

OADDL E-News

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Saliki Returns to OSU as OADDL Director



Dr. Jerry Saliki earned his DVM degree from the University of Liege, Belgium in 1984. He came to the United States in 1989, earning a PhD in Veterinary

Virology from Cornell University in 1993 and became a diplomate of the American College of Veterinary Microbiologists in 1994. From 1993 to 2005 at OSU's College of Veterinary Medicine, Dr. Saliki served as an assistant professor and subsequently associate and full professor in the Department of Veterinary Pathobiology and also as Section Head for virology, serology, and molecular diagnostics at OADDL. In 2005, Saliki went to the Athens Veterinary Diagnostic Laboratory at the University of Georgia to serve as section head for virology and serology until 2007 when he became director of that laboratory until returning to OSU as Director of OADDL in 2020.

Cytology Corner

Welcome to the wonderful world of cytology! Cytology can be a valuable tool in the veterinary toolbox used to obtain a relatively quick diagnosis with minimal equipment.

What are the advantages of cytology?

As already mentioned, quick results with laboratory turn-around time usually within 24-48 hours and minimal equipment requirements. In general, no sedation or anesthesia is required for fine needle aspiration of cutaneous/subcutaneous lesions and peripheral lymph nodes and the area does not need to be prepped. Fine needle aspiration is tolerated quite well with few to no adverse effects. There are exceptions to this latter statement related to the type of tumor being aspirated or whether

internal organs are aspirated, but overall adverse events are limited.

What can cytology offer the veterinarian?

A specific diagnosis, a specific tumor type, identification of infectious agents, the presence of metastatic disease, or lead you to the next procedure (surgery) or next diagnostic test (full biopsy, radiographs/ultrasound, culture, etc.) to perform.

What equipment is needed to get samples for cytology?

Needles, typically 22-25 gauge; these needle gauges minimize the amount of blood contamination. A good rule of thumb, the larger the bore needle (anything less than 22 gauge), the more

continued on page 2



COLLEGE OF
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Cytology Corner *(continued from page 1)*

blood will contaminate your sample and, ironically, results in fewer tissue cells being collected rather than more. Excessive blood in the sample tends to obscure the tissue cells and render the sample non-diagnostic. In cytology, blood in your mass aspirate sample is not your friend! While a 10 ml. syringe is not necessary to collect the sample (I'll talk more about sample collection technique below), a syringe is necessary to get the sample from the needle to the microscope slide. A 10-12 ml syringe is usually adequate to expel the sampled material from the needle onto the slide. Lastly, clean frosted edge microscope slides are needed. Frosted slides enable the user to write identifying information and location of the aspirate on the slide.

Cytology can be a useful tool, but what are the disadvantages?

First, there is no full tissue architecture like a histologic section would provide; cytology is based on the number and appearance of cells. The more cells collected the more likely a diagnosis.

Second, some lesions do not exfoliate cells well. This can be frustrating for everyone: client, veterinarian, and pathologist. Very often lesions composed of fibrous connective tissue cells do like to give up cells. And then there are the lesions that are very vascular or are composed of vascular endothelial cells (hemangioma/hemangiosarcoma). These masses often yield only blood (and more blood).

Third, sometimes the appearance of the cells doesn't match the biologic behavior or the tumor. This is often true of canine thyroid carcinoma, where the cells look small and boring, but they are invading surrounding tissue.

And lastly, cytology is dependent on the quality of the sample; too much blood, too few tissue cells, most of the cells broken, etc.

Improving the quality of the submission so you get a diagnosis is the primary purposes of the Cytology Corner. Each newsletter will provide tips for how to collect samples, make diagnostic-quality slides, staining tips,

and even how to send in your samples to OADDL. This will sometimes include a YouTube video link or instructional images. We are available to help you if you are new to using cytology or help you get better so that your samples lead to a diagnosis.

Lastly, I will end with a *What's your diagnosis?* with the answer on the last page of the newsletter.

