

# LAB NEWS



**Notice:** There is an error in the Fee Schedule updated on June 20, 2015. The correct charge for a Urinalysis and Cytopathology Review is \$40.00.

Arkansas Livestock and Poultry Commission Veterinary Diagnostic Lab Newsletter

Spring 2016

## Lab Director:

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DACVP

## Deputy Director:

Russ Summers, PhD

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### Receiving

Cheryl Fossler, Interim

**ATTENTION!** In order to deliver the most current information to our clients in the most efficient way, the ALPC-VDL Newsletter will **no longer be available in print.**

**ACT NOW!** We want to stay in touch! Email [alpclabnews@alpc.ar.gov](mailto:alpclabnews@alpc.ar.gov) to sign up and receive digital copies of the APLC-VDL Newsletter or visit [www.alpc.arkansas.gov/lab](http://www.alpc.arkansas.gov/lab) to view in your browser. **Sign up today** to receive the most up to date lab news, testing information, and emerging disease updates! If you currently have an account with the lab and have an email address on file with us, then you will be automatically added, and there is no need to sign up.

## MESSAGE FROM THE DIRECTOR

### **We Don't Do That Here**

If you have ever requested a test from us only to be told "We don't do that here", you must have wondered why. It turns out that several factors can come into play in deciding what tests to offer. An obvious factor is client demand. Test procedures require not only equipment and personnel, but also methodology and consumables. If a procedure is ordered rarely, then kits and reagents can reach their expiration date after running only one case. In some cases, the cost we pay for a kit can exceed the cost we charge for the test itself. Plus, it may not be the best use of personnel to develop test methodology and train on it if it is not going to be widely used. Another factor is the type of specimen that you want tested. If our test method has been validated on serum, and you want us to test urine, then the accuracy of the test results may be affected. In some cases, we can take measures to work around this, but concerns over quality require prior consultation to make sure that your expectations can be met.

One way to figure out the specimen requirements is to consult the Lab Guide and Fee Booklet. It is available on-line ( [www.alpc.arkansas.gov](http://www.alpc.arkansas.gov) ), on Website, and in print. If you still have questions after looking over the Guide, then give us a call. If we don't offer it here and the test is available elsewhere, then we will send the sample to a diagnostic lab that offers the test that you require.

A note about send-outs – Sometimes the lab sends samples that are ordinarily tested in our lab to an outside lab. This may occur during equipment failures or staffing shortages, etc. If we elect to send an in-house test to another lab, your results will be earmarked with this information, and the cost of the test will never exceed what our fee book indicates.

*Linda F. Meola*, Lab Director

*Russ Summers*, Deputy Lab Director

## MEET OUR STAFF

**Amy Blubaugh** was born in Little Rock, AR and graduated from Hendrix College in 2008 with a B.A. in Biology. After graduation she worked at a local veterinary clinic as a veterinary technician before joining the Arkansas Department of Health Public Health Laboratory in 2010. Through the next five years she worked in several different sections that aided her professional development. She gained knowledge and understanding of laboratory quality, testing, microbiological practices, theories, and applications. She came to ALPC-VDL in July 2015 as a Microbiologist in the Bacteriology section and received a promotion to Microbiologist Supervisor in February 2016. She has enjoyed working with all the wonderful people at both state agencies and is excited about this new stage in her career.

In her free time, she spends time with her friends, family, and dogs, Carl and Birdie. She enjoys all the beautiful scenery and outdoor activities Arkansas has to offer. During the spring and summer months she enjoys hiking, kayaking, and camping. During rainy weather she enjoys crafting, sewing, and attempting to quilt.

**Donka Milke** was born and raised in Bulgaria, but the United States has been her home since 2005. She earned an M.S. in Food Science with emphasis in Food Safety from Kansas State University in 2014. While pursuing her degree, she specialized in food microbiology while working as a research assistant at the Food Safety and Defense Lab at KSU. In August of 2015, she joined the AVDL's team as a Microbiologist in the Bacteriology section. Her work mainly focuses on microorganism identification, antibiotic susceptibilities, as well as *Salmonella* detection in environmental samples.

During her free time Donka enjoys traveling, the outdoors, and playing Sudoku puzzles. During her time at ALPC-VDL she has been a joy to work with and has been a truly valuable member of the Bacteriology team.

## What is PARR?

When submitting cytology and histopathology of lymph nodes, the recommendation to perform PARR may be in the 'Comments' when the diagnosis of lymphoma cannot be confirmed. This test, PCR for Antigen Receptor Rearrangements is a clonality assay that amplifies DNA to help distinguish inflammatory or reactive lymphocytes from neoplastic lymphocytes. The PCR does this by targeting the CDR3 region of T-cell receptor gamma and immunoglobulin heavy chain genes for B cells. The results will relay either a monoclonal or polyclonal population of lymphocytes. Neoplastic lymphocytes are monoclonal expansions of malignant lymphocytes, and reactive lymphocytes are polyclonal.

