as surgery since the equipment used can be quite costly. The procedure has

been used in specialty practice and teaching hospital environments for a few years, but it has yet to become a commonly called for referral request from general practice. This may be in part due to lack of knowledge that these services (not yet defined as a true recognized specialty, more of a sub-specialty) are available in British Columbia by a qualified interventional specialist, or is it mainly because veterinarians are still sitting on the fence wondering if this technique has merit to improve the lives of their patients. Well, the fact is, these procedures have terrific and long lasting benefits for your patients and they are now available right on your doorstep.

Allyson Berent DVM, DACVIM from the Animal Medical Centre in New York City, NY is one of the pioneer's in this advancement of veterinary medicine. Marilyn Dunn DVM, DACVIM currently working at Canada West Veterinary Specialists in Vancouver, BC had the pleasure of doing a fellowship alongside Dr. Berent to learn the techniques.

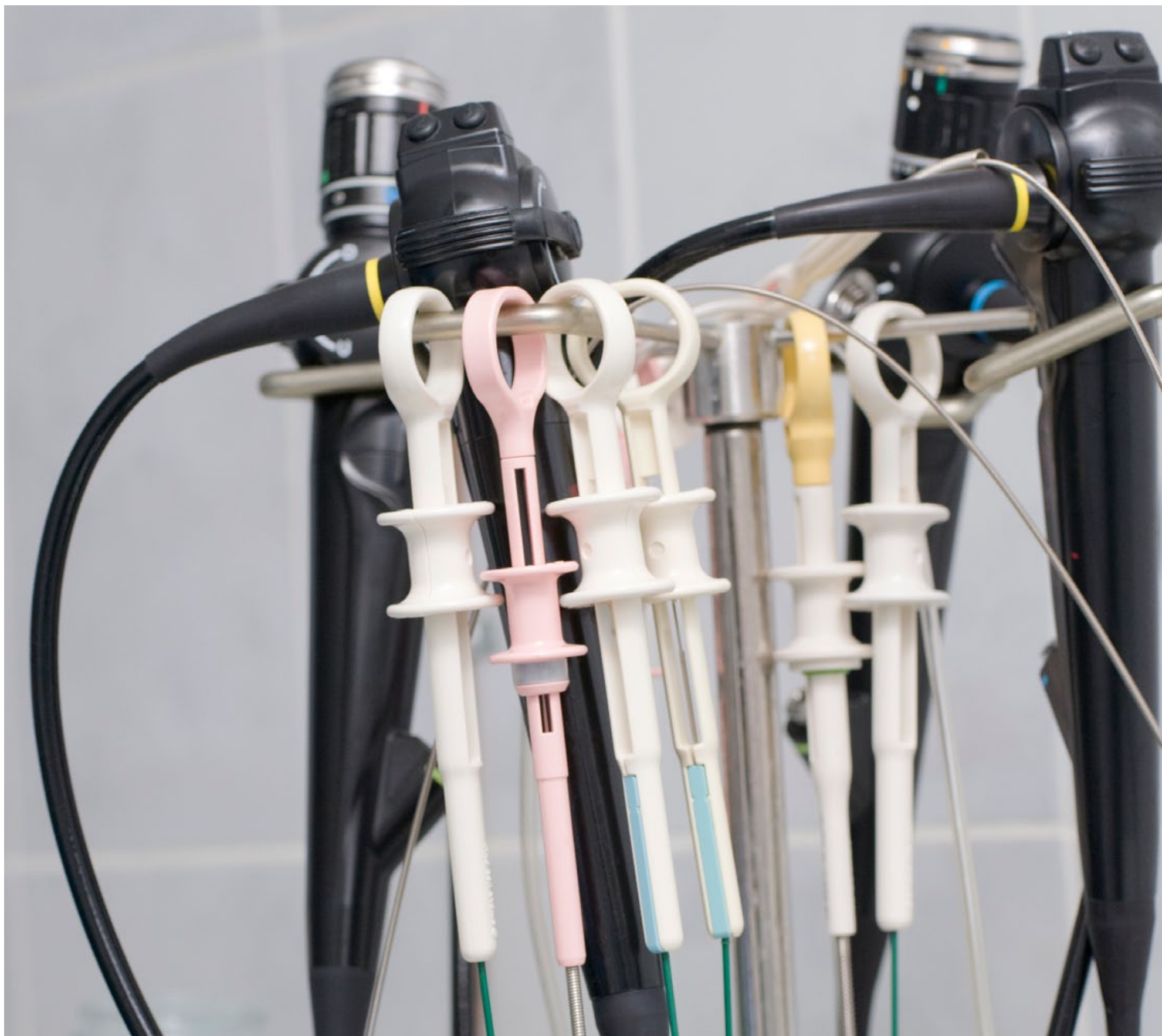
Endourology is the use of endoscopic optical instruments and other tools by a specialist with special expertise in navigating inside the kidney, ureter and bladder. This specialty along with interventional radiology and endoscopy are certainly the standard of care in the human medical field, but as we know, a lot of these procedures remain out of reach in the

veterinary field for many years after they become mainstream in the human field. Interventional endoscopy is now widely used in veterinary specialty and teaching hospitals and is used to treat a myriad of conditions and diseases. The goal of interventional endoscopy is to use endoscopic equipment along with current radiological procedures such as fluoroscopy to gain access to virtually any part of the body accessible by endoscopy to aid in diagnostics and perform therapeutic procedures concurrently.

