

NOVEMBER 2015

Message from the Director

Dear Clients, Colleagues and Supporters:

This is a momentous year for the University of Missouri Veterinary Medical Diagnostic Laboratory (VMDL)! As many of you have already learned, the VMDL has earned full accreditation from the American Association of Veterinary Laboratory Diagnosticians (AAVLD).

The AAVLD is a world leader in advancing the discipline of veterinary diagnostic laboratory science. The purpose of AAVLD accreditation is to accredit public veterinary diagnostic laboratories in North America relative to technical and operational competence and to provide an administrative assessment. The accreditation requirements are based on the internationally recognized ISO/IEC 17025 standards, and are consistent with the World Organization for Animal Health (Office International des Epizooties) Quality Standard and Guidelines for Veterinary Laboratories.



Shuping Zhang

What does this really mean to our clients, students and trainees?

AAVLD accreditation assures VMDL's clients that results are accurate, faculty and staff are competent, facility and equipment are adequate and properly maintained, all procedures are documented, and results are recognized by other accredited laboratories. Accreditation also ensures the acceptance of results for live animal export to other countries.

AAVLD accreditation assures our students and trainees that the learning environment is recognized by peers in North America, the laboratory procedures taught in the VMDL are accurate and up to date, and their diagnostic professors meet and exceed international standards.

Finally, I would like to extend my sincere appreciation and thanks to all my clients, colleagues and students for their support and constructive critiques. The future of the VMDL looks bright.

Sincerely,
Shuping Zhang
Professor and VMDL Director



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Sample Handling Tips from Clinical Pathology

How FedEx Can Help You

Contact Us

Contact us for more information about our services and products.

VMDL

810 E. Campus Loop
Columbia, MO 65211

573-882-6811

Visit us on the web:
vmdl.missouri.edu



BUSINESS NEWS

Testing Updates from the Diagnostic Laboratory

Clinical Pathology Testing News

We are now offering a **multiple synovial fluid** cytology option (similar to our multiple lymph node cytology option). Up to three synovial fluid sites from a patient can be submitted for a reduced fee of \$47.50 (~1.5x a cytology fee). This new option will provide a differential cell count for one site plus written description of the other two sites. If enough fluid is collected to submit for a full synovial fluid analysis, these will still be handled on a per-site basis (no discount for multiple sites). Please remember to label slides as to which site they reflect.

Porcine CBCs:

We now have an option for a porcine CBC, which includes the standard CBC components plus reticulocyte percentage and fibrinogen measurement.

Veterinary Health Center Oncology Service Trials

The University of Missouri Veterinary Health Center (previously known as the Veterinary Medical Teaching Hospital) Oncology Service has funded clinical trials for many tumor types if presented prior to surgical excision. These trials include canine osteosarcoma, soft tissue sarcoma, oral melanoma, oral squamous cell carcinoma and mast cell tumors. A funded clinical trial is also available for the treatment of dogs with cancer cachexia.

For further information or if you have a potential candidate, please call 573-882-7821.



Our business office staff is always happy to assist you with your account needs and wants your business transactions with the VMDL to be as convenient as possible. Clockwise from top left: Kirk Thompson, Mike Wimmenauer, Raina Cornell and Karen Huggins.

Online Service Makes Paying Bills Easy and Convenient

We now have a link on the right side of our homepage that allows clients to quickly make a payment on their account. Clients who work longer hours than the laboratory's 8 a.m. to 5 p.m. schedule may especially benefit from this free 24-hour service that is available 365 days per year. No user name or password is necessary to make a payment.

<https://cvmecom.missouri.edu/VMDL/Client/>

Do You Have Requests or Suggestions?

We value your input on how we could better serve our clients! Do you wish we offered a particular type of testing? Do you have suggestions on how we could improve service for you? Would you like more information on how we perform a particular test? Or perhaps you may even have a note of praise about something we are doing well. We would love to hear your thoughts. You can reach us at 573-882-6811.