### When to use PARR?

PARR is utilized when other diagnostic tests, such as cytology or histopathology are inconclusive to distinguish between reactive versus neoplastic lymphocytes. Inconclusive results may occur when lymph nodes are heavily reactive, such as when infected with a tick-borne disease,

when specific types of lymphoma do not efface the follicular architecture, or when trying to differentiate between feline inflammatory bowel disease and intestinal lymphoma.

### What sample is needed for PARR?

We can submit cytology slides to Colorado State University and paraffin embedded biopsies to Michigan State University. Additionally, for cases where leukemia is suspected, PARR can be performed on blood within an EDTA (purple top) tube.

### What is Flow Cytometry?

Flow cytometry is another option to help distinguish between a reactive and neoplastic population of lymphocytes. With flow cytometry, live cells are labelled with antibodies that bind to proteins expressed on the cell surface, such as CD 3 protein for T lymphocytes, and CD21 protein for B lymphocytes. The flow cytometer determines how many cells of each type are present, which will distinguish a homogenous or neoplastic population from a heterogeneous or reactive population.

### When to use Flow Cytometry and what sample is needed?

Flow Cytometry requires cells to be in a solution. Blood, bone marrow, or cavity fluid can be placed in an EDTA (purple top) tube; or aspirated cells from a lymph node or mediastinal mass can be placed in a saline/serum mixture in a sterile (red top) tube. Thus, flow cytometry cannot be performed on already submitted cytology slides or biopsies. If flow cytometry is going to be submitted, it is recommended to visit the Colorado State University Clinical Immunology Laboratory website for detailed instructions.

### Conclusions:

Both PARR and Flow Cytometry are valuable diagnostic tools that may assist in diagnosing lymphoma and determining tumor phenotype. Both of these tests provide valuable information that help determine prognosis and guide therapy. The majority of the information above is from the Michigan State University and Colorado State University websites; please refer to both of these sites for more information.

### We appreciate your business!

If you have any questions/ concerns, please don't hesitate to call (501) 907-2430. We are more than happy to speak with you.

Is there a test or service you would like for us to offer? A better way we can provide you with results? Please let us know!

The newsletter, our most updated Fee Schedule, and our Submission Forms are online at [alpc.arkansas.gov](http://alpc.arkansas.gov).

### Nights, Weekends, and Holidays

Don't forget to call our emergency phone number (501-773-2456) to speak with a veterinarian regarding after hours necropsy submissions or any urgent laboratory issue.

### Do you have something to contribute?

If you have an interesting disease topic or case you would like to inform your Arkansan colleagues about, please contact Dr. Virginia Charney at [vcharney@alpc.ar.gov](mailto:vcharney@alpc.ar.gov) for more information.

**ATTENTION: Act now!** Email [alpcclab-news@alpc.ar.gov](mailto:alpcclab-news@alpc.ar.gov) to receive the ALPC VDL Newsletter via email or visit [www.alpc.arkansas.gov/lab](http://www.alpc.arkansas.gov/lab) to view online. **THE ALPC NEWSLETTER WILL NO LONGER BE AVAILABLE IN PRINT!**

## Bovine and Ovine Blackleg Disease

This highly infectious and deadly disease is spread by spores from bacteria of the genus *Clostridium*, the most common being *Clostridium chauvoei*. These spores are highly stable in the environment and are commonly consumed through the normal grazing habits of cattle and sheep. *Clostridium* species infection causes necrosis of the tissue which exhibits classic black lesions.

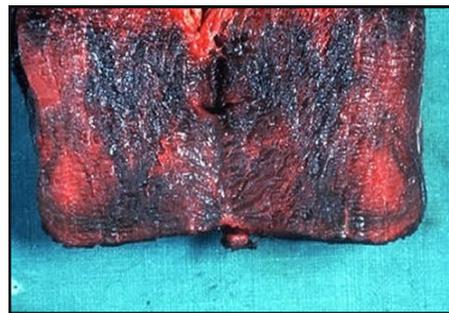
This disease is commonly seen in calves between 6 and 24 months but can effect cattle and sheep at any age or body condition. There are vaccines available to protect herds against *C. chauvoei*, *C. septicum*, and *C. novyi*.

### How is it detected at ALPC-VDL?

By using Direct Fluorescent Antigen (DFA) testing on infected tissue, analysts are able to detect the antigens specific to *Cl. chauvoei*, *Cl. novyi*, *Cl. sordellii* and *Cl. septicum* by using species specific conjugates and ultraviolet microscopy.

### Submissions for *Clostridium* species DFA

Submissions should be the  freshest  possible tissues that have been stored on ice. The ideal tissue for this test is **skeletal muscle** and **heart muscle** displaying black lesions. This kind of tissue has the highest detection rate. Kidneys, lungs, and other organs are not recommended. Once the tissue has been collected, it is important to keep it cool and to submit it to ALPC-VDL as soon as possible.



Example of Blackleg lesions from skeletal muscle from a cow.



Example of Direct Fluorescence Antigen test: Positive for *Clostridium septicum*.