One of the techniques used in IE is ureteral stenting. It is performed for a variety of disorders to divert urine from the renal pelvis into the urinary bladder. This technique can be useful in patients with ureteral obstruction due to ureteral stones, ureteral or trigonal obstructive cancer, following ureteroscopy (endoscopy of the ureter), for post-operative ureteral anastomosis, ureteral tears, ureteral spasm, or ureteral inflammation. In addition, the presence of the ureteral stent may result in subsequent passive ureteral dilation to permit passage of previously obstructive stones, or allow passage of the flexible ureteroscope for appropriate ureteral intervention. This technique has been performed in over 100 dogs and cats, and is currently routinely performed for ureterolith-induced obstructions. Ureteral stenting is also ideal in patients with nephroliths or ureteroliths that are undergoing shockwave lithotripsy to aid in fragment passage following treatment. Stent placement in the ureter for bladder tumors causing obstruction is now being performed routinely as well. (Source: [www.amcn.org/node/342](http://www.amcn.org/node/342))

#### **Endoscopy is used to treat things such as:**

- Dog and cat recurrent urinary tract infections
- Dog and cat incontinence
- Kidney and ureteral stones





# CASE STUDY

Paloma, an 8-year-old spayed female domestic shorthair was diagnosed with IRIS stage 2 renal failure. She did well until a year later when she acutely began vomiting, became anorexic and severely depressed. On physical examination, she was dehydrated and severely azotemic (IRIS stage 4) with a low specific gravity. An abdominal radiograph revealed the presence of ureteral stones on the right side and some small bladder stones. An ultrasound showed hydronephrosis and hydroureter on the right side confirming that these stones were obstructive.

Paloma's ureteral stones and bladder stones were removed surgically and a double pigtail ureteral stent was placed retrograde through the bladder under fluoroscopic guidance. Mineral analysis of the bladder and ureteral stones identified them as being composed of calcium oxalate. Four days following stent placement, Paloma's azotemia markedly improved and she returned to an IRIS stage 2 renal failure. She has continued to do well over the past 2 years.



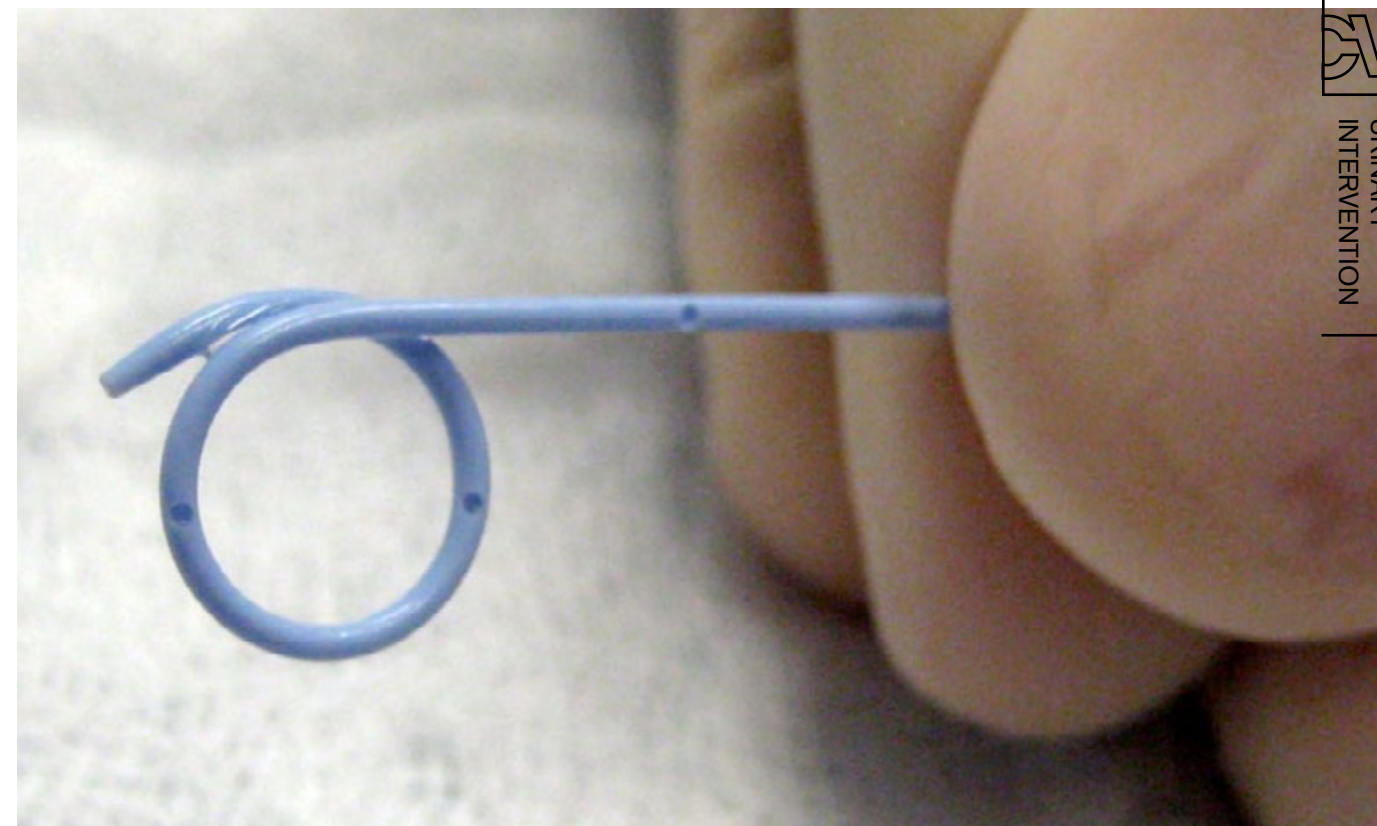
**LEFT:** Lateral abdominal radiograph showing ureteral stones and some radio-opaque debris in the region of the ureters. Both kidneys are irregular in shape and some small bladder stones are seen.



