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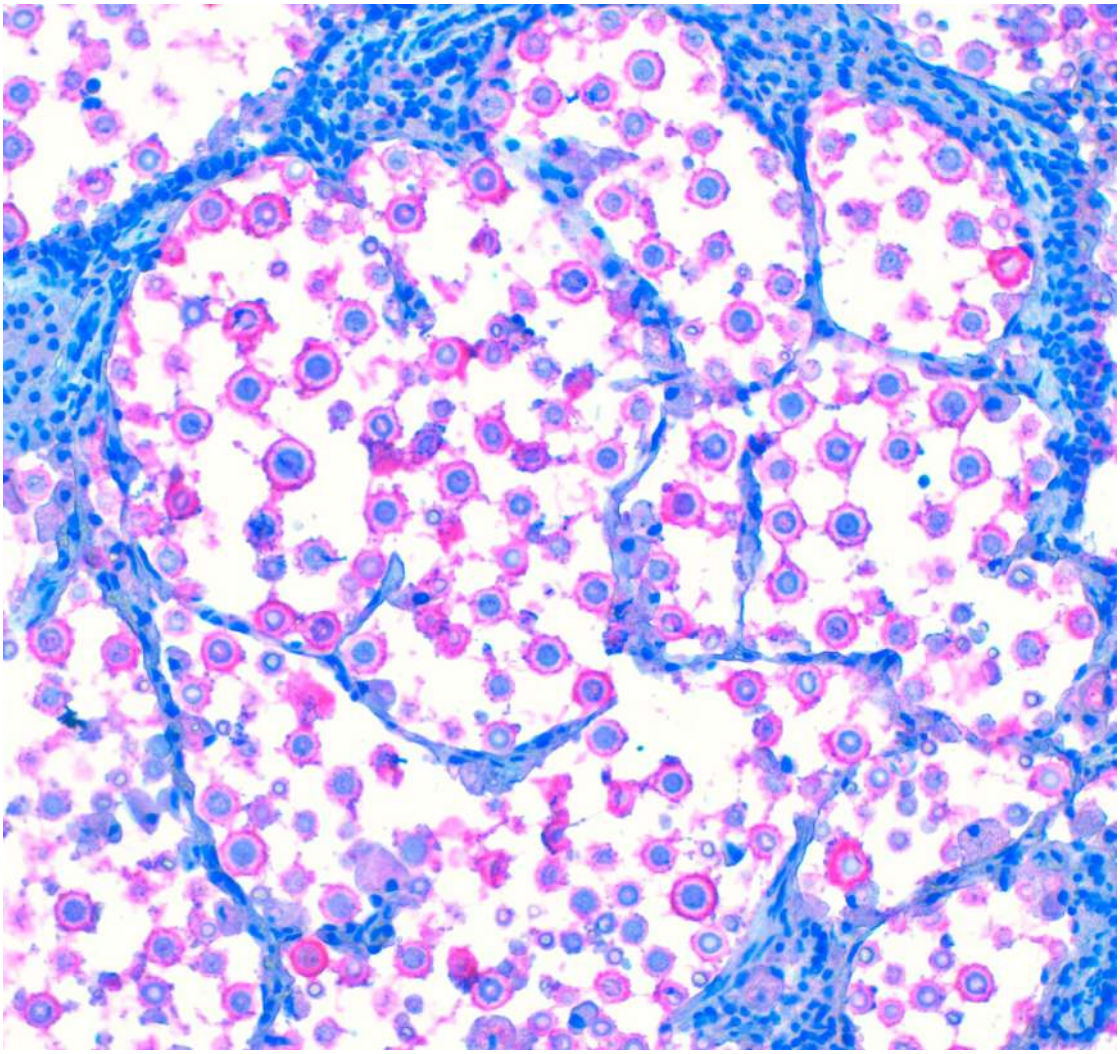
and comparative pathology

THE DAVIS-THOMPSON FOUNDATION NEWSLETTER

March

VOL. 53



Tissue from an adult female goat. What is a major virulence factor of the pictured organism?

a) BAD-1
b) Production of melanin
c) Heat shock protein 60
d) Spherule glycoprotein regulation

See answer in next page...

INSIDE THIS ISSUE

Monthly cover photograph winners:
Davide Pintus, Maria Giovanna Cancedda, Ciriaco Ligios

Institution: Istituto Zooprofilattico Sperimentale della Sardegna (Italy).

Answer: b) Production of melanin

This is a case of *Cryptococcus gatti* pneumonia in an immunocompetent Sardinian autochthonous goat, characterized by abundant extracellular yeast bodies in the alveoli. In situ serotyping of *Cryptococcus* sp was based on an immunohistochemical panel of antibodies kindly provided by Thomas R. Kozel. Immune reaction was visualized by Fast Red chromogen. Mayer's hematoxylin counterstain.

-Dr. Katherine D. Watson - Cover Image Editor
-Dr. Donald M. McGavin - Cover Image Composition Analyst

MESSAGE FROM THE CEO

Dear colleagues,

Welcome to the March issue of the Davis-Thompson Foundation Newsletter, brilliantly prepared, as always, by our great Managing Editors, Javier Asin and Jeann Leal. Thank you Javier and Jeann!

This issue is chock full of information about our myriad training activities around the globe, including, amongst others, three of the 4 "big ones": Descriptive Veterinary Pathology Course, CLIIC, CLASS & POLA (Gen Path was already successfully completed in February). Also, have a look at the table of activities in Latin America with an impressive number of courses and seminars throughout the continent!

Of particular interest is the article prepared by our Chief Financial Officer, Dr Bruce Williams, on the Foundation's Noah's Slidebox, a terrific new addition to the training toolbox of the Foundation and available for free to pathologists and trainees around the globe.

This month we are very proud to present in our "Expert's Corner" section a great article prepared by Dr Roger Kelly (University of Queensland, Australia) on gross examination of the bone marrow. As Roger explains in his article, this is knowledge that comes after many years of working in the PM room and is hard, or sometimes impossible, to find in the literature. Another legend of veterinary pathology, Dr Grant Maxie, has provided this month's fantastic editorial on ongoing competence of diagnostic veterinary pathologists; look it up in "JVDI in focus". Thank you Roger and Grant.

Looking forward to seeing everyone in one of our seminars.