So here goes, #1:

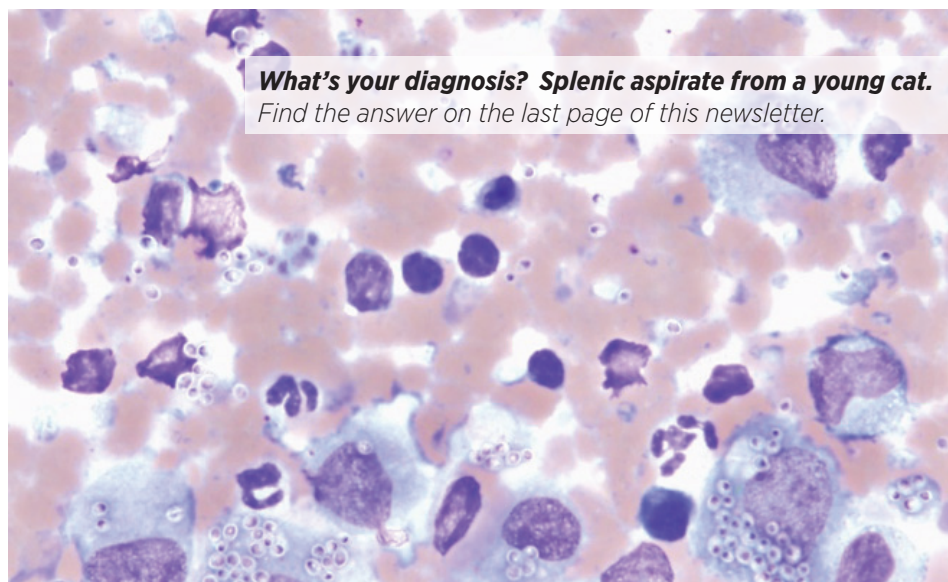
What is the difference between aspiration and non-aspiration techniques for sample collection?

Veterinarians that use cytology often use the non-aspiration technique almost exclusively. There is less blood and less cellular breakage using this technique and that is important particularly when aspirating areas where the population of cells is known to be fragile, such as the lymph nodes. This technique is used for internal organ aspirates and the preferred method for lymph node aspirates. Holding only the needle or a needle attached to a air-filled syringe, the needle is inserted into the mass/lymph node/organ and moved quickly several times up and down along the same track, like the action of a sewing machine or tattoo needle. Care should be taken to stay along the same track as moving the needle laterally within the site increases the likelihood of increased blood contamination. After the needle is withdrawn, if only a needle

was used, it is attached to an air-filled syringe. With the needle close to the slide the contents are quickly expelled onto a microscope slide and spread (see below for spreading technique).

The aspiration technique attaches a needle to a syringe and inserts the needle into the mass. After insertion, negative pressure is applied by withdrawing the syringe plunger several times. The needle is then withdrawn upward without removing the needle from the mass, redirected within the mass and again applying negative pressure. This can be done several times to sample different areas of the mass. Once removed from the mass, the needle is removed from the syringe, the syringe is filled with air, and the contents expelled onto the slide. For both techniques, it is crucial that the sample be spread IMMEDIATELY after being expelled. Sampled material clots and dries quickly. When the sample is placed on the slide a spreader slide is placed perpendicular on the sample, and without any downward pressure applied, the spreader slide and sample slide are pulled quickly apart in opposite directions. The samples are air-dried only. No chemical fixative or heat fixation is needed and is discouraged. Chemical fixation interferes with the staining process and heat fixation can alter the cells' appearance.

— **Theresa E Rizzi, DVM, Diplomate ACVP (Clinical Pathology)**



What's your diagnosis? Splenic aspirate from a young cat.
Find the answer on the last page of this newsletter.

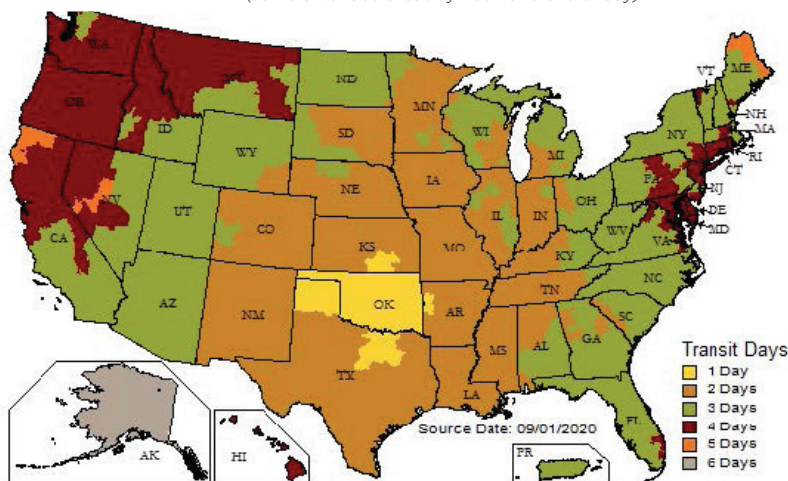
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Cino & Taylor Join OADDL Pathology