**LEFT & BELOW:** Post-operative abdominal radiographs showing the right ureteral stent. A pigtail is present in the right pelvis and in the bladder.



**“THE GOAL OF INTERVENTIONAL ENDOSCOPY IS TO USE ENDOSCOPIC EQUIPMENT ALONG WITH CURRENT RADIOLOGICAL PROCEDURES SUCH AS FLUOROSCOPY TO GAIN ACCESS TO VIRTUALLY ANY PART OF THE BODY ACCESSIBLE BY ENDOSCOPY TO AID IN DIAGNOSTICS AND PERFORM THERAPEUTIC PROCEDURES CONCURRENTLY...”**



**ABOVE:** Ureteral stent optimized for veterinary applications. It is a double-pigtail, multiple fenestrated, polyurethane stent designed for use in both cats and dogs

- Respiratory tumors
- Nephrostomy tube placement, among others

**Interventional endoscopy can be used to perform the following procedures:**

- Ureteral Stenting: for Stones, Strictures, Tumors, etc.
- Treatment of Kidney Stones:
  - Percutaneous Nephrolithotomy (PCNL)
  - Extracorporeal Shockwave Lithotripsy (ESWL)
- Ectopic Ureters: Cystoscopic-guided Laser Ablation (CLA-EU)
- Idiopathic Renal Hematuria/Ureteroscopy
- Bladder and Urethral Stones (Laser Lithotripsy)
- Urinary Polyps Laser Ablation
- Urethral Stenting
- Urinary Incontinence Treatments:
  - Collagen Injections
  - Hydraulic Occluder Placement
- Cancer: Intra-arterial Chemotherapy for Prostate and Bladder Cancer
- Antegrade Urethral Catheterization
- Percutaneous Nephrostomy Tube Placement

In dogs, ureteral stents can be placed under general anesthesia via cystoscopy with concurrent fluoroscopy. First, a guide wire is advanced retrograde through the ureterovesicular junction, then up the distal ureter. Next, a catheter is advanced over the wire under fluoroscopic guidance, the guide wire is removed, and a retrograde contrast ureteropyelogram is performed to help identify any lesions, stones, or filling defects in the renal pelvis or ureter. The wire is re-advanced through the catheter into the renal pelvis and an indwelling double pigtail ureteral stent is placed over the guide wire. For antegrade placement of a ureteral stent, percutaneous nephrostomy access can be achieved under ultrasonic or fluoroscopic guidance. A guide wire is passed down the ureter, into the bladder, and out the urethra. A ureteral dilator is then passed over the wire in a retrograde fashion to dilate the ureterovesicular junction. This technique has proven

useful when there is trigonal obstruction due to tumors or uroliths. Once the stone or tumor is bypassed, an indwelling double pigtail ureteral stent is placed over the wire. After the stent has served its purpose, the stent can be easily pulled under fluoroscopic or cystoscopic guidance and the double pigtails can be retrieved cystoscopically.