BUSINESS NEWS

Updates from Bacteriology

State-of-the-Art Technology

The Bacteriology Laboratory has seen an increase of submissions due to the change of season. Respiratory screens and enteric screens are presented often with bacterial pathogens present. As always, we strive to efficiently meet your needs in the identification of bacterial pathogens in fluid samples, tissue samples and other specimens.

We have recently instituted an exciting new technology to aid in our efforts. Utilizing a Bruker MALDI-TOF analyzer (a biotyper with mass spectrometer and computerized database libraries), we can provide more rapid and sometimes more exact bacterial identification. This allows us to provide speedy preliminary reports of bacterial IDs prior to susceptibility results. It also means that you may see some unfamiliar species/subspecies names following the more familiar genus names for these organisms. There are occasionally bacterial isolates that need other ways of identification, and we are prepared for them too.



*Bill Fales, Bacteriology
Section head*



*Irene Ganjam, Bacteri-
ology Lab supervisor*

We hope that our more rapid preliminary reports will help you in diagnosing and managing patients and herds more quickly. If you have any questions about results or feedback on our service, we encourage you to contact us.

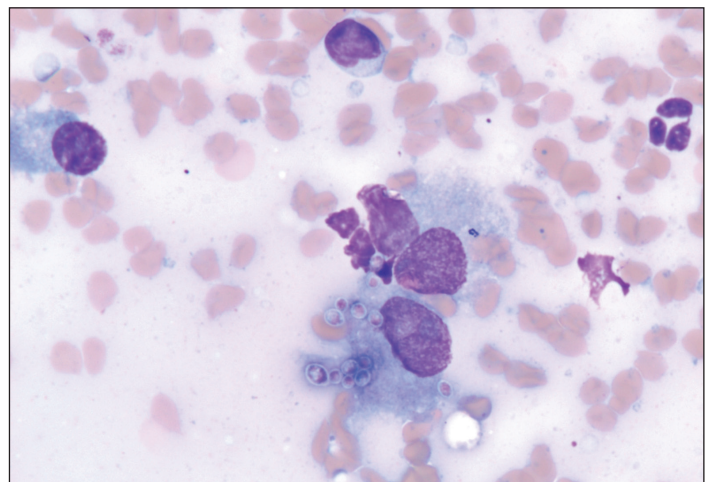
CASE CHALLENGE

What's Your Diagnosis?

A 7-year-old neutered male domestic shorthair cat presented to the University of Missouri Veterinary Health Center with a history of weight loss, coughing/wheezing, and bilateral ocular discharge, chemosis, blepharitis and anterior uveitis. A few dermal lesions were present near the right upper eyelid margin. Fine needle aspiration samples were collected from these lesions and submitted to the VMDL clinical pathology laboratory for evaluation.

Do You Know the Answer?

Email the correct answer to Dr. Angela Royal at royalab@missouri.edu by Jan. 1 for a chance to win a prize! One entry per person, please. The winner will be randomly selected from all correct responses received prior to the deadline. The correct diagnosis and the contest winner will be posted in the February 2016 VMDL newsletter.



This image is a representative high magnification (100x objective) view of what we found. What is your diagnosis?



OUT AND ABOUT

What Have the VMDL Folks Been Up To Lately?

Awards, Meetings and Presentations

Seven members of the VMDL team attended the 58th American Association of Veterinary Laboratory Diagnosticians (AAVLD)/119th U.S. Animal Health Association Annual Meeting, which was held in Providence, Rhode Island, Oct. 22-28. The meeting affords the opportunity to hear from industry leaders in veterinary laboratory medicine and regulatory agencies, participate in discipline-specific symposiums, scientific presentations, and committees, view scientific posters, and network with colleagues from other veterinary diagnostic laboratories.

