

OADDL E-News

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Parasitology Laboratory Merger

The parasitology laboratory, previously managed by the Department of Veterinary Pathobiology, is now an integral part of OADDL as one of its laboratory sections. This integration has streamlined our administrative processes at the College of Veterinary Medicine and will better serve our client's needs for parasitology services. The section is supervised by Dr. Ruth – a faculty member of the OSU-based National Center for Veterinary Parasitology and Emily Looper serves as the parasitology technologist.



Emily Looper is the Lab Technologist for the Parasitology Laboratory. She performs diagnostic services for the lab and instructs diagnostic techniques to fourth year veterinary students. Originally from Stillwater, Emily has a BS in Microbiology and Molecular Genetics from Oklahoma State University and has worked in the Parasitology Lab since March 2019.



Dr. Ruth Scimeca, VMD, MSc, PhD, DACVM, is an Assistant Professor and the clinical parasitologist at the Oklahoma Animal Diseases Diagnostic Laboratory (OADDL), where she provides diagnostic and consulting services to veterinarians, producers, and the public. Dr. Scimeca also teaches clinical parasitology to fourth year veterinary students at OSU CVM, and enjoys working in research.

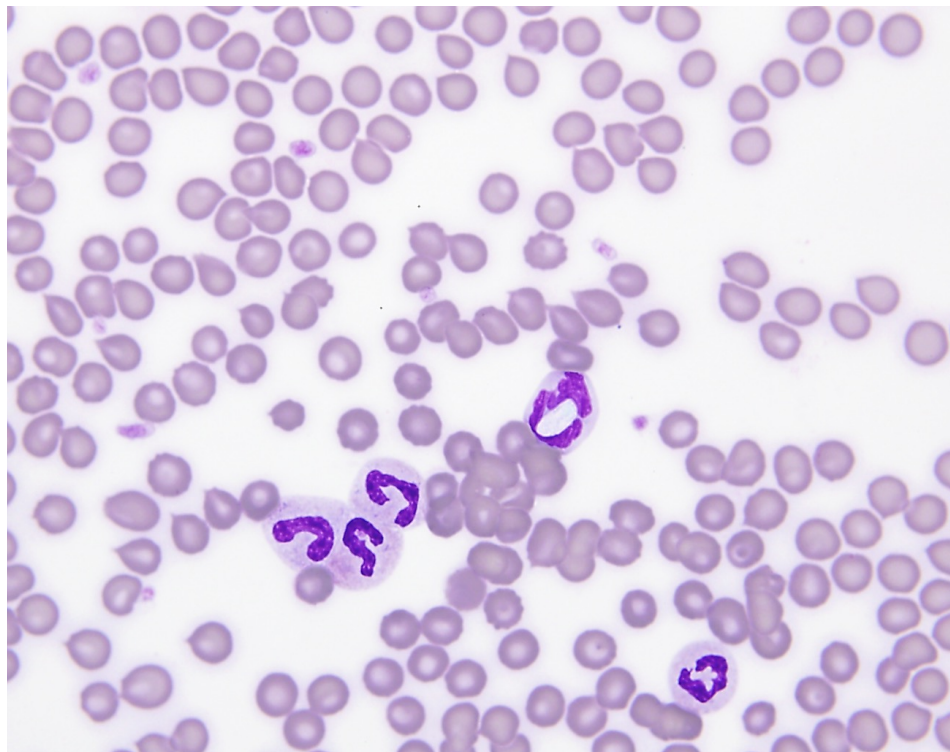


COLLEGE OF
VETERINARY MEDICINE

Cytology Corner: Why It's Important to Look at Blood Films.

Many veterinary practices have bench-top hematology analyzers that provide benefits to the veterinarian, patients, and clients they serve with rapid testing results. Through the years hematology analyzers have become quite sophisticated using laser flow cytometry for white blood cell differentials, optical fluorescence for reticulocyte counts, and laminar flow impedance for red blood cell counts. Many analyzers provide RBC and WBC scatter plots or dot plots which provides additional information beyond the numerical data. Given all the information the hematology analyzer provides why spend time looking at blood films? The simple answer is that as sophisticated as hematology analyzers have become; they cannot “see” everything. Analyzers can miss abnormalities on “normal” blood samples. It is possible for a canine patient with circulating microfilaria to have hematology results within reference intervals or for a feline patient to have *Cytauxzoon felis* piroplasms within the RBCs without having overt clinical disease or abnormal hematology results; these are patients with subclinical disease. Another example are geriatric feline patients with Heinz body formation in their RBCs. Heinz bodies are precipitates of denatured hemoglobin and in this case may be associated with patients that have diabetes mellitus, hyperthyroidism, or lymphoma. While Heinz body formation often causes a hemolytic anemia, in these geriatric felines there may not be a reduction in the patient's hematocrit below the reference interval.

When hematology results are abnormal, the rationale and need to examine the blood film increases. The analyzer cannot evaluate RBC morphologic changes. Examining the blood film from an anemic patient may assist in determining the cause of the anemia or assist in determining what diagnostic tests should be done next. Are spherocytes or Heinz bodies present on the blood film? Are erythroparasites present? Is there increased RBC fragmentation?