*(Ureteral Dilemma – Interventional Radiology – New Techniques; Allyson Berent DVM, DACVIM, Hill's Symposium on Lower Urinary Tract Disease)*

Before the advent of ureteral stenting for ureteral stones, surgical removal of the stones was the only option. Surgery was associated with a high rate of stricture, inability to relieve the obstruction and high recurrence rates especially in small dogs and cats, these patients are the ones most likely to suffer from ureteral stones. **WCV**



Dr Dunn received her Doctorate of Veterinary Medicine from the Université de Montréal in 1994 and did a one-year internship at the small animal hospital at the Université de Montréal. In 1999, she completed a 3-year residency program in small internal medicine and a Master's degree at the University of Saskatchewan. In 1999 she became a Diplomate of the American Col-

lege of Veterinary Internal Medicine. Dr Dunn then worked in a private specialty practice in Montreal for 2 years. Since 2001, she is a professor of small animal medicine at the Université de Montréal in Saint-Hyacinthe. In 2008 she completed a Fellowship in interventional radiology and endoscopy at the University of Pennsylvania. Besides working at the small animal clinic, she teaches and is involved in a number of clinical studies involving urology and thrombosis. Since 2011, she has developed an interventional endoscopy service at Canada West Veterinary Specialists and Critical Care.



# NOW WHAT? ENTERING THE WORKFORCE...

## 2011 NEW GRAD'S PERSPECTIVE

*This year a few hundred anxious young men and women will be entering into the veterinary work force and will represent the future of veterinary medicine. I wondered what crossed the mind of a new grad this close to graduation so I contacted the Western College of Veterinary Medicine and set up an interview with one of the students.*

By Sharron Browlee  
Editor-in-Chief WCV

*Stephani McLean is a class of 2011 DVM and has been the class president for all four years of the program. Our interview began with an obvious question:*

**What drove you to veterinary medicine?**

I've been destined for veterinary medicine since I was born. I was the kid that always rescued everything in the neighborhood. I grew up in rural Manitoba and was an active member of 4H. Seems like veterinary medicine was almost a natural career choice.

**We are approaching graduation; do you feel prepared to enter into the workforce?**

Yes. I have been very lucky in my mentorship interactions and it has really helped to give me confidence in my skills. I think a lot of confidence comes from your prior experiences and how much you are willing to participate as a student in the learning process. You also have to be OK in the knowledge that you are not going to know everything and be confident enough to say I don't know, but I can find out.

**Are you considering an internship or residency at some point?**

I did contemplate going into an internship, but I am just eager to get started in my career. I wouldn't rule it out in the future; I have developed an interest in Oncology, but right now, am looking forward to starting work

**What type of practice are you primarily interested in?**

Mixed practice is really what I want to do. I really like bovine medicine and think that dairy practice is great for utilizing the skill set we developed in school.

**Where do you hope to practice?**

I have been offered a position at the practice where I did my placement in south central Manitoba. I am in the process of handling the paperwork and am looking forward to returning there.

**What is the confidence level of yourself and your classmates like coming out of school?**

I would have to say that the majority of students in the class are confident that they have learned enough to make them successful in practice. I tend to be an outspoken and confident person to begin with, so I think my confidence is high. There will always be some nerves and some stress, but generally there is a level of excitement.

**Do you feel that the DVM program gives you the full tool set in order to be successful from day one in practice?**

There have been a lot of positive changes in the curriculum and it is better set up for student's individual needs. In third year there is a diversified electives program that allows the students to cater to their individual interests in the veterinary program. The program is great and I think it does allow the students to enter into practice and be confident that they have had the best learning experience.

**What area of practice do you feel most unprepared for?**

In a referral/teaching type environment there is a lack of sense of reality as far as case management. In regular practice there are always concerns about how best to utilize the client's money and focus on the diagnostic plan that is going to give you the most information for the least amount of money when budgets are a concern. I would say that this is the biggest

(cont'd pg.46)





struggle in small animal. For large animal, if I had to say anything about being unprepared it is probably the lack of caseload that we experience in the college. Sometimes there is not enough exposure to large animal cases to have a high level of confidence in this area of veterinary medicine.

**What, if any, trepidations do you have about the future of veterinary medicine?**

I think small animal veterinary medicine is evolving in a good direction. Pets are more valuable as family members and this is always a positive thing as it allows veterinarians to utilize their knowledge and training. In the large animal sector it is more difficult as it is so dependent on the current state of the market. These factors influence the number of active farms and the individual value on the animal you are treating. As far as the percentage of males to females, it is an interesting dynamic. The average age of our graduating class is 26-27 years old with a high percentage of females. This age is prime time for people to want to settle down and start families, so it is a tough decision between the two. The majority of people in the class have already obtained another degree before their DVM, so they are ready to get into the workforce and that puts family on the back burner.