The plenary session at this year's meeting focused on the 2015 avian influenza outbreak. VMDL team members in attendance were Drs. Shuping Zhang, Mike Zhang, Gayle Johnson, William Fales, Tim Evans, Tom Reilly, and Ms. Susan Martin. They represented VMDL in a variety of sessions, including National Animal Health Laboratory Network Exercises and Drills Working Group Sponsored Preparedness Workshop, AAVLD Bacteriology/American College of Veterinary Microbiologists CVM Mini-Symposium: Emerging Technologies in the Veterinary Diagnostic Microbiology Laboratory, Laboratory Emergency Management Committee, AAVLD Quality Assurance Committee, AAVLD Editorial Board of Journal of Veterinary Diagnostic Investigation, Vet-Laboratory Investigation and Response Network meeting and AAVLD Laboratory Safety Committee.

On Saturday evening, Dr. William H. Fales, head of the VMDL Bacteriology Section, presented "Trends of Bacterial Antimicrobial Resistance Associated with Cattle Affected with Bovine Respiratory Disease Complex (BRDC) in the State of Missouri, USA." During the sci-

entific sessions on Sunday, Ms. Susan Martin, VMDL quality assurance manager, presented an oral abstract of work completed with colleagues Drs. Tom Reilly, Tim Evans and Shuping Zhang entitled "Raising the Bar – Evaluating the Quality of Root Cause Analysis." The presentation of a quality assurance topic during the scientific sessions represented a first in the history of AAVLD.

Tim Evans, DVM, MS, PhD, DABVT, DACT (Toxicology), was recently honored with the prestigious Governor's Award for Excellence in Teaching! This is an annual award presented to one faculty member across the entire MU campus. This achievement is a reflection of Dr. Evans' tireless efforts in educating and mentoring our students. Congratulations, Dr. Evans! We appreciate your efforts.



Tim Evans

Our annual VMDL Service Excellence Awards were presented at a celebration on Oct. 2. The recipients for the year are Susan Martin (Quality Assurance), Cheryl Rojas (Clinical Pathology), Raina Cornell (Business Office), Emily Tullock (Histology) and Jeff Peters (Virology). Thank you all for your dedication and service. VMDL employees like you are what makes us a success!



SAMPLE HANDLING TIPS

Clinical Pathology Advice for Optimal Results

All blood submitted for CBC and fluids submitted for cytology or fluid require freshly prepared direct smears for optimal results. During transport to our lab, many in vitro artifactual changes can occur, particularly if the transit time is more than 24 hours or the temperature during transit is extreme.

- Cellular aging and deterioration
- Bacterial proliferation
- Erythrophagia and leukophagia
- Hemolysis and lysis of nucleated cells

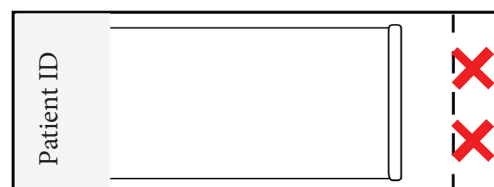
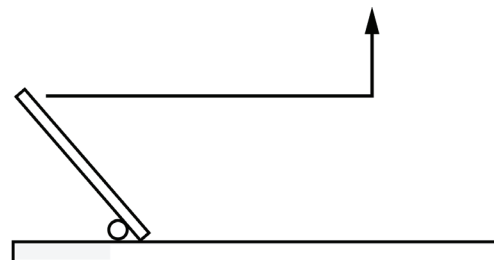
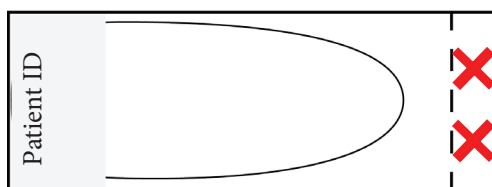
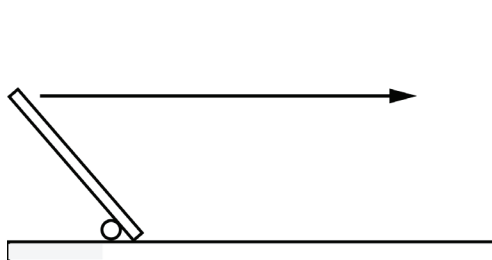
These changes can result in less accurate RBC, WBC and platelet concentrations, less accurate differential cell counts, and overall inability to accurately assess cellular morphology. In extreme cases, the sample becomes non-diagnostic.