What's your diagnosis? Blood film from a dog

Find the answer on the last page of this newsletter.

Are there increased numbers of nRBCs or RBC inclusions?

Similarly, hematology analyzers cannot evaluate WBC morphologic changes. Even the most sophisticated analyzers cannot enumerate band neutrophils in the WBC differential, although some analyzers will flag for suspected bands and encourage the operator to make a blood film. Patients could potentially have an inflammatory leukogram that is characterized by a left shift (increased bands) but have a total neutrophil count within the reference interval. Toxic change, which signifies accelerated granulopoiesis due to an inflammatory process, would go unnoticed and infectious agents such as *Anaplasma*, *Ehrlichia spp.*, *Hepatozoon spp.*, and *Histoplasma spp.* would be undetected. Other analyzer WBC-misses when cell counts are within reference intervals include reactive lymphocytes, granular lymphocytes (LGLs), abnormal leukocytes, mast cells, blast cells, or lysed cells.

Hematology analyzers typically do a good job enumerating platelets when the platelet count is within the reference limit or above with few exceptions. If the analyzer performs only impedance counting occasionally other small particles are counted. For example, free *Histoplasma* organisms, free Heinz bodies from lysed RBCs, or cytoplasmic fragments from abnormal WBCs or leukemic cells can falsely increase the platelet count. This is a rare occurrence. Analyzers that additionally utilize fluorescence to count platelets minimize that artifact. Often though, hematology analyzers undercount platelets. Large platelets that are the size of an erythrocyte or platelets that are aggregating in small to large clumps are not counted at all. Pseudo-thrombocytopenia is the most common hematology analyzer “mistake”. Low automated platelet results should always be confirmed with an examination of the blood film for platelet clumps.

— Theresa E. Rizzi, DVM, DACVP

Getting the Most From Your Necropsy Submission



For best results, animals should be submitted as soon as possible after death (same day or next day). If there will be a delay in submission, animals should be kept cold. Avoid freezing if possible as it delays testing and can affect specimen quality due to freezing artifacts. Factors known to accelerate animal decomposition and induce artifacts include: animal size, color, body condition, hair/wool coat, and outdoor temperature.

A completed OADDL submission form must accompany the animal. Necropsies are typically performed within hours of submission so having all the information at the time of submission is vital to our investigation. A *brief* history (e.g., duration of illness, clinical presentation, feed/husbandry changes, new animals, treatments, and previous submissions) within the submission form provides patholo-

gists relevant information regarding the demise of the animal and will aid in test selections. Printouts of entire medical records are acceptable (as supplemental documents) but should never replace a brief collective history within the official submission form.

OADDL's role is limited to diagnostics. You are encouraged to work with your veterinarian or Extension Educator on interpretation of necropsy findings and determining the best route(s) of treatment for herd health situations.

Submitters have options for disposition of remains. The decision must be made at the time of submission. Routine disposal fees are based on the animal's weight. Private cremation (with return of ashes) is available through various third-party crematories. OADDL will hold animal remains for approximately 2 weeks following submission. The submitter is responsible for making arrangements with a crematory of their choice. The crematory will pick up the remains at OADDL. For biosecurity reasons, OADDL will not release remains back to the submitter.

— **Timothy Snider, DVM, Ph. D., DACVP & Emily Cooper**

Coggins Submissions

A Coggins test for detection of Equine Infectious Anemia (EIA) virus in serum samples is required for all horses being transported in the United States. Paperwork and blood sampling must be performed by a USDA Category II Accredited Veterinarian. Test results are good for one year. OADDL is prohibited from performing testing on incomplete/inaccurate submission forms.

OADDL is certified to perform both the Agar Gel Immunodiffusion (AGID) and the Enzyme-Linked Immunosorbent Assay (ELISA) and accepts all three available submission methods: 1) Federal Form (VS Form 10-11, FEB2018), 2) Global Vet Link (GVL) and 3) Veterinary Services Process Streamlining (VSPS).

The Federal Form VS 10-11 is handwritten and can be obtained by contacting USDA at 405-254-1797. GVL and VSPS are both online systems. There is a fee for GVL submissions; visit their [website](#) for additional information. VSPS is a free service; visit their [website](#), watch their video on [how to get started](#) and read their [instructional materials](#).

 **GlobalVetLink**
Your Animal Health Compliance Assistant


Veterinary Services

Statewide Rabies Testing Performed at OADDL

OADDL began performing rabies testing for the state of Oklahoma following a partnership agreement with the Oklahoma State Department of Health (OSDH) in September 2021. OADDL worked closely with Dr. LeMac Morris, State Public Health Veterinarian, to make a seamless transition of this essential service from the Public Health Laboratory.

For questions regarding rabies exposure risks for humans or animals, or to find out if an animal should be tested for rabies, contact OSDH Acute Disease Service Epidemiologist-on-call at 405-426-8710.

To obtain free rabies shipping boxes, call OADDL at 405-744-6623. Visit our website for [instructions](#) on how to submit samples for rabies testing. Samples are received 24/7/365. The Oklahoma State University Police Department aids with reception of after-hours hand-delivered submissions. We strongly encourage hand delivery or [UPS services](#) using our highly discounted labels available on our website.

