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## VMTH Acquires New Linear Accelerator

In a promising development for cancer patients, the VMTH has acquired a TrueBeam linear accelerator, an innovative system that enables expanded options to treat cancer with image-guided radiotherapy. The new system, which was dedicated at the Center for Companion Animal Health (CAAH) in early November, replaces a previous linear accelerator the hospital has had in place for the past nine years.

The TrueBeam system allows UC Davis radiation oncologists to deliver more powerful cancer treatments with pinpoint accuracy and precision. It uniquely integrates new imaging and motion management technologies within a sophisticated new architecture that makes it possible to deliver treatments more quickly while monitoring and compensating for tumor motion, opening the door to new possibilities for treatment of a wide range of tumors.

“With a built-in CT, the TrueBeam is a major step up from our last linear accelerator,” said Dr. Michael Kent, a faculty radiation oncologist and the acting director of CCAH, where

the linear accelerator is housed. “It enables us to treat even the most challenging cases with unprecedented speed and precision. With a broad spectrum of new capabilities, this new linear accelerator makes it possible for us to offer faster, more targeted treatments to tumors, even as they move and change over time.”

The faster delivery rates of treatments offer greater patient safety by shortening anesthesia and treatment times and improving precision by leaving less time for tumor motion during dose delivery. Also of benefit is the TrueBeam’s enhanced fundamental precision, which is measured in increments of less than a millimeter. This new linear accelerator now allows UC Davis to offer the most advanced radiotherapy treatments anywhere in veterinary medicine.

Along with the Medical Oncology, Surgical Oncology, Diagnostic Imaging, and Pathology Services, the VMTH’s Radiation Oncology Service works to provide comprehensive cancer care to more than 1,500 dogs, cats, horses and other animals diagnosed with cancer each year.

## A Note From the Director

Dear Colleagues,

Welcome to the winter issue of *VMTH Heartbeat*, our quarterly newsletter geared specifically to inform our referring veterinarians of developments at the VMTH. I hope this finds you enjoying the New Year, as we all look forward to a successful and prosperous year ahead. We continue to add new veterinarians and new services at the VMTH, as our caseload continues to increase thanks to your referrals. Several of our clinicians have recently become board certified in additional specialties, and are reaching new heights in their careers with clinical trial breakthroughs and new therapeutic approaches.

It was great catching up with some of you at the AAEP Convention in Nashville last month. We hope to see many of you at the Western Veterinary Conference in Las Vegas in February. If you attend, I would like to extend you an invitation to join us at the UC Davis reception. We will

send out a reminder as that date approaches. Attending these veterinary conferences is not only a great time for us to reconnect with old friends and colleagues, but also an opportunity for UC Davis to hear your feedback and disseminate new knowledge through presentations and our booth in the expo hall. Active participation by our faculty, residents, students, staff and alumni provide but one example of the many ways we accomplish the school's vision of leading veterinary medicine and addressing societal needs.



W. David Wilson, BVMS, MS,  
HonDACVIM, Director VMTH

Regards,

A handwritten signature in blue ink that reads "W. David Wilson".

Dr. W. David Wilson, BVMS, MS,  
Hon DACVIM, Director,  
William R. Pritchard VMTH

## Don Low Fellowships Offer Unique Training Opportunities

Every year, the VMTH offers multiple openings for advanced training opportunities for practicing veterinarians through the Don Low/CVMA Practitioner Fellowship. The program provides twenty days of intense continuing professional education in a specialty service of the Fellow's choice. The Fellowship can be completed on a flexible basis, and earns the participant 72 hours of continuing education credits.

Some recent Fellows shared their experiences with us:

"The chance to spend twenty days with the Small Animal Emergency & Critical Care Service was truly a once-in-a-lifetime opportunity. It is not often that one gets to go 'back to school' to learn about the new advances in veterinary medicine. I was fortunate enough to be on the service with the world's top critical care specialists, including Drs. Steve Epstein, Kate Hopper, Karl Jandrey and Matt Mellema. The opportunities to learn and further my knowledge and skill set were so numerous, it's almost impossible to determine the most beneficial aspect of my Fellowship. Future Don Low Fellows should be prepared for an educational, but rigorous, challenge. The program is not just twenty days of VMTH observation, it's an opportunity to be at the forefront of veterinary medicine. The twenty days I participated in the Fellowship were the most intense and informative continuing education opportunities I have ever experienced as a veterinarian. It is a wonderful program, and I truly appreciate the opportunity to learn from the best at the VMTH."