Giselle Cino, DVM, Ph.D., DACVP, is an assistant professor and anatomic pathologist in the Department of Veterinary Pathobiology. Originally from Asuncion, Paraguay, she earned her DVM degree from the College of Veterinary Medicine, National University of Asuncion, Paraguay, in 2009.

In 2013, Dr. Cino completed a combined anatomic pathology residency/Ph.D. program at Kansas State University. In 2014, Cino became a diplomate of the American College of Veterinary Pathologists and in 2016, she earned her graduate degree also from KSU.

Brianne Taylor, DVM, MS, is an assistant professor in the Department of Veterinary Pathobiology. Originally from Scottsdale, Arizona, she earned her BS in Microbiology, MS in Toxicology, and DVM degree from Colorado State University. She completed an anatomic pathology residency and earned a second MS degree in Veterinary Pathobiology from Texas



Dr. Giselle Cino

A&M University. Her research interests include equine pathology and infectious diseases in all species.

Taylor enjoys spending time with her husband and their many animals,



Dr. Brianne Taylor

horseback riding, hiking, and being outdoors. She is a huge music fan of all kinds, especially classic rock. She is a member of the American Association of Equine Practitioners (AAEP).



Parasites and Production

Intestinal parasites can affect production in cattle, sheep, goats and camelids. Parasitism is often sub-clinical, with farmers and producers unaware of the problem.

The first step in having an effective parasite control program is knowing which parasites are affecting the herd. The ideal parasite control program promotes weight gain, minimizes disease, and avoids unnecessary use of dewormers to reduce parasite resistance to deworming products.

Knowing when and which animals to deworm is key to achieving an effective intestinal parasite control program. **Fecal diagnostic techniques can help producers identify parasites affecting their herd.**

Examples of these techniques include: [Sedimentation](#) to find flukes (*Fig. 1*) or [Fecal Egg Counts](#) (*Figs. 2 and 3*) to monitor the array of parasites present and treatment efficacy. When used in combination with good parasite control regimes, grazing and production management, these techniques increase farm profitability and sustainability.

— **Ruth Scimeca VMD,**
MSc, PhD, DACVM

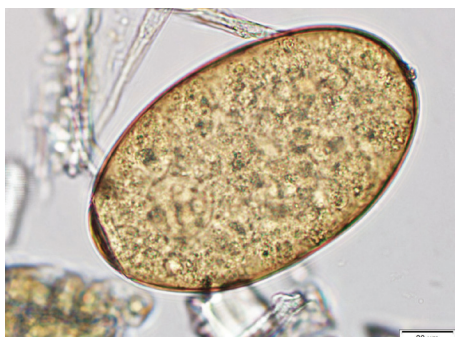


Fig. 1. Fluke egg from a cow. (*Fasciola hepatica*)

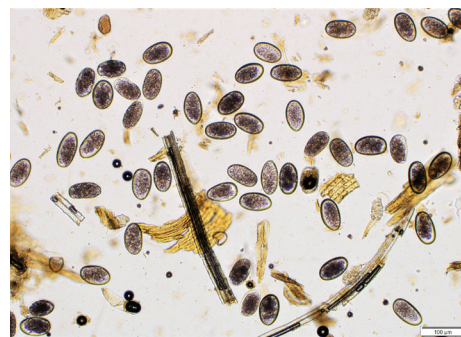


Fig. 2. Sheep with haemonchosis. (Barber pole worm)