**Do you feel the same passion about veterinary medicine now that you did going into the program?**

It's funny because we have this conversation almost daily in the clinics. We say that if every year were like fourth year, it would be wonderful. The first three years are daunting and very stressful, and most are not sure that they could go back to first year. But, now it is wonderful, fourth year is a nice conclusion to the journey we've been on.

**I hear all the time from veterinarians that it is difficult to fill their vacancies. What can a practice owner do to attract you to their practice?**

Really it differs as far as where students are going to practice. I know from the students that are heading back to BC for instance, location is a huge factor in choosing a practice. A lot of the students have already made their decisions on where they are willing to practice. Primarily they are interested in staying closer to the coast and enjoying the lifestyle that BC is so famous for. For me it was a combination of salary and mentorship. Because my experience was so positive with my previous practice, that is where I chose to go back. It's interesting because students from BC tend to go back to BC and Manitoba

students tend to go back to Manitoba. The students from Alberta and Saskatchewan are more likely to disperse among the provinces. I would also say that support staff and the work dynamic are extremely important in being satisfied in a work environment. If the workplace is not a happy place, then it will often cause a vet to move on.

**What interaction are you looking for from your employer?**

I would have to say for small animal medicine I am open to mentoring, but it is not a huge priority. I want good mentorship, but want to work for someone who is OK with my confidence and the skills that I have developed. In large animal I would be looking for a bit more of the leadership and mentoring.

**What resource do you value the most in helping you through your first year?**

It would have to be the professional relationships that I have developed over the years. I am already utilizing those connections and will call on them to help support me in cases where I have questions. The college has a very open policy on keeping in touch and keeping the lines of communication open to support the students in their transition to practice and beyond.

**If you could offer advice to the associations in the different provinces, what would it be?**

Of all the provinces that have students at the school, Manitoba is by far the most proactive. They work very hard to support the students with incentives and interaction. The association goes to the school every fall to talk to students about the summer program and how they can improve things and further tailor the program to the needs of the student. The Manitoba association puts a lot of effort into the well being of the students and support them through the educational process. No other province seems to have the vested interest that they show.

*I want to thank Stephani for taking the time to give us some insight into the thoughts and hopes of our newest crop of veterinary professionals. It's always inspiring to hear the enthusiasm and anticipation in the communication of the veterinary students and I hope that once they enter practice, they maintain that vigor and passion for veterinary medicine.*

**TOP RIGHT:** Stephani on fourth year rounds with a baby linx. **RIGHT:** Vet students at the Hill's Pet Nutrition Primary Healthcare Centre at OVC.

“...STUDENTS FROM BC TEND TO GO BACK TO BC AND MANITOBA STUDENTS TEND TO GO BACK TO MANITOBA. THE STUDENTS FROM ALBERTA AND SASKATCHEWAN ARE MORE LIKELY TO DISPERSE AMONG THE PROVINCES...”







**LEFT:** Stephani in Honduras (2010) with Christian Veterinary Missions  
**BOTTOM:** Vet students practicing in the mock exam room at the OVC.



**“I AM OPEN TO MENTORING, BUT IT IS NOT A HUGE PRIORITY. I WANT GOOD MENTORSHIP, BUT WANT TO WORK FOR SOMEONE WHO IS OK WITH MY CONFIDENCE AND THE SKILLS THAT I HAVE DEVELOPED... “**

I recently asked the veterinary schools in Canada about enrollment and the feminization of the profession. Dr. Peter Conlon, OVC's associate dean of student affairs, and Elizabeth Lowenger, manager of careers and diversity provided some insight.

The shift in a female dominated student body is seen in all campuses across Canada and the US. More women are pursuing post-secondary education. The shift is also apparent in dentistry, medicine, optometry and pharmacy programs, although not to the degree seen in veterinary medicine.

Really there are two questions, why women and why veterinary medicine? The first, the feminization of post secondary education and the medical professions are related to many of the opportunities made available to women since the 1960s due to societal changes.

Females at the primary and secondary levels are generally out-performing their male peers, and the majority of students that do not finish secondary school are male. This may indicate that the way we teach our children favours the way females learn over males.