Paco Uzal

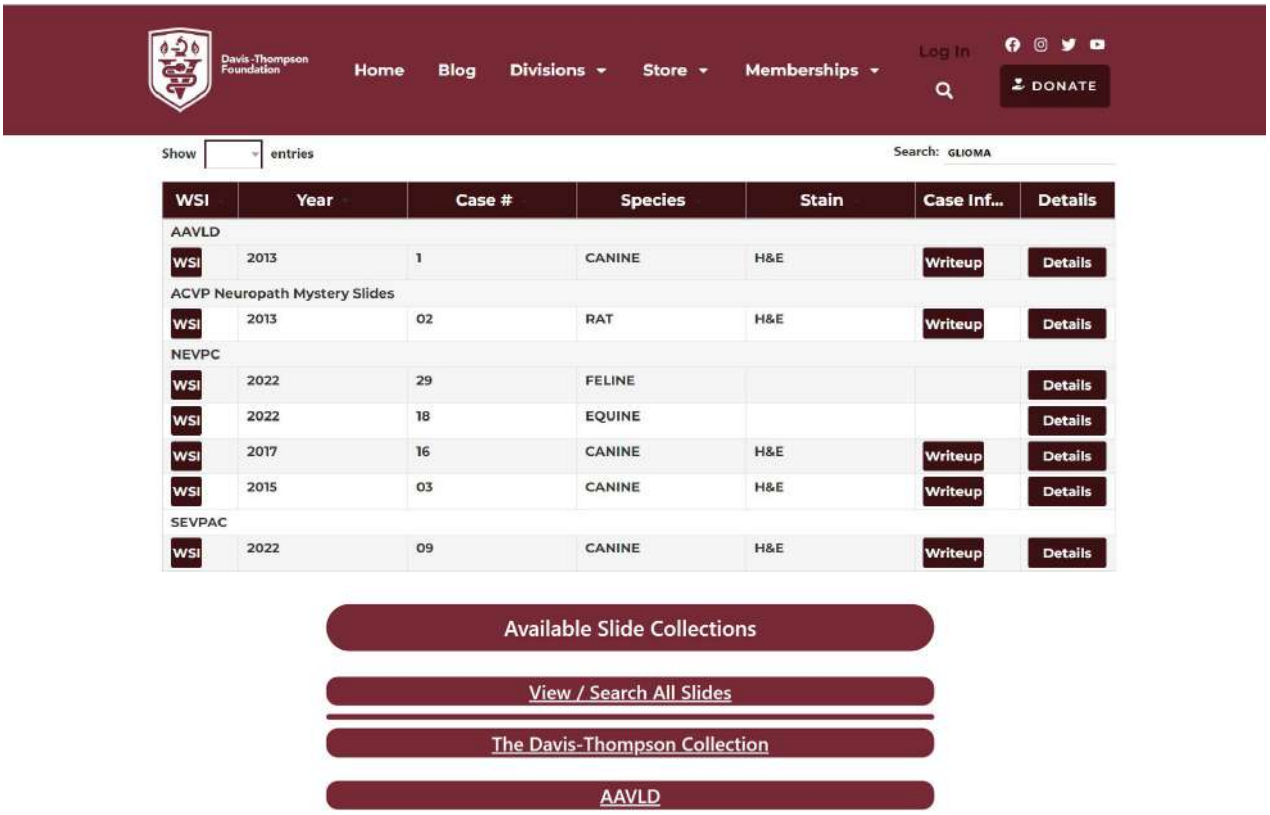
Chief Executive Officer
Davis-Thompson Foundation

MESSAGE FROM THE CFO

Have You Looked in Noah's Slidebox?

You probably know about Veterinary Systemic Pathology Online (VSPO) and the online Wednesday Slide Conference (both provided by the Joint Pathology Center), but have you visited Noah's Slidebox, an online whole slide image database, one of many new Foundation initiatives?

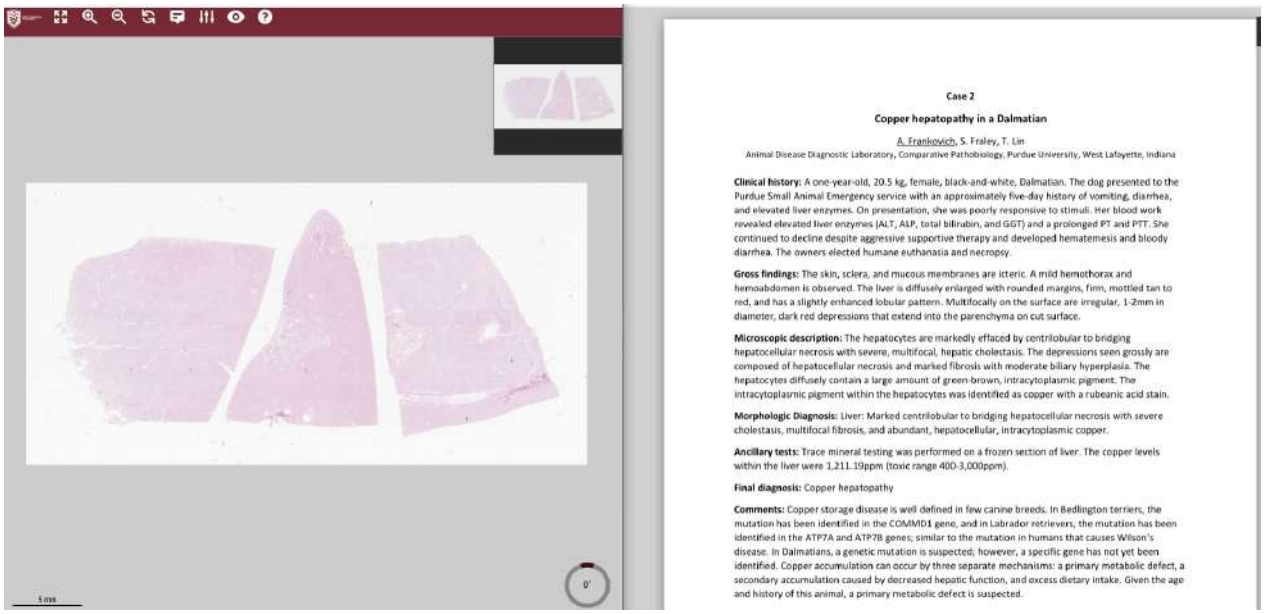
Populated by slides from a variety of the Foundation's annual slide seminars (NEVPC, Galveston, AAZV), those of other participating organizations (SEVPAC/Tifton, AAVLD, ACVP, etc), and selections from the Foundation's own 40,000 slides in its Training Aids Division, the scanned slides are available along with their lengthy, well-referenced, and up-to-date writeups, and best of all, searchable! And not to mention – FREE!