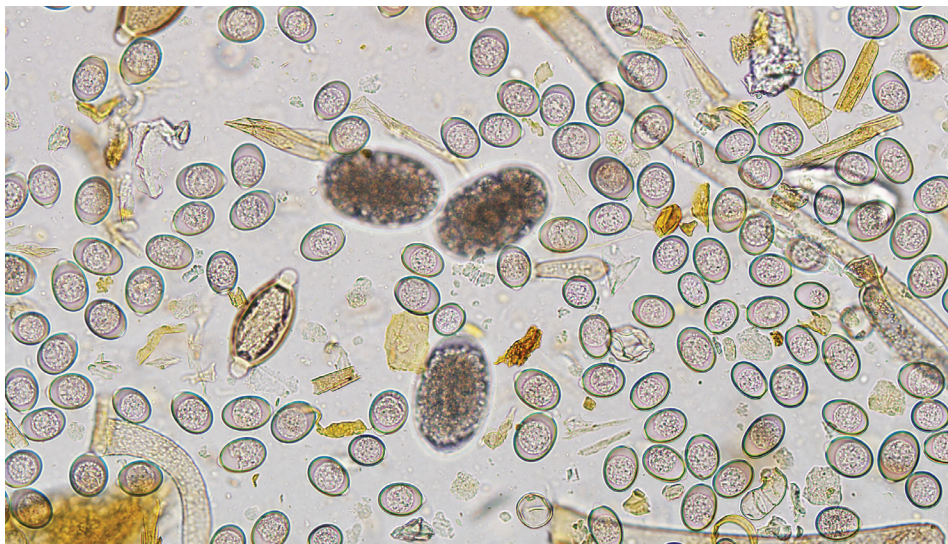


Fig. 3. Coccidia in a goat. (*Eimeria* spp.)

Message from the Director

It would be an understatement to say that 2020 was a momentous year. When I decided in November 2019 to come back home to Stillwater as OADDL Director, I could not have imagined the circumstances under which I will move. COVID-19 struck our nation in March and I moved in April 2020. At that time, OADDL was making our State proud by playing a major role in the initial testing efforts, being the first veterinary lab in the nation to conduct human COVID-19 testing. Under the extraordinary leadership of Dr. Jerry Ritchey (Interim Director), Ms. Emily Cooper (Assistant Director), and Dr. Akhilesh Ramachandran (Head of Molecular Diagnostics and Microbiology sections), OADDL did not only play a leading role in human COVID-19 testing, but also maintained all its animal diagnostic services. Our highly dedicated and well-trained staff went beyond the call of duty to make this happen by

keeping OADDL fully staffed on-site for long hours throughout the pandemic. I could not be happier coming in to lead a team with such high momentum. I want to express my hearty appreciation to the entire OADDL team for their extraordinary dedication and hard work in 2020.

It is my firm belief that the state of OADDL is strong and its future is very bright. Our participation in human COVID-19 testing helped us to put into practice and fine-tune our capacity to respond to major disease outbreaks. With the caliber of our faculty and staff, as well as the quality of our infrastructure, we look forward to expanding our services in 2021 and beyond, while maintaining the timeliness and accuracy you have come to expect from us. In this regard, I would like to highlight a few exciting things. We have recently enhanced our human resources by recruiting two new OADDL-based pathologists (Drs. Cino and Taylor),

adding a molecular technician, and upgrading a serology technician to a lab supervisor position. We have also improved our delivery of services to clients through updating our website content and teaming up with UPS to provide discounted shipping labels for easy sample submission. Furthermore, we are currently improving our infrastructure by renovating our break room and the bacteriology laboratory – thanks to special state funding through ODAFF. These are all very exciting developments and we have more in the pipeline.

I wish everyone safety, while being optimistic that 2021 will bring us better tidings than 2020.

– Dr. Jerry Saliki



Getting to Know Us

Crystal Stanley began working at OADDL in 2018 as part time staff and joined the Serology Lab full time in November 2019 as a Senior Lab Technologist. After receiving her BS in Zoology from Oklahoma State University in 2007, she worked at The Cat Clinic of Stillwater for almost 10 years. In her spare time, she enjoys wasting time on YouTube, reading, crafts, journaling, watching anime and being a crazy cat mom to two sweet kitties Symphony and Sonja.



Ideas/Suggestions for Future Content

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

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Cytology Corner Answer: Histoplasmosis

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