Why women are choosing veterinary medicine as a career may have little to do with potential work schedule, pay, and the work life balance (in the decision to initially become a vet, but perhaps once in practice). Applicants and incoming students do not choose this career over others for these reasons but rather the satisfaction they get from working with science, people and animals. For most it is an opportunity to match their passions with a career. **WCV**

**Interesting Facts for the OVC Graduating Student :**

- The Ontario Veterinary College will celebrate its 150th anniversary in 2012 **01**
- The percentage of female applicants for the DVM program in 2010 was 78.6% **02**
- WCVM has been expanding and renovating its facilities through a multi-phase, \$74-million infrastructure project that will be completed in 2011. As a result, all WCVM students now have access to world-class facilities and resources including a veterinary teaching hospital that serves as a vital teaching centre for future veterinarians. **03**
- At WCVM, The Class of 2014 is the largest first-year class in the veterinary college's 45-year history - whose 79 members represent communities from across Western Canada and the northern territories. **04**
- At OVC Purina has funded a new Chair in Communications with a particular focus on companion animal abandonment. **05**
- There were 407 applicants compared to 336 in 2009 **06**
- Total enrolment in the incoming Class of 2014 is 116, including 17 males and 99 females. **07**
- At OVC Purina has funded a new Chair in Communications with a particular focus on companion animal abandonment. **08**



# WHAT IS WHITE-NOSE SYNDROME?

**W**hite-nose Syndrome (WNS) is a fungal disease that has been associated with mass die-off of hibernating bats in North America. The name refers to a white fungus that grows on the muzzles and bodies of bats found in mass die-offs since 2006. More than one million bats have died and mortality rates at affected sites are 80-100%. All North American bat species that hibernate are thought to be at risk, with extinctions of some species likely.

As of spring 2010 White Nose Syndrome had been found in Ontario, Quebec, and 14 US states (eastern, mid-west, and west south central). The newly discovered fungus associated with WNS is called *Geomyces destructans*. This morphologically distinct fungus is now known from countries across Europe, although bats do not appear to be dying there. The fungus grows best at the low temperatures associated with bat hibernation (4–10°C). As the fungus starts to grow, bats awaken from hibernation to groom to remove the fungus. The energy required to arouse from hibernation and groom uses overwinter fat reserves, resulting in extreme weight loss. Starvation seems the likely cause of death. Transmission is not well understood at this point in time; while bat-to-bat contact seems to be the main mode of transmission, some evidence suggests human transmission is possible (ex. humans going into mines, caves).

#### **What does WNS look like?**

Bats with WNS exhibit some or all of the following symptoms (descriptions adapted from USGS, National Wildlife Center): White, powdery fungus seen around the muzzle, ears, wing/limbs, and/or tail;

Excessive/unexplained bat mortality at the winter hibernacula; Thin and/or dehydrated bats (wrinkled and flaky appearance of furless areas);

Delayed arousal from torpor following disturbance; Aberrant behaviours (e.g. found on ground inside or out-side the hibernaculum, roosting near hibernaculum entrance, increased bat activity outside the hibernaculum during cold weather especially during daylight hours).

#### **How is WNS transmitted?**

Little is known about this disease. WNS may be spread from bat to bat

during winter months at hibernation sites, but its route of transmission in the summer months is unknown. It is speculated that WNS is also spread by human transporting of fungal spores. For example, cavers, other recreationists such as geocachers, people frequenting mines, and bat biologists, may spread the disease through spores on boots, clothing, or equipment. Human transmission is suspected in some sites, such as in West Virginia and Missouri where cave visitors had been in WNS-affected sites. The appearance of the fungus in sites hundreds of miles from other affected sites may indicate human transmission. The Southeastern Cave Conservancy, National Speleological Society, US Forest Service, Alberta Parks and others have closed some of their caves/mines as a precaution to avoid spreading the fungus.

#### **What is the risk of WNS in B.C.?**

##### **Ecological Cost**

Bats are the primary consumers of night-time insects, and play an integral role in our ecosystem. Bats are important predators on insect pests. A mass die-off of bats is likely to have far-reaching effects on the ecosystem and industries such as forestry and agriculture.

##### **Impact on Bat populations**

In the NE US where WNS was first found, all cave hibernating species of bats are affected (6 species). Several of these same bat species are found in B.C. Potentially, all cave and mine hibernating species in BC. could be vulnerable to this disease (14 of 16 B.C. bat species).

Bats are long-lived mammals, with some species known to live 35+ years. Bats of most species have only one young per year; population sizes will therefore be slow to recover from mass die-off. Populations are unlikely to recover in our life times, if ever. Some bat species extinctions in North America are anticipated.

##### **WNS risk of arrival**

At the current rate of spread WNS may be detected in BC in the next five or ten years or not at all if there is population separation between eastern and western bats. However, the disease may appear sooner through human transmission on clothing, boots, and other equipment from WNS-infected caves to caves used by bats in B.C.

#### **What can you do to help?**

The first step is to prevent human transmission of WNS to B.C. WNS could suddenly be introduced into B.C. on clothing or equipment used

“THE APPEARANCE OF THE FUNGUS IN SITES HUNDREDS OF MILES FROM OTHER AFFECTED SITES MAY INDICATE HUMAN TRANSMISSION...”



*Common Brown bat with the distinctive white fungal powder on its nose.*



underground or in contact with bats. We need to prevent the spreading of spores from affected areas in eastern North America (and Europe) to B.C. The best way to prevent accidental introduction is to not go underground using any equipment or clothing that has been underground or in areas where bats roost in eastern North America or Europe.