MESSAGE FROM THE CFO

With new cases rolling in every day, we have just passed 1000 cases and growing! We believe that Noah's Slidebox will be a very useful addition to online slide catalogs, with a larger selection of exotic species and less common entities (although there are a whole lot of classics in there as well).

Visit by clicking on the Noah's Slidebox Microscope on our home page at https://davisthompsonfoundation.org/ - then either browse years' worth of slide conferences or opt to "Search All Slides" and enter a keyword of your choice. Your results are returned with the most recent occurrences at the top so you are guaranteed the most current reviews!



Case 2

Copper hepatopathy in a Dalmatian

A. Frankovich, S. Fraley, T. Lin
Animal Disease Diagnostic Laboratory, Comparative Pathobiology, Purdue University, West Lafayette, Indiana

Clinical history: A one-year-old, 20.5 kg, female, black-and-white, Dalmatian. The dog presented to the Purdue Small Animal Emergency service with an approximately five-day history of vomiting, diarrhea, and elevated liver enzymes. On presentation, she was poorly responsive to stimuli. Her blood work revealed elevated liver enzymes (ALT, ALP, total bilirubin, and GGT) and a prolonged PT and PTT. She continued to decline despite aggressive supportive therapy and developed hematemesis and bloody diarrhea. The owners elected humane euthanasia and necropsy.

Gross findings: The skin, sclera, and mucous membranes are icteric. A mild hemothorax and hemoabdomen is observed. The liver is diffusely enlarged with rounded margins, firm, mottled tan to red, and has a slightly enhanced lobular pattern. Multifocally on the surface are irregular, 1-2mm in diameter, dark red depressions that extend into the parenchyma on cut surface.

Microscopic description: The hepatocytes are markedly effaced by centrilobular to bridging hepatocellular necrosis with severe, multifocal, hepatic cholestasis. The depressions seen grossly are composed of hepatocellular necrosis and marked fibrosis with moderate biliary hyperplasia. The hepatocytes diffusely contain a large amount of green-brown, intracytoplasmic pigment. The intracytoplasmic pigment within the hepatocytes was identified as copper with a rubeanic acid stain.

Morphologic Diagnosis: Liver: Marked centrilobular to bridging hepatocellular necrosis with severe cholestasis, multifocal fibrosis, and abundant, hepatocellular, intracytoplasmic copper.

Ancillary tests: Trace mineral testing was performed on a frozen section of liver. The copper levels within the liver were 1,211.19ppm (toxic range 400-3,000ppm).

Final diagnosis: Copper hepatopathy

Comments: Copper storage disease is well defined in few canine breeds. In Bedlington terriers, the mutation has been identified in the COMMD1 gene, and in Labrador retrievers, the mutation has been identified in the ATP7A and ATP7B genes; similar to the mutation in humans that causes Wilson's disease. In Dalmatians, a genetic mutation is suspected; however, a specific gene has not yet been identified. Copper accumulation can occur by three separate mechanisms: a primary metabolic defect, a secondary accumulation caused by decreased hepatic function, and excess dietary intake. Given the age and history of this animal, a primary metabolic defect is suspected.

Have a set from one of the organizations in the collection that you don't see listed? We'd like to borrow it for a few days (and return it to you!) – contact Bruce Williams at bruce.h.williams.dvm@gmail.com (We hope to add additional organizations in coming months!)

Bruce Williams
Chief Financial Officer
Davis-Thompson Foundation

THE EXPERTS' CORNER

THINGS I DIDN'T LEARN IN THE LIBRARY: Bone marrow

Assoc. Prof. W. Roger Kelly, BVSc MVSc PhD (retired)
Dept. Pathology, University of Queensland Veterinary School

After years of work in the PM room, every pathologist picks up tricks that help make life easier and increase diagnostic efficiency. Most of these are learned from experienced mentors; a few are acquired by luck or flash of inspiration. Such technical advances are usually too small to be written up as breakthroughs, and tend to be lost if not passed on to trainees before the perpetrator dies. I'm feeling my age, so here goes...

Veterinarians graduate knowing that haemopoiesis in adult animals persists in the cancellous bone of the axial skeleton, while being progressively replaced by adipocytes in the diaphyseal marrow of long bones as the animal ages. This, logically, leads to the selection of cancellous bone from sternum or pelvis for either cytological or histological examination, since one is more likely to find active haemopoiesis in these samples than in sections of diaphyseal marrow.

But we also know that significant haemorrhage and chronic infection will stimulate sub-endosteal stem cells in diaphyseal marrow in adults, so that, in an adult – after a sufficient interval – increased haemopoiesis or myelopoiesis may be easily seen grossly in sub-endosteal marrow. And of course diaphyseal marrow, being free of cancellous bone, is more easily and rapidly processed for histology.

So diaphyseal marrow is more labile than that in the axial skeleton and is more likely to show changes to the naked eye. Thus it can be more diagnostically useful than sternal marrow.

Another advantage of diaphyseal marrow is that it is easily accessed. Not with a saw! There's nothing uglier than intertrabecular spaces crammed with

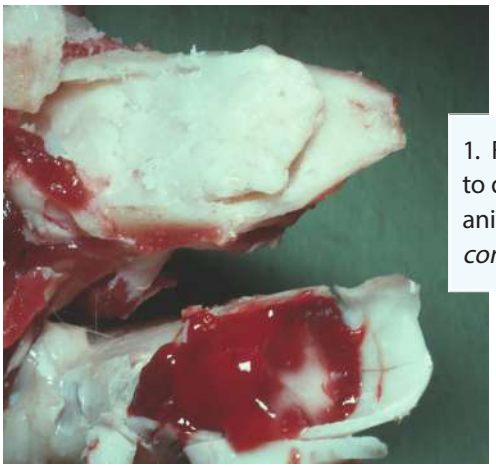
THE EXPERTS' CORNER

a sludge of bone dust. No, even a large dog's femur, with all muscle removed, can be easily broken in a spiral fracture if put under moderate lateral tension by lifting, and then struck smartly with the back of the knife. The same effect can be achieved with the back of a hatchet in horses and cattle. Femurs of smaller animals or juveniles can easily be split with clippers.

