

MU
VMDL
 Newsletter

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A MESSAGE FROM VMDL DIRECTOR SHUPING ZHANG

Welcome to the MU VMDL Fall 2018 Newsletter! I hope everyone has had a wonderful summer.

First, I would like to introduce Lauren Delaney, DVM, the VMDL's outreach and customer service veterinarian. This position was recently created to improve the VMDL's customer service and connect gaps between clients and laboratory sections.

In October 2018, a good number of VMDL faculty, staff, residents, and graduate students attended the 61st American Association of Veterinary Laboratory Diagnosticians Annual Meeting. Our folks presided during committee meetings, moderated scientific sessions, and presented four posters and two oral addresses. I was installed as the vice president of the organization.

These activities reflect the VMDL's recent progress in diagnostic service and development as well as the long-standing commitment of the MU CVM to animal health,

animal agricultural industry, and one health.

As some of you know, the VMDL has a new website and a client portal. From the portal, you can see test results as soon they are entered into the computer and find out the costs of lab work. Please feel free to provide us with your comments and suggestions. We will continue to improve the website's functionality and user-friendliness.

The gun season for deer hunting is upon us. The VMDL is collaborating with the Missouri Department of Conservation on chronic wasting disease testing. The VMDL staff are certified to test wild and captive cervids by ELISA (screening) and IHC (confirmation).

Last, but not least, we are developing new real-time PCR assays for the detection of EHV-1 and EHV-4, as well as differentiation of the neurological form of EHV-1. These assays will be offered beginning in December.



As always, your feedback is important to us because the VMDL is here to serve all of you and the state of Missouri.

I hope each of you had the opportunity to enjoy the spectacular fall leaves before this year's early snow arrived.

*Best regards,
 Shuping Zhang, Director,
 Veterinary Medical Diagnostic
 Laboratory
 Professor, Veterinary Pathobiology*

Personnel Update

Lauren Delaney, DVM, joined the VMDL as a client service veterinarian in September. She graduated from the University of Missouri College of Veterinary Medicine in 2012, and she has clinical experience with a wide variety of species including rodents, companion animals, small ruminants, pigs and non-human primates.

Delaney's valuable clinical experience will be an asset to both the VMDL diagnosticians and its customers. In addition to all of her behind-the-scenes duties, Delaney is available to assist you with questions about test offerings, sample submissions, and diagnostic reports. She understands what veterinarians need from their testing laboratory and is here to serve you in the coming years!



Feel free to contact her by phone or e-mail anytime or introduce yourself in person at the various meetings and trade shows that the VMDL attends throughout the calendar year.

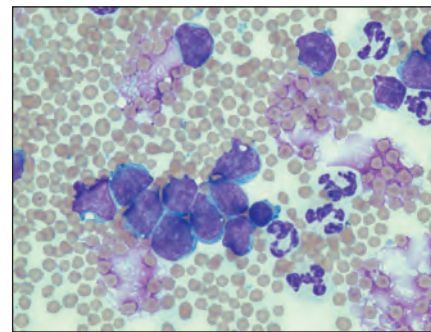
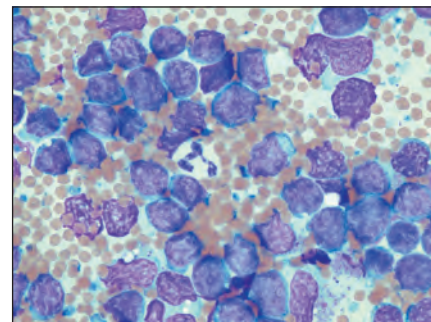
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Animal Health Update

According to the Minnesota Board of Animal Health, a case of H5N2 low pathogenic avian influenza has been confirmed in a commercial turkey flock in southern Minnesota. This is not the same virus responsible for the 2015 outbreak in the Midwest, and does not pose a risk to public health or food safety. The disease was detected during routine surveillance testing of the flock in mid-October.

The MU VMDL offers a NAHLN-approved qRT-PCR test for Avian Influenza Virus. Any positive samples will be confirmed and typed to differentiate between H5 and H7 strains. Appropriate sample types include cloacal or choanal swabs in brain heart infusion medium (BHI), BD viral transport medium, or normal saline. Please use synthetic or semi-synthetic swabs with plastic handles, as inappropriate swab types (wooden handle or cotton tip) will inactivate the virus. Ship all samples for PCR testing on ice via expedited courier. Samples are stable for 96 hours post-collection when handled and stored properly.

Feel free to contact our Molecular Diagnostics Laboratory or Avian Section Head (Dan Shaw, DVM, PhD) with questions or concerns. We welcome the opportunity to help you safeguard the health of your flock!



What's Your Diagnosis?

Test your knowledge with the following case. (The answer follows on page 3).

A 2-year-old female goat presented with lethargy and weight loss of two to three weeks duration, despite a normal appetite. Abdominal ultrasound revealed a large central abdominal mass, presumably associated with the intestine. Fine needle aspiration of the mass yielded the above high magnification images.

Come visit our booth at the 2019 MVMA Convention: January 24-27 at the Holiday Inn Executive Center in Columbia, Missouri!

Toxicology Section Offering New Panels

The Toxicology Section is thrilled to offer a trace and toxic element panel by ICP-OES (inductively coupled plasma optical emission spectroscopy). This panel screens for 10 different metals in a single sample of liver or kidney tissue. Elements included in the analysis are as follows:

- **Arsenic,**
- **Cadmium,**
- **Cobalt,**
- **Copper,**
- **Iron,**
- **Lead,**
- **Manganese,**
- **Molybdenum,**
- **Thallium,**
- **Zinc,**
- **Selenium** (coming soon).