Alternatively, decontaminate. Decontamination protocols exist for people recreating or doing work in or around potential bat roosts and cave/mine hibernacula. It is very important that all clothing, boots and equipment be thoroughly decontaminated if they have been in caves in affected states or provinces.

For decontamination protocols, visit the following site and click on the links: <http://www.fws.gov/WhiteNoseSyndrome/cavers.html>

It is recommended that a high level of caution be taken until WNS transmission and distribution is better understood. Please always decontaminate when moving between caves or mines that may be used by bats. At a minimum boots should be thoroughly washed, and clothing and equipment washed in hot water. Large equipment and non-submersible gear should be wiped down with a fungal disinfectant.

***If you find sick or dead bats, please do the following:***

***Dead bat collection protocol***

1. If possible, photograph the scene and the bats.
2. Record time, date, and exact location.
3. If the bat is covered in obvious white powdery fungus, or there are multiple dead bats ( $\geq 5$ ) in one location, please do the following:

Using GLOVES (do not use bare hands, as there is always a risk of rabies transmission from bats when the cause of death is unknown), place each dead bat into its own zip-lock bag. Disposable vinyl or nitrile gloves are ideal. If not available, place double plastic bags over your hands and turn inside out into the zip-lock bag.

Label each bag with date, location (including nearest town/city), collector name and phone number. Place in cool storage.

Throw away gloves, or if not disposable, decontaminate gloves using hot water wash, or a 10% bleach solution.

Contact any of the people named in this article for instructions on what to do with the specimens.

If you are unable to reach anyone within 24 hours, freeze the specimens if you can or discard them in the same location where you found them. Please ensure that the animals and site are photographically documented and the directions to the site are clearly recorded. You can also contact your regional Ministry of Environment Biologist or the Conservation Officer Service and inform them of the situation.

***Sick bat collection protocol***

If you come across a live bat that is showing signs of WNS (covered in white powdery fungus), contact one of the B.C. Ministry of Environment staff listed on page 4 of this newsletter. Do not touch the bat or let your pets near the bat, as there is potential for transmission of rabies. If you are a bat biologist with current rabies vaccination and come across live bats you suspect of having WNS, you can collect the following samples from the bat(s):

1. At a minimum, collect a tape-lift sample (See USGS National Wildlife Center Submission for Protocol).
2. A wing damage index has been compiled by Boston University and should be used by biologists doing work in the West to monitor for signs of WNS. This wing index key is available from the USFWS site: <http://www.fws.gov/WhiteNoseSyndrome/research.html> (Protocols, Wing Damage Index link)
3. If the bat is clearly displaying signs of WNS, please contact BC Ministry of Environment staff listed on page 4 as soon as possible. If the bat has to be euthanized, please follow the appropriate protocols as recommended by the Canadian Council on Animal Care. Indicate on each bag whether the bat was found dead, or was euthanized.

If you find sick or dead bats, please contact any of the following:

Dr. Helen Schwantje  
Phone: (250) 387-4285  
[Helen.Schwantje@gov.bc.ca](mailto:Helen.Schwantje@gov.bc.ca)

Dr. Purnima Govindarajulu  
Phone: (250) 387-9755  
[Purnima.Govindarajulu@gov.bc.ca](mailto:Purnima.Govindarajulu@gov.bc.ca)

Enquiry B.C.  
1-800-663-7867  
[EnquiryBC@gov.bc.ca](mailto:EnquiryBC@gov.bc.ca)



WNS



# GLASSIFIED MARCH 2011

## VETERINARIANS NEED

Compassionate Care! Care Pet Wellness Group North Shore seeks a veterinarian who can bring excellent clinical abilities and great people skills to work with a dynamic team striving to deliver exceptional service to our wonderful clientele. Please bring a proven desire to be part of the team, a sense of humor and humility, and an eye to partnership in the future.

You will need at least one years clinical experience and keenness to learn.  
**Call Brad R Gilbert DVM, at 6049863804 or email at drbgilbert@gmail.com**

Care Pet Wellness Group North Shore requires outgoing confident client oriented veterinarian to share in our patient care. We can discuss flexible time, or job share, 3- 5 days per week.

Emphasis on medical prowess a must, and at least one years experience.

**Call Brad Gilbert at 604-986-3804 or email at drbgilbert@gmail.com to pursue.**

Seeking Associate with interest in Partnership; Progressive AAHA practice requires third experienced Veterinarian to join our committed team. If you like to practice high quality medicine in a fun relaxed environment give us a call. Well-trained, dedicated support staff, newly renovated facility, Dental X-Ray, Ultrasound, computerized records. Relocation allowance, C/E, Medical/Dental benefits, The Nelson area has 2 of B.C.'s largest lakes and best ski hills, great hiking and biking, as well as a vibrant cultural, musical and artistic community.