Of course, sternal cancellous bone should be sampled as well (after splitting, not sawing), especially if, in a chronically anaemic animal, there's no gross evidence of erythroid metaplasia in sub-endosteal long-bone marrow. If the sternal marrow isn't showing erythroid hyperplasia cytologically or histologically, then one is probably dealing with aplastic anaemia. In an adult with aplastic anaemia, examination of long-bone marrow wouldn't help much.

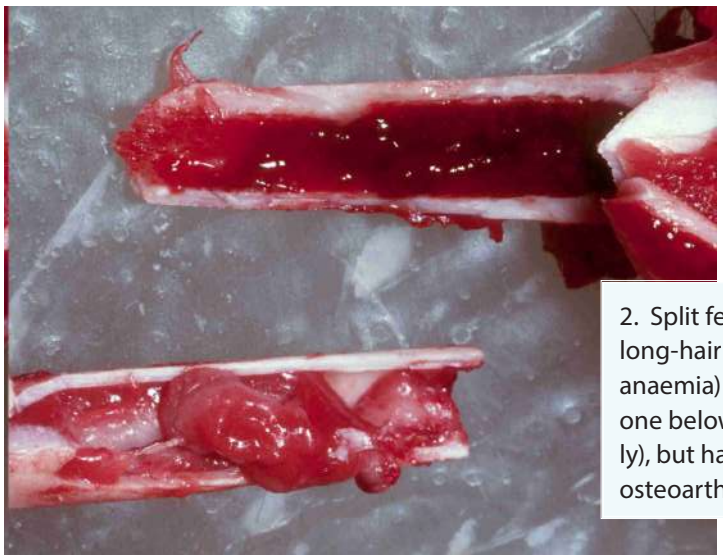
Specific gravity. Diaphyseal marrow in the adult, devoid of cancellous bone, will float in fixative due to its fat content. If it sinks, then the fat has been replaced by erythro- or myelopoiesis, or neoplasia, or it has been metabolised, as seen in cachexia. An example is shown in Fig 4, which shows femoral marrow in an adult koala. This marrow looks pale enough to be predominantly adipocytes and would be expected to float in fixative. Yet it sank, because it consisted mostly of malignant lymphoblasts – a case of lymphoma.

Another useful feature of diaphyseal marrow is the ease with which a cytological smear can be made from its sub-endosteal surface, since this will be where any haemopoiesis would be occurring. Of course, in the koala lymphoma, such a smear would have yielded the diagnosis before sections were cut. I will argue the case for the use of cytology during the autopsy in a separate note.



1. Femurs from 2 old sheep. You should be able to deduce which of these femurs came from the animal with a heavy burden of *Haemonchus contortus* in its abomasum

THE EXPERTS' CORNER



2. Split femurs from two cats. The one above was from a long-hair with massive flea burden (chronic haemorrhagic anaemia) and shows advanced erythroid hyperplasia. The one below has normal-appearing marrow (fattier centrally), but has femoral osteoporosis of disuse (severe chronic osteoarthritis of stifle).

3. Split femur from an old ewe, cachectic as a result of significant tooth loss. After extraction, this marrow sank in formalin, not because of marrow hyperplasia/neoplasia, but because all fat had been replaced by loose mesenchyme (so-called serous atrophy).

4. Split femur from an adult koala. This diaphyseal marrow sank in formalin after extraction, which would have surprised me had not all the lymph nodes been enlarged. A cytological prep was made before fixing the sample, of course.

JVDI IN FOCUS

This month's focus is the latest editorial by Dr. Grant Maxie, our Editor-in-chief, "**Ensuring the ongoing competence of diagnostic veterinary pathologists.**"

J Vet Diagn Invest 2023;35(3)
https://journals.sagepub.com/doi/full/10.1177/10406387231157703

The basic tenets of a quality assurance (QA) program are: say what you do, do what you say, prove it, and improve upon it. The bottom line of a QA program is continuous improvement—if you don't document an activity, how can you measure it and track improvement? The AAVLD Requirements for an Accredited Veterinary Medical Diagnostic Laboratory (https://www.aavld.org/accreditation-requirements-page), which are based on the ISO/IEC 17025:2017 international standard, state in Article 5.2. "Personnel 5.2.1. The laboratory shall **ensure the initial and ongoing competence** of laboratory personnel to do their assigned work using objective criteria. NOTE: Examples of objective criteria include proficiency testing, inter-laboratory comparisons, reference sample panels, replicate testing of quality control materials and continuing education." (bolding, my emphasis).

As a long-time member of the AAVLD Accreditation Committee (1999–2012), and as director (1997–2019) of the AAVLD-accredited Animal Health Laboratory (AHL) at the University of Guelph (Ontario, Canada), a challenge that arose was how to ensure the ongoing competence of pathologists. We do a fine job of proficiency testing (PT) of technicians in the lab, but we have taken on faith, to some extent, that pathologists maintain their competence over time. In the case of technicians, the AHL participates in various external PT programs, including the bacteriology, chemistry/toxicology, endocrinology, and hematology modules of the Veterinary Laboratory Association Quality Assurance Program (VLA-QAP; http://www.vetlabassoc.com/quality-assurance-program/), which is "a global external proficiency testing program specifically designed for

JVDI IN FOCUS

veterinary laboratories and hospitals that perform laboratory testing and require an external confidential means of comparing laboratory's internal test results to those of peers in the veterinary laboratory field."

The American College of Veterinary Pathologists (ACVP) began time-limited certification (https://www.acvp.org/page/MOC) by which "ACVP Diplomates certified in 2016, or since, must meet minimum Maintenance of Certification (MOC) standards to maintain that certification over a 10-year period." The program is based primarily on continuing education (CE) and scholarly activities that are documented and auditable, which is all well and good, especially if these activities translate into improved performance and lead to continued competence, but ongoing competence is not assessed objectively and documented.

