As the recognized importance of equine protozoal myeloencephalitis (EPM) grows throughout the country, the VMTH has developed exclusive testing to more accurately diagnose the disease. UC Davis veterinarians were not satisfied with the standard testing available, and spent the past decade developing and successfully validating an improved diagnostic tool for EPM.

The SarcoFluor™ and NeoFluor™ tests created by UC Davis are immunofluorescent antibody tests for both of the known causative agents of EPM (*Sarcocystis neurona* and *Neospora hughesi*). These tests provide a quantitative indication of EPM infection and provide greater sensitivity and specificity than the Western immunoblot test on serum samples. UC Davis’ tests also reduce the necessity to obtain cerebrospinal fluid in order to screen for antibodies against the two protozoal agents.

A recent UC Davis study showed why it is necessary to run both of these tests to accurately diagnose the cause of EPM in an individual horse. Dr. Nicola Pusterla led a team of researchers who discovered that EPM caused by both parasites is widespread throughout the United States. After obtaining a total of 3,123 diagnostic submissions from 49 states, the faculty determined that horses from 42 states were affected by parasites causing EPM. Horses in 24 states tested positive for antibodies against *Neospora hughesi* and *Sarcocystis neurona*. Horses from 17 states tested positive for antibodies against *Sarcocystis neurona* only, while horses in one state tested positive for antibodies against *Neospora hughesi* only. As these results show a widespread distribution of the parasites causing EPM, horse owners and practitioners should test EPM-suspect horses for antibodies against both parasites.

The SarcoFluor™ and NeoFluor™ tests are available through the laboratory services at the VMTH. To learn how to utilize these tests and submit samples, contact VMTH laboratories services at 530-752-VMTH or log onto www.vetmed.ucdavis.edu/vmth/lab_services.cfm.
VMTH Offers Multiple Board-Certified Anesthesiologists

One of the unsung heroes of the VMTH is its Anesthesia Service. Consisting of nine anesthesiologists (eight of whom are board certified), this service is often behind the scenes, but certainly plays an important role in almost every case. The VMTH is the only veterinary hospital in Northern California with multiple board-certified anesthesiologists. This uniqueness allows the VMTH to offer a higher level of specialized care to its patients during surgery. The service also consists of four resident veterinarians training under the faculty's tutelage to become anesthesia specialists, as well as 18 specially-trained technicians. This team makes up possibly the largest anesthesia service of any veterinary hospital in the country, which means each patient has a designated, one-on-one anesthesia team member to watch over it throughout its surgeries and procedures, equating to safer procedures and better outcomes for both small and large animals.

Certified by the American College of Veterinary Anesthesia and Analgesia, VMTH anesthesiologists maintain the highest standard of care in pain management, anesthesia and post-operative recovery. Never is this more important than in the Large Animal Clinic during and after an equine surgery. Catastrophic injury during recovery can be much higher in equine surgeries compared to small animal surgeries. Most times, those rates have nothing to do with the initial injury or surgery, but rather with the potentially dangerous environment of recovery.

Horses will tend to find the recovery environment abnormal and try to get up too early, thereby predisposing themselves to potentially fatal injuries. VMTH anesthesiologists have developed options for more gradual, controlled recoveries under an ever-present eye. This can make all the difference for a 1,200-pound animal not prone to being on the ground following surgery.

Whether it’s a small or large animal being anesthetized at the VMTH, each patient is offered high quality, individualized care.

Dr. Joshua Stern Joins Cardiology Service

The VMTH’s Cardiology Service has brought on board veterinary cardiologist, Dr. Joshua Stern, DVM, PhD, DACVIM, as an assistant professor. Originally from Bristolville, Ohio, Dr. Stern obtained his BS (2003) and DVM (2008) degrees from The Ohio State University. He stayed on at Ohio State to complete a small animal internship in 2009. Dr. Stern then began a residency in cardiology at Washington State University and completed it at North Carolina State University in 2012. Dr. Stern also recently completed a PhD at Washington State focusing on the genetics of familial subvalvular aortic stenosis in dogs.

Dr. Stern’s research is primarily focused on the study of inherited heart disease. Most recently, his research successfully identified a mutation responsible for the development of congenital heart disease (subaortic stenosis) in Newfoundland dogs and the discovery of a mutation responsible for sudden death and long QT syndrome in a family of English springer spaniels. His subaortic stenosis research continues in golden retrievers and Rottweilers. Additionally, Dr. Stern has participated in studies of inherited cardiomyopathies and helped develop many of the currently available tests for genetic heart disease. Dr. Stern’s secondary interest is in pharmacogenomics (how genetics aids in medical therapy) and the interface between pharmacogenomics and treatment of heart failure.

“We are excited by the addition of Dr. Stern to our faculty,” states Dr. David Wilson, director of the VMTH. “His achievements to date are impressive for an individual in the early stages of his academic career. We feel fortunate that he is now part of our team and look forward to his continued success at UC Davis.”

Dr. Stern’s award-winning research has garnered him several veterinary scholarships, including the Morris Animal Foundation Clinician Scientist Fellowship, the Jessie Scholarship for Veterinary Cardiology and Neurology and the Dr. Lynn A. George Endowed Memorial Scholarship for Research. He has studied cardiovascular issues in the previously mentioned dog breeds, as well as cats, racehorses and Alaskan sled dogs. Dr. Stern has authored or co-authored more than 40 publications and abstracts. At UC Davis, Dr. Stern will work with large and small animals.
The diverse caseload of the VMTH holds many benefits for all involved. Never has this been more true than for the Large Animal Clinic’s Ultrasound Service, specifically with pelvic ultrasound examinations on horses.