Visit us and see why so many people move here for the lifestyle.

**Contact Dr Chart at info@selkirkvet.com or fax 250-352-7407**

## LOCUM BANK

Ute Mannhardt

Phone: 250-370-9918 mannharu@telus.net

Small animal - Victoria - experienced, conscientious, compassionate.

Experienced SA veterinarian available after April 15, 2011 in the Lower Mainland/ Fraser Valley area. Please contact Dr. Elizabeth Bartlett at dr\_lizbartlett@hotmail.com

Dr. Sandy Jamieson : Available province wide for locums. Prefer 1 week minimum if out of the Vancouver area. 39 years of extensive practice experience Ask for my CV.

Contact me at 604-983-0101 or sanjak@telus.net

Erin Balcar: Small animal medicine and surgery in Lower Mainland.

Please contact 604.551.7498

erinbalcar@hotmail.com

## MISCELLANEOUS

Whistler Home Rental: Great for relaxing or active getaway's 4 beds (sleeps 8 comfortably), 2.5 bathrooms, fireplace, well stocked with towels, bedding all supplies. Newly Renovated Quite location. Summer Rates: \$150/night Winter Rates: \$350/night

Xmas/New Years \$450/night

**Contact: ckarmstrong@telus.net**

## LOCUM REQUIRED

Do you want to live the dream of enjoyable, challenging work AND plenty of time to live life in a beautiful setting? Then look no further. The Jasper Vet Clinic is looking for a locum for June to Sept. 2011. Work part time in a well-equipped clinic with 3 techs, laser surgery, blood analyzer and great clients and live in paradise. Private accommodation is included and a more permanent position is possible for the right person.

**Contact Janet Jones for more info.**

**780-852-5551 (W)**

**780-852-1150 (H)**

**780-852-1972 (F)**

**jaspervetclinic@telus.net**

## PRACTICE FOR SALE

Well-established SA boutique practice in affluent Vancouver neighborhood and busy strip mall becomes available due to health issues of motivated owner.

Annual revenues of \$400,000 reflect lifestyle and part time work schedule, leaving lots of room and time to develop clientele in average to above average entry barriers for competition. Renew the lease ahead of time for occupancy cost certainty. Priced in the high one hundred thousand's for immediate sale; respond ASAP for a presentation package.

**Please Contact: Terry Jackson, C.G.A. VetAdvise.com \* 301 -566 Lougheed Hwy. Coquitlam, BC V3K 3S3 \* Tel: 604-939-2323 \***

**Email: tjackson@vetadvise.com**

Small Animal Practice in the Fraser Valley - has been in the same location for over 40 years. Well-designed, leased premises. AAHA certified since 1995. Excellent long-term support staff. Grossing \$700K. www.cheamviewvet.com

**Please contact Dr. Cindy Smith at 604-795-5721 or drcindy@telus.net**

## EQUIPMENT FOR SALE

Sonosite Micromax digital ultrasound unit. Purchased December 2008. Two Year's warranty remaining on machine and probes. Includes case and 3 probes: C-11e tight curved array 5-8 Mhz, L38-e 5-10 Mhz linear array and C-60e2-5 Mhz curved array.

These probes allow one to do small animal chests, abdomens and hearts plus equine tendons, joints, and abdomens (up to 30 cm penetration with C-60) Selling only because another veterinarian has joined our practice bringing similar equipment. Probes alone were \$25,000 new. Asking \$20,000 obo for everything.

**Please contact Dr. Alex Wales, Panorama Veterinary Services, Winfield, BC. 250-766-4310 or e-mail pvsl@shaw.ca**

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## Just pure protection,

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There have good reasons to be concerned about the ongoing debate surrounding adjuvanted vaccines and the potential side effects resulting from the chronic inflammation they can cause in cats.

Why take a chance? Provide your patients with fast, safe and effective protection against Feline Leukemia with the new and improved **PURE VAX™** recombinant Feline vaccine.



- No adjuvanted risks
- Stimulates strong cell-mediated immunity\* essential for protection against FeLV infection
- Excellent safety profile with more than 8.3 million doses administered in Europe since launch
- Provides at least 12 months of protection to kittens as young as 6 weeks of age, as well as to cats previously vaccinated with killed virus FeLV vaccines
- See table in box content for details: 10 x 1 dose and 50 x 1 dose

### Indications:

For the active prevention of feline leukaemia virus (FeLV) infection in cats aged 6 weeks and over. For the active prevention of feline herpesvirus-1 (FHV-1) infection in cats aged 6 weeks and over. For the active prevention of feline calicivirus (FCV) infection in cats aged 6 weeks and over. For the active prevention of feline panleucopenia virus (FPV) infection in cats aged 6 weeks and over.



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