When filling pathologist positions in veterinary diagnostic laboratories, we typically start with comprehensive position descriptions, select preferably board-certified pathologists (ACVP, ECVP, JCVP), provide CE opportunities, encourage participation in various rounds, and conduct performance reviews, but actually documenting ongoing competence has been a challenge. The question has come to me a number of times of how we have documented ongoing competence of pathologists at the AHL. Our steps to document this activity were eventually captured in an SOP, and include the following:

- Monthly peer review of diagnostic cases by our team of pathologists—one biopsy and one autopsy case per pathologist per year, and one hematology and one cytology case per clinical pathologist per year. The final report and slides, or images, are circulated to all pathologists. The anatomic pathology review form used is based (with thanks) on a case review format instituted by Dr. Scott Fitzgerald at Michigan State University (East Lansing, MI, USA), and includes case turnround time (TAT) compared to the published TAT, and, as appropriate, adequacy of gross description, quality and quantity of slides, microscopic description, interpretation of IHC slides and/or other ancillary tests, response to client questions, coding of diagnoses, notification of notifiable hazards, record of communication history, billing, report formatting, and, perhaps most importantly, opportunities for improvement. A similar form is used by clinical pathologists.

JVDI IN FOCUS

- Documented participation in histopathology case rounds. At the AHL, these are documented semi-weekly sessions to review interesting and difficult cases—opinions from the group participants may be included in pathology reports to strengthen and support the final diagnosis and comments.

- Participation in the quarterly VLA-QAP histopathology, hematology, and cytopathology modules.

- For anatomic pathologists, caseload and TATs for postmortem and histopathology cases are tracked on a monthly and yearly basis, with tabulated results continuously available for monitoring by all pathologists.

- Semi-annual review by the director of randomly selected anatomic pathology cases (6 autopsies and 4 biopsies) for each pathologist to ensure conformity with a standard report format, billing, and diagnosis coding.

The above process has been refined over the years at the AHL and I think has served us and our clients well. All steps are documented in a written format, and are easily audited, particularly as part of our AAVLD accreditation site visits. Participants find value in the program, and it is sufficiently straightforward and simple that participation is routine and not onerous. Not only does this process meet accreditation requirements, but it has supported excellent service to the clients of the AHL.

The AAVLD Pathology Committee has undertaken several initiatives to provide opportunities for evidence of ongoing competency: pathology guidelines (2009, under review), IHC inter-laboratory comparison (started in 2013, and recommenced in 2022 after having been discontinued for a few years), and histopathology inter-laboratory comparison (to start in 2023). It behooves every veterinary diagnostic laboratory to ensure that it has considered and implemented a quality program for its pathologists—not only in preparation for visits by auditors but in the interest of providing excellent client service.

DIAGNOSTIC EXERCISE

Case #: **201**; Month: **November**; Year: **2022**

Contributors: Luiza Muller Eisenhardt*, veterinary student; Valentina Berté Marcus*, veterinary student; Mariana Martins Flores*, DVM, MS, Doctor in Veterinary Pathology. *Laboratory of Veterinary Pathology, Universidade Federal de Santa Maria (UFSM), Santa Maria, Rio Grande do Sul, Brazil. mariana.flores@ufsm.br

Clinical History: This 10-day-old Quarter horse colt died spontaneously. It had been always lethargic and weak since birth. The foal had fallen down the night before and was not able to get up. It was found dead in the morning

Necropsy Findings: The cranioventral portion of the lungs was firm and dark red (Figure 1). Small amount of purulent exudate was present within the thoracic cavity. Several joints of both hindlimbs and forelimbs were filled with opaque, yellowish exudate with fibrin strands (polyarthritis) (Figure 2). Similar exudate was observed within the urinary bladder, which had a congested mucosa with petechial hemorrhages. The leptomeninges of the brain were also congested and had multifocal and mild accumulation of thick, opaque, yellow exudate (Figures 3 and 4).

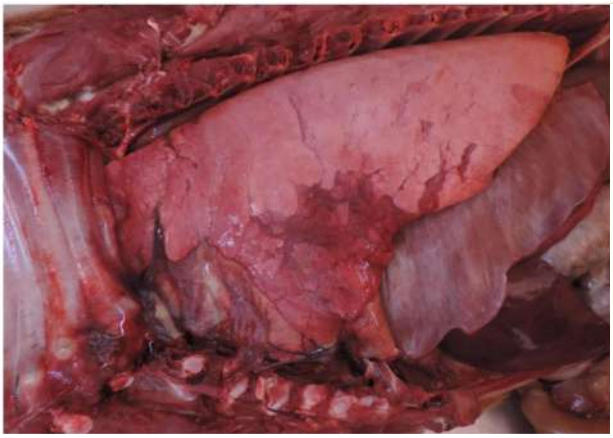


Figure 1

Figure 2

DIAGNOSTIC EXERCISE

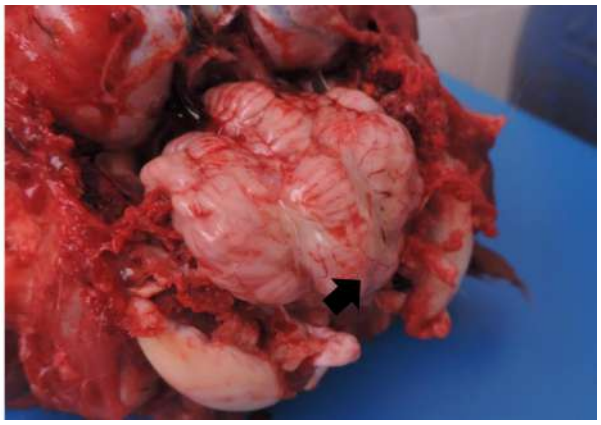


Figure 3

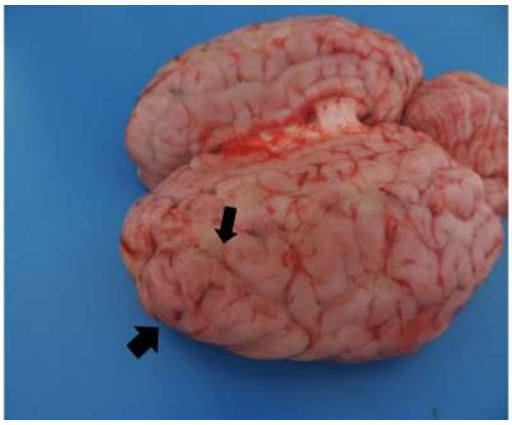


Figure 4

Follow-up questions:

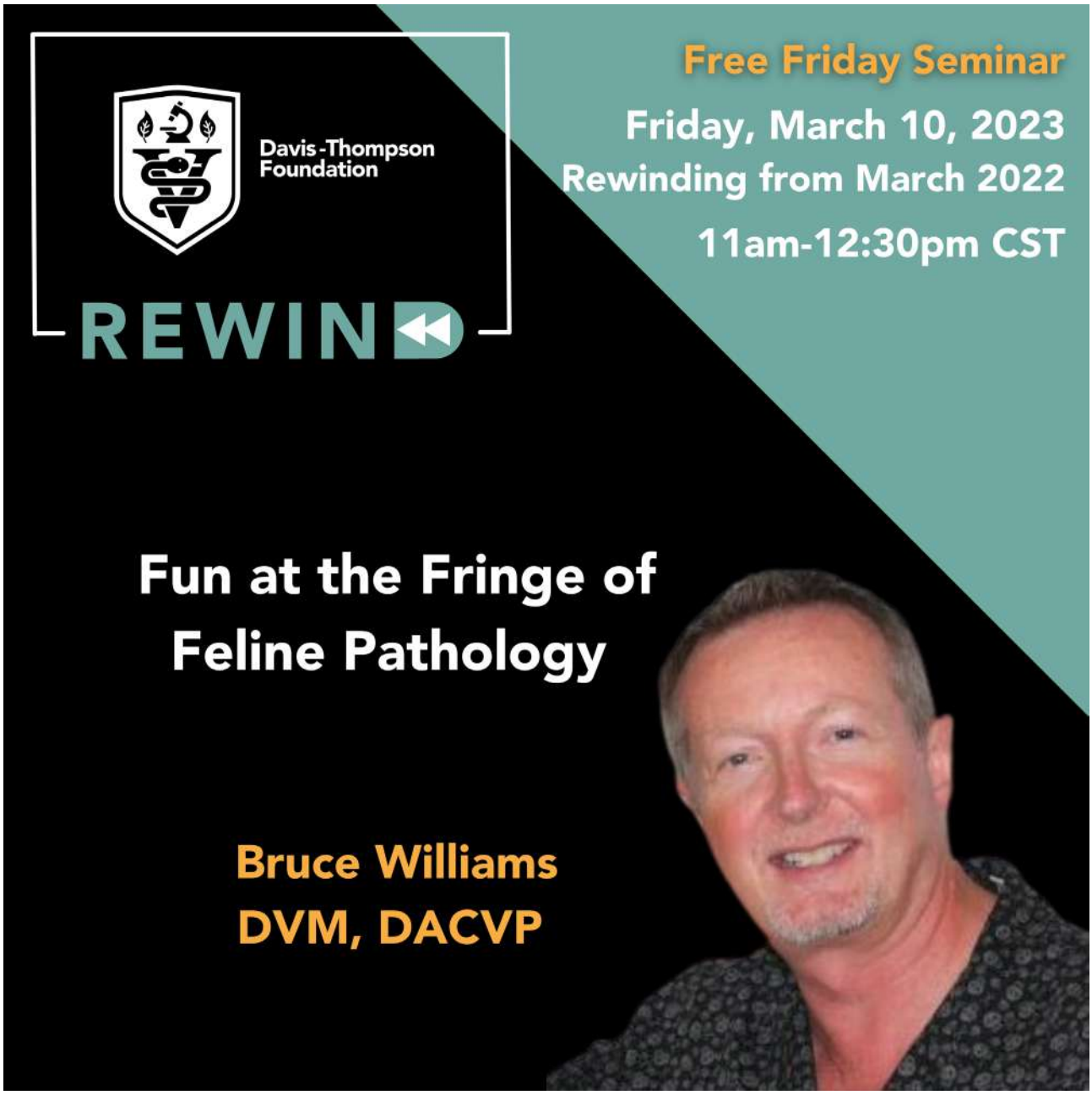
- What is the condition affecting this foal?
- What antemortem laboratory tests could help confirm this diagnosis?
- Can you name some microorganisms that might be involved in this case?
- What is your morphologic diagnosis for the brain, lung and joint lesions?