– Dr. Irene Fujishima Nakaoka



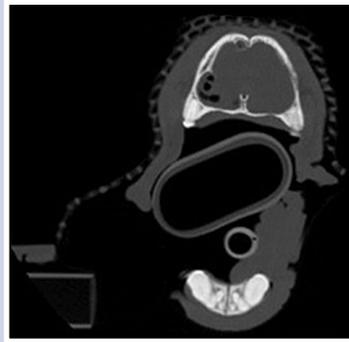
Don Low Fellows get an opportunity to observe cutting-edge procedures at the VMTH.

"It was really valuable to be back in a university setting (with the VMTH's Soft Tissue Surgery Service). Now I can counsel owners better on their options. I now know better what types of cases need to be referred versus what to do in-house. I will refer more now than before because I'm more aware of the level of pre-operative diagnostics available at UC Davis, which may yield better outcomes for patients. The most unusual case I saw was one involving Kabang, the hero dog from the Philippines. It was fascinating to watch her reconstructive surgery—a once-in-a-lifetime experience. I highly recommend the Don Low Fellowship and would jump at the chance to be a Don Low Fellow again."

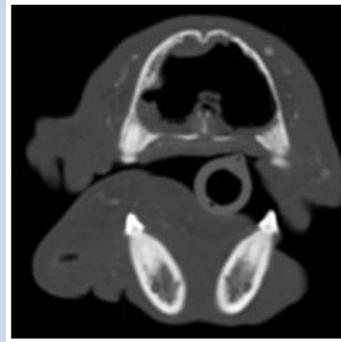
– Dr. Abbie Whitehead

# VMTH Clinician Offers Multiple New Options in the Diagnosis and Treatment of Cancer

**D**r. Michele Steffey is making great strides in the fight against cancer with multiple innovative procedures. Her cutting-edge approaches may revolutionize the treatment of cancer in veterinary patients. Many of these procedures are in the clinical trial phase, and are seeing success as potential new standard protocols.



This CT slice of a dog's nose shows the nasal cavity to be full of tumor (gray area inside the white outline). After a cryoablation treatment, the tumor has been almost completely eliminated.



veterinary medicine for imaging the gastrointestinal (GI) tract because it remains collapsed when empty, making it difficult to accurately assess the extent of GI disease. In this protocol, the colon is inflated with gas to improve the anatomic understanding of relationships between normal and abnormal structures. An optimal protocol has been

## Near-infrared fluorescence operative imaging

This exciting new form of surgical imaging uses an injectable tracer pharmaceutical that is detected by a special imaging system at very low doses, with a very high sensitivity, to highlight specific structures in the surgical field that otherwise may be unseen with the naked eye. In the context of cancer surgery, this provides the potential for improvement in the identification of tumors, identification of lymph nodes that should be examined for metastatic disease, and delineation of surgical margins. These improvements increase operative accuracy and decrease surgical time. Unlike many other types of imaging, there is no radiation dose to the patient with near-infrared fluorescent imaging, and this modality can be used in minimally-invasive surgery, as well as traditional open procedures. This exciting technique has also been extremely useful in identifying branches of the thoracic lymphatic duct at surgery, and is being applied to the treatment of chylothorax in dogs and cats with great success.

## Percutaneous cryoablation

This method of killing cancerous cells by freezing is achieved through the use of specialized hollow cryoprobes to freeze tumors located deep in the body in a minimally-invasive manner. Excitingly successful preliminary results are being achieved in a study evaluating treatment of intranasal tumors (within the nasal cavity) in this manner. With harder to reach tumors, such as bone tumors, larger surgical incisions may be necessary, but successful applications have the potential to spare some animals from amputation (which is currently the standard recommendation for this disease). Cryoablation is currently used in human health care for treatment of kidney, prostate, bone, lung and liver tumors.

## CT pneumocolonography

This imaging protocol has been developed for CT of colonic and rectal disease. Historically, CT has not been used in

determined, and all patients with large bowel disease, whether cancer is suspected or not, are candidates for this new imaging technique. Preliminarily, we are finding that this technique improves surgical planning in dogs with cancer of the colon or rectum. Its potential role in differentiating benign from malignant disease is under active investigation.