Take advantage of this comprehensive panel by sending us a sample via expedited courier. We prefer 50+ grams of fresh or frozen tissue, but we can run the test with as little as 1 gram. The cost per sample is \$45. We expect to have this method validated for serum samples soon. Contact the Toxicology Section about this new service. We welcome your questions and suggestions.

Newsletter Has New URL

To read current or archived versions of our newsletter, please visit our new URL: <http://vmdl.missouri.edu/vmdl-newsletter/>

Visitors who previously placed a bookmark on the site to read our archived newsletters will find the old URL to be invalid. Bookmark this new site to stay current on the latest VMDL developments.

Highlights from the 61st Annual AAVLD Meeting

Our very own director, Shuping Zhang, PhD, was installed as the vice president of the American Association of Veterinary Laboratory Diagnosticians! We are so proud to have our laboratory represented at the top level of the organization. Congratulations, Dr. Zhang!

Solomon Odemuyiwa, DVM, MSC, PhD, DACVM (Molecular Diagnostics), moderated the Scientific Session in Virology. Topics included the existence of genetically diverse isolates of BVD and CDV as well as the use of next generation sequencing methods, which are available here at the MU VMDL, to track the movement of SIV from farm to farm.

Gayle Johnson, DVM, PhD, DACVP (Pathology), chaired the Anatomic Pathology Awards Committee.

Kei Kuroki, DVM PhD, DACVP (Pathology), presented a poster entitled "A Canine Case of Intestinal Echinococcosis in Missouri, USA."

Former MU Residents Recognized at Meeting

At the annual American College of Veterinary Pathologists (ACVP) meeting, Courtney Moser, DVM, MS, DACVP, was honored with a Charles Louis Davis Student Scholarship Award for her scholastic achievement during clinical pathology residency training at MU.

Jessica Fortin, B.Pharm, DVM, PhD, DACVP, received the 2018 Harold W. Casey Memorial Scholarship Award from ACVP. The Harold W. Casey

Scholarship Award annually recognizes and rewards an outstanding individual training in pathology and striving to achieve ACVP certification.

Bacteriology Section Has New Swabs Available

The bacteriology lab now has flocked culture swabs in liquid Amies transport media available!

Flocked swabs have been shown to have the best cellular recovery and do not contain bacterial inhibitors like cotton swabs. The liquid media allows use of the swab for viral and molecular diagnostics as well as bacterial culture. The screw-top swabs come individually-packed with a scored shaft for easy breakage into the culture media. The cost is \$1 per swab, and we will send you swabs with at least a six-month shelf life. If you would like us to send swabs to your clinic, please call.

Solution to What's Your Diagnosis?

Large cell lymphoma

The majority of lymphocytes are large, as they are the size of or bigger than neutrophils. Additionally, they have finely stippled chromatin and indistinct nucleoli. It is less helpful to judge the size of these lymphocytes based on the RBCs in the images because goats have tiny erythrocytes.

Based on necropsy (numerous, pedunculated, firm, tan to white, nodular masses) and immunohistochemistry (CD20 positive), the final diagnosis in this case was multi-centric B-cell lymphoma.

MU VMDL Newsletter

Careful Sampling Can Help Determine Cause of Bovine Respiratory Disease

Fall and winter are when we see our largest number of cases of bovine respiratory disease. BRD can be bacterial, viral, or both, and appropriate sampling can help you determine the causative organism(s). For those considering sending in samples for BRD diagnosis, here are some guidelines:



Samples collected as cleanly as possible and as soon after death as possible are best.

- The best samples for diagnosis come from untreated, acutely affected animals. In cattle that have been affected with BRD for weeks or months, the causative organism is often gone and secondary invaders have moved in. In these cases we often isolate *Trueperella pyogenes* (formerly *Arcanobacterium pyogenes*), which is an indication that the disease process has been going on for some time.
- From a deceased animal, a fresh (not fixed) fist-sized piece of affected lung is a great sample and is far better than a swab.
- From a live animal, a lower respiratory tract (bronchoalveolar lavage or tracheal wash) sample is best. We often receive nasal swab samples from live animals, but remember that many BRD organisms are commensals when found in the nasopharyngeal region. Finding an organism in the nasal cavity does not mean the same organism is in the lower respiratory tract.
- If *Mycoplasma* is on your differential list, request a *Mycoplasma*

PCR. *Mycoplasma* organisms are small, slow-growing and often obscured in bacterial culture by faster-growing organisms. PCR is more sensitive for detection of these fastidious organisms.

- If you would like any PCR testing (for *Mycoplasma* or viruses), please submit either fresh tissue or a swab in liquid transport media. It is difficult to extract nucleic acids from gel culture media. We can send you appropriate swabs- just give us a call.
- Whatever type of sample you submit, please send it with cold packs and via overnight shipping. Even if the weather is chilly, shipping warehouses are often heated and can cause sample deterioration during transit.

If you have any questions, please call us, We would love to help you determine the best diagnostic tests for your differential diagnosis list.

VMDL Portal Access

This free service for clients enables 24-hour daily access to test results and improves transparency of the status of the sample and cost of testing.

<https://vetview.cvm.missouri.edu>