Associate Editor for this Diagnostic Exercise: Mariana Flores

Editor-in-chief: Claudio Barros

Click here for answers

REWIND: FELINE PATHOLOGY



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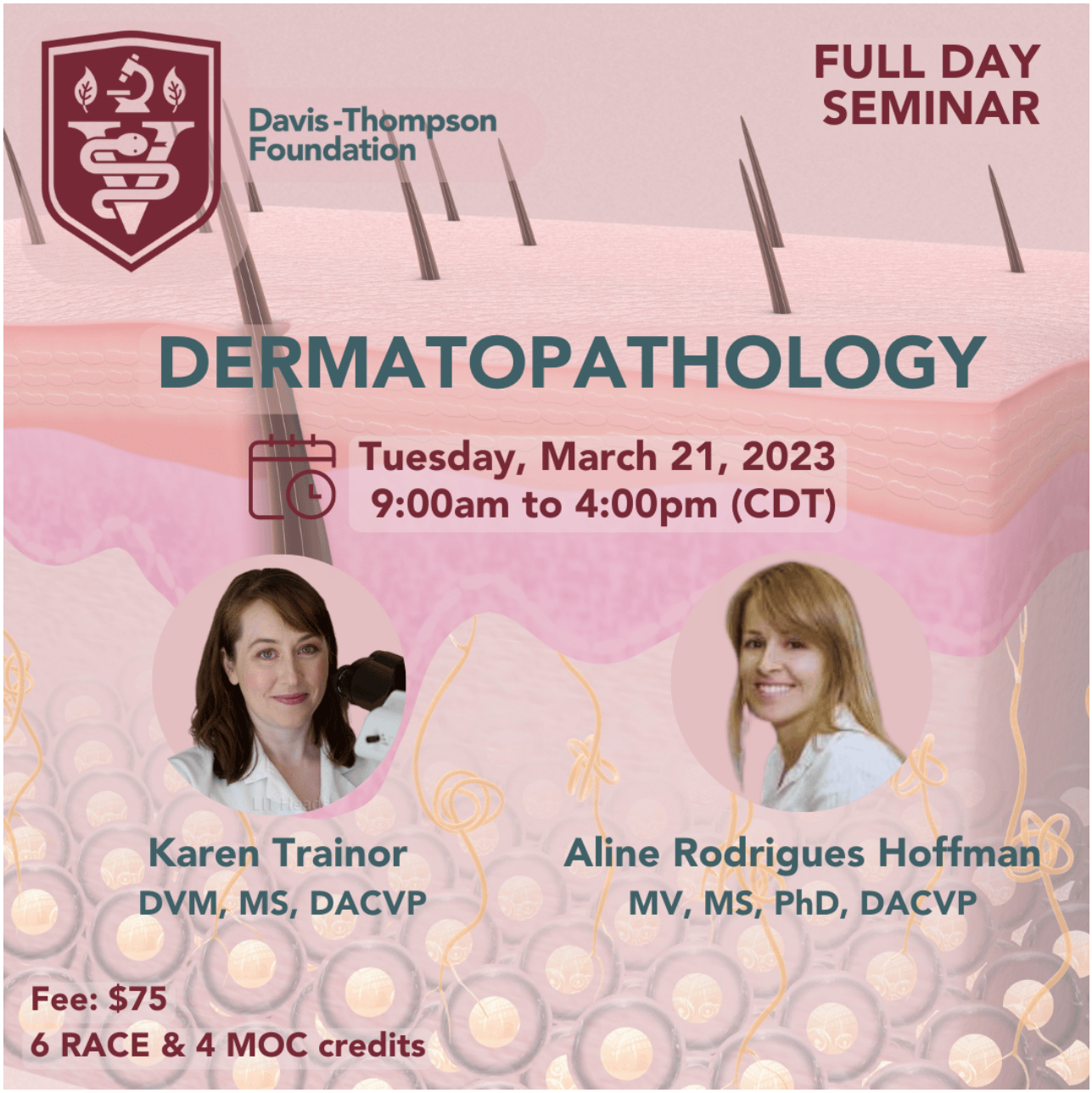
DERMATOPATHOLOGY FULL DAY



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3ER CURSO EN LINEA DE NECROPSIA

HORARIO (CDMX)	Lunes 27	Martes 28	Miércoles 29	Jueves 30
8:45	Inauguración	—	—	—
9:00	Introducción a la Necropsia Laura Romero	Necropsia en Fauna Silvestre y Animales de zoológico Carmen Carmona	Necropsia en Bovinos Lecheros Mario Bedolla	Necropsia en Aves Mireya Juárez
10:30	Necropsia en Peces Rubén López	Necropsia en Animales de Laboratorio Diana Galván	Necropsia en Bovinos de Engorda Luis García	Necropsia en Perros y Gatos Gerardo Salas
12:00	Necropsia en Equinos Francisco Carvallo	Necropsia en Pequeños Rumiantes Alfredo Pérez	Necropsia en Cerdos Elizabeth Rodríguez	Necropsia Forense Ubicelio Martín
13:30	—	—	—	Toma y Envío de Muestras Elizabeth Morales
14:00	—	—	—	Clausura

Click here to register

NAMIBIA WORKSHOP

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SPANISH MEETING

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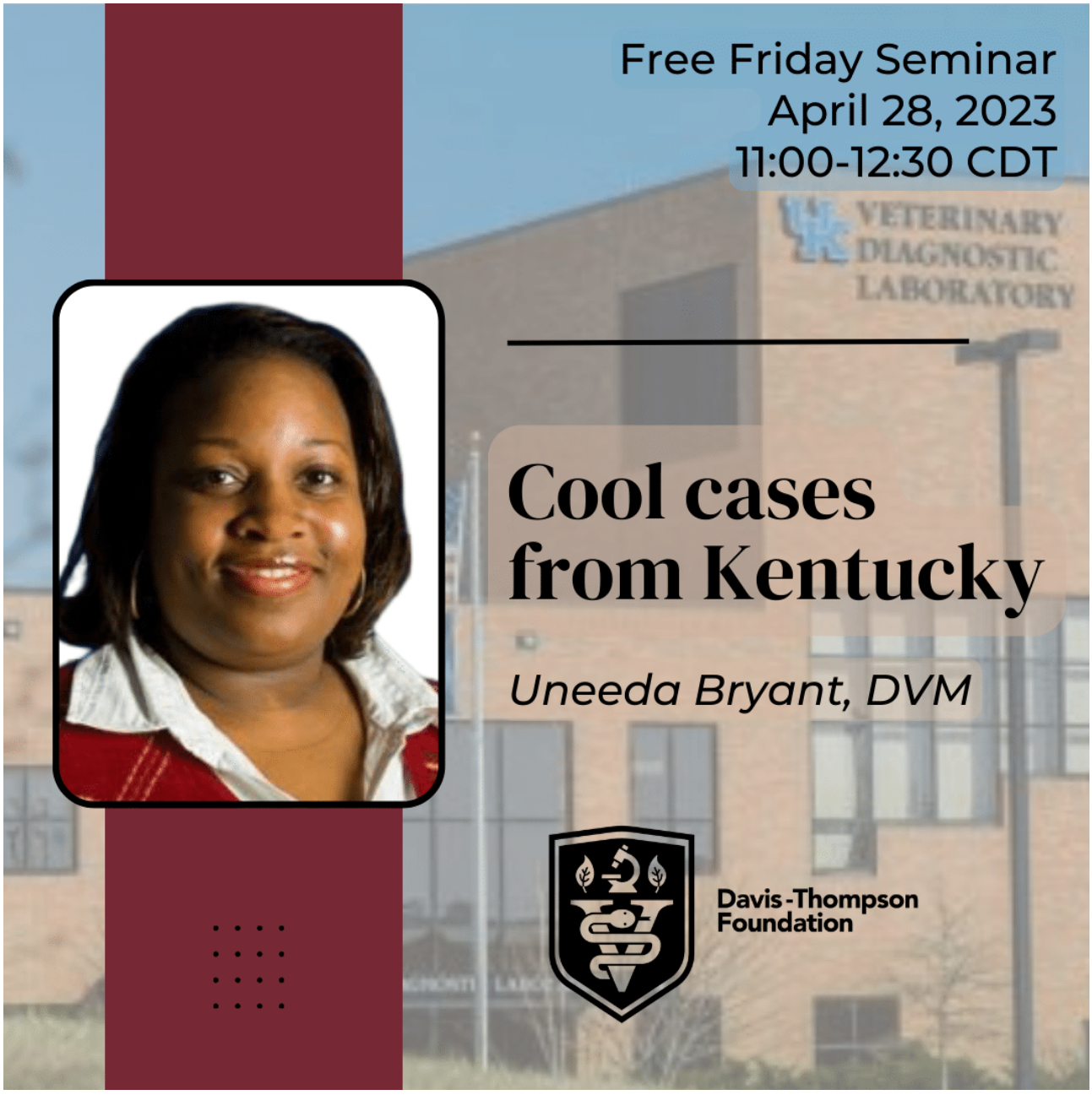
NORTHEASTERN VET PATH CONFERENCE