## Interventional Oncology: Chemoembolization and Palliative Stenting

These palliative treatments of non-resectable tumors use specialized stents, catheters and the targeted delivery of chemotherapy directly to the tumor in order to improve quality of life. In chemoembolization, a mixture of chemotherapy and agents to block the tumor's blood supply are delivered directly to the tumor with lower risk of systemic complications. Stents are used to address obstructions in the respiratory, GI, or urinary tracts. These minimally-invasive treatments are performed under general anesthesia and use fluoroscopy and either very small skin incisions or natural orifices; therefore, pain associated with the procedures is minimal, and recovery is quick.

Dr. Steffey is faculty member in the VMTH's Soft Tissue Surgery Service. She is board certified in veterinary surgery, and is one of only 35 veterinarians worldwide who are Founding Fellows in Surgical Oncology in the American College of Veterinary Surgeons.

## Featured Clinical Trial

Dr. Rob Rebhun is recruiting for two new clinical trials to prospectively evaluate a novel synthetic antibody or combination of drugs as potential treatments for B and T-cell lymphoma in dogs. Dogs that have a confirmed diagnosis of B or T-cell lymphoma are encouraged to enroll. For more information on this and other trials, visit [www.vetmed.ucdavis.edu/clinicaltrials](http://www.vetmed.ucdavis.edu/clinicaltrials) or email [vetclintrials@ucdavis.edu](mailto:vetclintrials@ucdavis.edu).

# Neurology/Neurosurgery Service Offers New Studies and Clinical Trials

Some of the most difficult cases in all of veterinary medicine are in the fields of neurology and neurosurgery. As neurological disorders can affect the entire body, veterinary neurologists and neurosurgeons not only find themselves working with various parts of the animal (brain, spine, muscles, nerves), but also with various other veterinary specialty services. Thankfully for patients of the VMTH, a team approach is applied so that animals benefit from the expertise of many.

With one of the leading neurology and neurosurgery services of any veterinary hospital, the VMTH has five board-certified faculty neurologists, four resident veterinarians training to be neurology specialists, three highly-trained technicians and a designated referral coordinator. The service has recently increased its appointment availabilities, and the hospital has upgraded its MRI equipment and hours, now offering 24/7 MRI service with around-the-clock on-call specialists.

The Neurology/Neurosurgery Service provides diagnostic testing, medical care, and surgery for dogs and cats, as well as a consultation service for horses, livestock, exotic species and laboratory animals. The service also provides 24-hour emergency care for animals with immediate neurological or neurosurgical needs.

Beyond standard treatment protocols, the VMTH Neurology/Neurosurgery Service also offers treatment through newly-discovered approaches and clinical trials. If an animal is eligible to participate, these novel treatments could not only benefit the animal, but also the health care of other animals and potentially people in the future. Two current highlights of the



The VMTH's Neurology/Neurosurgery Service.

service include a study on Dachshunds that will launch patient applications in January, and a brain tumor clinical trial that has provided funded treatment for enrolled dogs. Information on these programs can be found on the UC Davis Veterinary Center for Clinical Trials' website: [www.vetmed.ucdavis.edu/clinicaltrials](http://www.vetmed.ucdavis.edu/clinicaltrials).

As veterinary medicine is an ever-evolving science, UC Davis hopes the therapeutic approaches used in these studies and clinical trials may someday become standard practice for both dogs and humans, allowing for the successful treatment of a range of neurological disorders.

## CE Calendar

### Veterinary Continuing Education

(530) 752-3905, Fax: (530) 752-6728  
[center4cpe@ucdavis.edu](mailto:center4cpe@ucdavis.edu)

### Upcoming Veterinary Continuing Education Events:

- February 1 – Charles Heumphreus Memorial Lecture, UC Davis
- February 1-2 – UC Davis Winter Veterinary Conference, UC Davis
- March 1 – Canine Reproduction 101, UC Davis
- March 8 – Equine Medicine Club Symposium, UC Davis
- March 29-30 – Wildlife and Aquatic Medicine Club Symposium, UC Davis
- April 26-27 – Avian and Exotic Medicine Club Symposium, UC Davis

For more information on these and other upcoming CE events, please visit [www.vetmed.ucdavis.edu/ce](http://www.vetmed.ucdavis.edu/ce).

## Connect with us

### For Appointments Call:

Small Animal Clinic: (530) 752-1393  
Large Animal Clinic: (530) 752-0290



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