Having conducted more than 325 pelvic ultrasound examinations since 1999, the VMTH’s experience in this area may not be rivaled by any other veterinary hospital. Practitioners from around the world are taking note as Drs. Mary Beth Whitcomb and Betsy Vaughan share some of that experience.

As a leader in equine pelvic ultrasound, Dr. Whitcomb has developed several 3D instructional models (some shared on their Facebook page - www.facebook.com/UCDLargeAnimalUltrasound) on how to conduct pelvic ultrasound examinations. These models are used extensively to teach students and veterinarians about the role of ultrasound to diagnose pelvic fractures. Drs. Whitcomb and Vaughan routinely present their ultrasound experience at continuing education seminars nationwide, such as the annual American Association of Equine Practitioners conference.

Using the most advanced ultrasound machines—selected for their excellence in musculoskeletal imaging—Drs. Whitcomb and Vaughan use both transcutaneous and transrectal techniques to evaluate nearly all bony surfaces of the pelvis for evidence of a displaced fracture. This experience has transformed the approach to horses with suspect pelvic fractures at the Large Animal Clinic. Ten years ago, nuclear scintigraphy was the primary means of diagnosis at the VMTH. While bone scans are still required to diagnose nondisplaced fractures, ultrasound has gradually taken over due to its relative low cost and reliability to detect displaced fractures.

Fractures are often the result of a fall and usually cause the horse to be severely lame (visible at the walk). While fractures can be found throughout the pelvis, the most common fractures diagnosed at the VMTH are chip fractures of the acetabular rim followed by tuber coxae and tuber ischii fractures. Ultrasound has even been used to diagnose fractures of sacrum and femur.

“For me, the best benefit of pelvic ultrasound is that it often provides a definitive answer,” states Dr. Whitcomb. “If we’ve found a pelvic fracture, we’ve found the answer. Being able to give a positive diagnosis to a stressed client is very satisfying from our standpoint and the client’s and referring veterinarian’s standpoint.”

New VMTH Equipment Greatly Reduces Diagnostic Time

The VMTH recently acquired a highly-advanced piece of diagnostic equipment that will reduce the time for identification of bacterial and fungal organisms after they have been grown in culture from 2-4 days down to less than one hour. The matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF) mass spectrometer is being embraced throughout the healthcare community as the most advanced diagnostic tool for rapid identification of organisms.

MALDI-TOF works by generating a protein mass profile of an unknown organism that serves as a “fingerprint” for that particular organism. After a “fingerprint” is generated by the MALDI-TOF, it is compared to a database containing libraries of thousands of profiles. It then quickly identifies the unknown organism based on its closest match in the library. New libraries can be added to the current database and shared with other veterinary diagnostic laboratories and researchers. Increased library coverage will increase the range of organisms that can be identified accurately and quickly.

MALDI-TOF has proven to be a fast and cost-effective method in comparison to conventional microbiological diagnostics. Currently, only four other veterinary schools (Iowa State, Kansas State, Texas A&M and Cornell) employ the MALDI-TOF mass spectrometry technology in their diagnostic laboratories.
Dear Colleagues,

Welcome to the fall issue of VMTH Heartbeat, our quarterly newsletter geared specifically to inform our referring veterinarians of developments at the VMTH. We strive to provide you with information that is of most relevance to you, so please continue to send us your feedback.

Because we rely on your referrals for a large portion of our caseload for training veterinary students and residents, you deserve much of the credit for helping us make this past year our most successful yet. For the first time, we eclipsed 45,000 patient visits for the year. Our service numbers are up across the board. Our overall caseload has increased by an astounding 22 percent during the past five years, despite the serious challenges we’ve all faced due to the recession. None of this would have been possible without you entrusting your patients to our care. Thank you for your support.

I encourage you to check our continuing education calendar for upcoming events. Details regarding the many events planned for 2014 can be found on the CE website. This year, we have added a new online registration portal on that site to make it easier for you to enroll in these seminars. Also, remember that there are webinar options available for many of the courses if you cannot attend in person.

Regards,

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

---

**Featured Clinical Trial**

Dr. Bill Culp is recruiting for a new clinical trial to prospectively evaluate the response of nasal cancer to a combination of therapies (chemotherapy and radiation therapy) in dogs. Dogs that have been diagnosed with nasal tumors and are scheduled to receive radiation therapy 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.

---

**CE Calendar**

**Veterinary Continuing Education**

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

**Upcoming Veterinary Continuing Education Events:**

- October 13, 2013 – 5th Annual UC Davis Veterinary Practitioners Seminar, UC Davis
- October 20, 2013 – UC Davis Veterinary Diagnostic Imaging Symposium, San Diego
- November 1-3, 2013 – Inaugural Donkey Welfare Symposium, UC Davis
- November 3, 2013 – VMTH/ San Francisco SPCA Year in Review Seminar, San Francisco

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

- **Like us on Facebook**
  https://www.facebook.com/ucdavisvetmed
- **Watch us on YouTube**
  http://www.youtube.com/ucdvetmed
- **Follow us on Twitter**
  http://twitter.com/ucdavisvetmed


To subscribe to VMTH Heartbeat, email rjwarren@ucdavis.edu.