Ship rabies specimens to:

Oklahoma Animal Disease
Diagnostic Laboratory
1950 W Farm Rd
Stillwater, OK 74078

Rabies testing for submitted brains, small animal heads (e.g., dog, cat, skunk) and whole bodies (less than 12 inches long exclusive of tail) is free of charge. The following services for rabies testing (without necropsy) will incur additional charges:

Whole body submitted ≥ 12 in length

Decapitation (e.g., dogs, cats, racoon etc.) \$25.00 plus disposal based on weight

Decapitation (e.g., cow, horse etc.) \$35.00 plus disposal based on weight

Large animal head submitted (e.g., cow, horse etc.)

Brain removal \$35.00



VISIT OADDL AT THE

OKLAHOMA
VETERINARY
CONFERENCE

NORMAN, OK 22 JANUARY, 27-29

Small Ruminant Testing Supplies

To facilitate clients' use of our Small Ruminant Biosecurity Panel (includes CAE, CL and John's), OADDL is now offering sample collection kits for a small fee. Please call the lab at 405-744-6623 to order 10, 30 or 50 sample kits.

Kits include everything you would need to collect and ship blood samples to OADDL including:

1. Monoject 18G x 1.5" Needle
2. Sterile Monoject 6 cc Luer-Lok syringes
3. 10 mL Serum Blood Tubes

4. 40 Blood Vial Carton with Divider Box and lid
5. Absorbent Material
6. Biohazard Baggie w/ document sleeve
7. OADDL Submittal Form w/ Multiple Animal Submission Form
8. Cold Pack w/ Ziplock-type baggie
9. Aluminum Refrigerant Sleeve
10. 12"x 8"x 6" Box

Click [here](#) to learn more about the Small Ruminant Biosecurity Panel.

FREE Histology Mailers available with purchase of Histo Jars.

For added convenience, OADDL is now providing one jar and two jar mailers free of charge with the purchase of histo jars. The mailers include a Biohazard bag with absorbent material and a shipping envelope. If you would like the mailers, please request them when you place your order for the jars.



We encourage you to use our highly discounted UPS shipping labels available on our website to provide tracking for your package. Contact the lab at 405-744-6623 or oaddl@okstate.edu to order.

Message from the Director

Dear valued clients and stakeholders: We are delighted to present to you the winter 2022 edition of the OADDL newsletter. We greatly value your partnership and continue to work hard to earn and maintain your trust and business. Completed, ongoing, or planned activities:

- In partnership with the Oklahoma State Department of health, OADDL is now conducting all rabies testing for the State of Oklahoma. See page 4 for more details.
- As OADDL caseload continues to grow and more services (rabies testing, parasitology lab integration) are added, there is a need for additional personnel. We recently added the position of Associate Quality Manager and Biosafety

Officer and were fortunate to attract Janisue Coleman, previously the Chemical Hygiene Officer at the OSU Environmental Health and Safety Division.

- To improve the monitoring of storage conditions for essential reagents and client samples, we recently completed the installation of a lab-wide temperature/CO₂ monitoring systems, which alerts us 24/7 when equipment temperature or CO₂ levels go outside pre-defined ranges.
- We are currently working on implementing an automated disease reporting system whereby test results of reportable diseases are automatically e-mailed to state officials. This will improve disease reporting since staff members will

no longer have to remember what, when, and to whom to send reportable disease test results.

- After keeping our test fees unchanged (or in the case of Coggins, reduced) over the past two years, we plan to implement a fee increase effective July 1, 2022 to help us absorb increased costs resulting from hyperinflation in biomedical supply costs.

I wish to thank you again for our business partnerships and look forward to continue serving you in the months and years ahead.

– Dr. Jerry Saliki



Getting to Know Us

Noelie Bircher is originally from Spring, Texas and moved to Stillwater in 2015. She received her B.S. in Animal Science in 2018 and M.S. in Microbiology in 2020 from Oklahoma State University. She originally joined OADDL in 2016 as a student worker and became a senior laboratory technician in bacteriology in July 2020. In her free time she enjoys crocheting, hiking and hanging out with her friends. She also has a 6-year-old Pitbull named Bear that keeps her busy with his many ailments.



Allison Lawrence is originally from Magnolia, Texas which is just outside of Houston. She graduated from Oklahoma State University in 2021 and received her B.S. in Zoology. She joined the receiving and necropsy department in March of 2021 and has hopes of attending veterinary school. She has two cats, Pete and Lemon, that always keep her entertained. In her free time she enjoys playing sports, hanging with her twin sister



and friends, and thinking about the next cat she is going to get.

Ideas/Suggestions for Future Content

We want to hear from you. Send your ideas and suggestions to oaddl@okstate.edu.

Contact Us

Oklahoma Animal Disease
Diagnostic Laboratory
Ph: 405-744-6623
Fax: 405-744-8612
vetmed.okstate.edu/oaddl

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Cytology Corner Answer: *Hepatozoon spp.*
(Gamont within the center image neutrophil).