Preparing one or more slides of these fluid samples at the time of collection provides a stable snapshot of cellular morphology and concentration as it was in vivo. The fluid itself should be included with the shipment. Cool temperature is recommended during transit (i.e., fluids should be sent on ice). Freezing fluid samples prior to CBC or cytologic exam results in non-diagnostic specimens, whereas warm temperatures during transit speeds up the rate of cellular deterioration and potential bacterial proliferation.

Key Points

- Send fluid samples on ice overnight
- Include at least one freshly prepared slide with fluid samples submitted for:
 - CBC
 - Fluid analysis
 - Fluid cytology
 - Blood smear exam

Slide preparation for blood smears is the same technique recommended for “thick” fluid samples, while “watery” fluid samples may require utilization of the line smear technique. On the left of the depiction below, you can see the basics of blood smear (wedge smear) technique. In this case, the spreading slide is backed into a drop of blood or other fluid, and a steady motion is used to pull the fluid across the slide. The fluid should end in the middle region of the slide or slightly beyond, and a feathered edge should be apparent. For a line smear, the same initial motions are used, but at a point slightly past the middle of the slide the spreading slide is abruptly lifted up — leaving a “line” of somewhat concentrated fluid. Note that the very edge of the slide (about 0.5 cm) should NOT be utilized! These areas are beyond the reach of our automated stainer and thus are generally not evaluated.





SHIPPING THROUGH FEDEX

The Special Saver Program May Benefit Your Business

Clients who have used the VMDL FedEx service have provided overwhelmingly positive feedback regarding the reduced shipping costs and potential improvements in the quality of the sample.

Improved Quality and Turnaround

Safer delivery and quicker results of the sample benefit the lab, our client and their respective customers. Recent budget cuts at the post office have had some post office users' shipments rerouted to new, out-of-the-way regional sorting facilities. In contrast, clients who have switched their shipping to our FedEx service feel our turnaround time has improved through reduced transit time.

Virtually all Missouri-based clients can have a package delivered to the VMDL the next day when they provide FedEx with the sample before their zip codes designated cut-off time. We are often sorting and working on that sample you sent the very next morning.

Reduced Shipping Costs

Special bulk contract rates have allowed the VMDL to negotiate discounts of 50 to 60 percent off the typical consumer price. These savings are then passed on directly to our clients. FedEx has also been hired to be our courier to pick up lab samples directly from clinics. Our low

shipping costs combined with our affordable service costs typically provide a total cost significantly below the costs clients may be paying large, for-profit laboratories that provide a pick-up service. Consider giving our services a try to both improve the profit margin of your business and to pass on cost savings to your pet owners.

How Does the Saver Program Work?

- Call the VMDL at 573-882-6811 to ask for pre-printed VMDL FedEx billable stamps with your business/clinic name filled out.
- There are three ways to get this FedEx sample to us. FedEx will pick up the sample directly from your clinic, you can drop the sample at any FedEx drop box location or you can elect to personally take your FedEx sample to a FedEx facility.
- If you desire to have packages picked up through our FedEx courier service, call for an instructional sheet on how to get started. Our instructions walk you through the phone call to FedEx to ensure you are getting the VMDL-negotiated discount.
- Follow the phone instructions on how to schedule with FedEx.
- Place a VMDL-provided FedEx label on the box.
- Place the box on your counter and wait for FedEx to show up.

It is that easy!