Click here to register

FREE FRIDAY SEMINAR: COOL CASES FROM KENTUCKY



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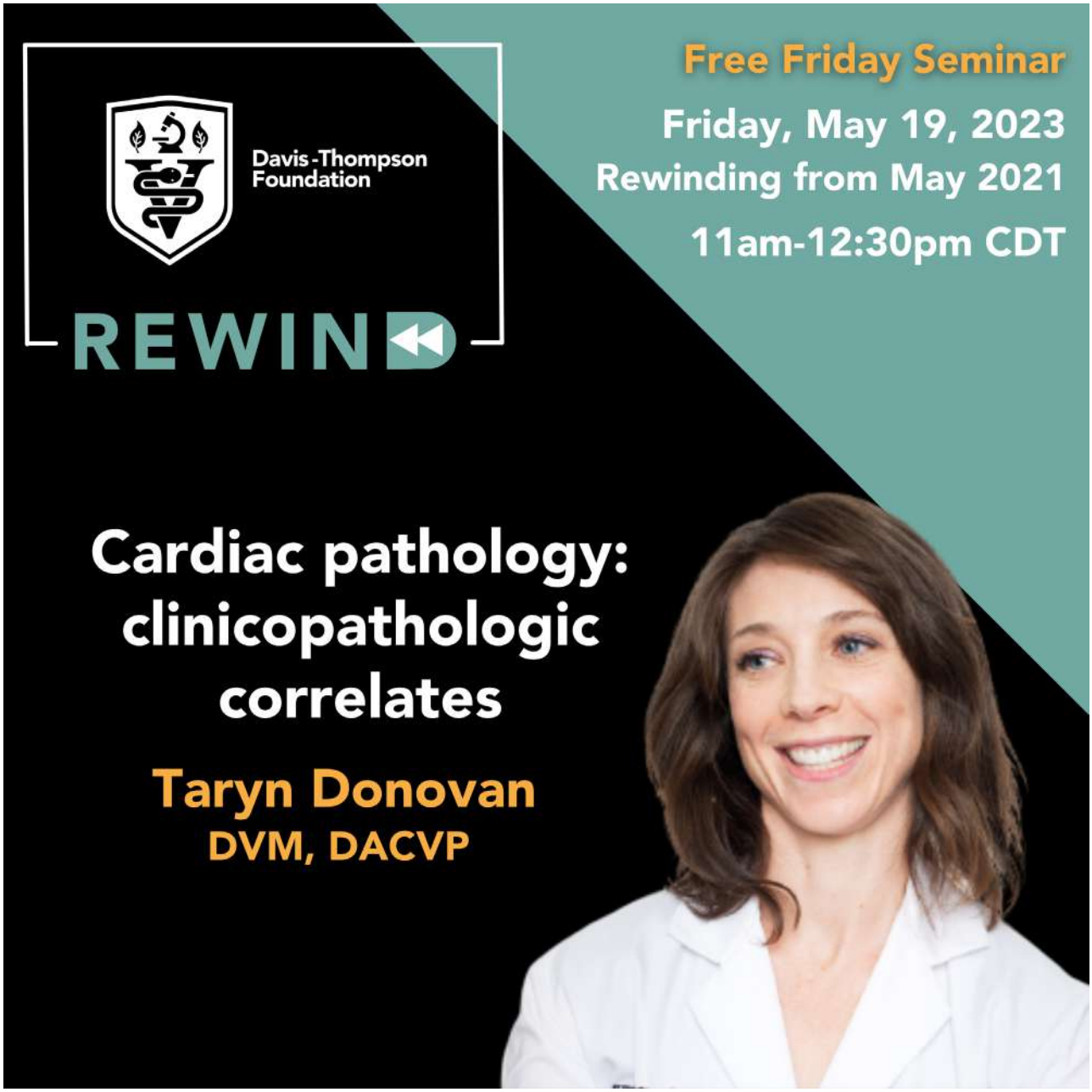
REWIND: CARDIAC PATHOLOGY



Click here to register

DESCRIPTIVE COURSE 2023

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TALLER URUGUAY

Registration information available in our website soon

REWIND: BONE MARROW HISTOPATH

Click here to register

CLIIC COURSE 2023

Click here to register

CLASS & POLA 2023: SAVE THE DATE

Click here for more information

EUROPEAN DIVISION: OCULAR PATHOLOGY

Click here to register

BSTP CORNER

Future BSTP events are due to take place as follows:

14th – 23rd March 2023	**Virtual CES 7 - Infectious diseases of laboratory animals**
11th – 20th July 2023	**Virtual CES 8 - Nervous System**
November 2023	38th Annual Scientific Meeting & AGM
March 2024	CES 9 - Urinary System
July 2024	CES 10 - Digestive System
November 2024	39th Annual Scientific Meeting & AGM
March 2025	CES 11 - Cardiovascular System
July 2025	CES 12 - Endocrine System
November 2025	40th Annual Scientific Meeting & AGM
March 2026	CES 13 - Lymphoid & Haematopoietic Systems
July 2026	CES 14 - Musculoskeletal System & Skin
November 2026	41st Annual Scientific Meeting & AGM

The order of the CES will depend on the availability of high-quality speakers who are world experts in their particular field to present at the relevant meeting. Details of future meetings are correct at the time this booklet is generated, the BSTP will not be held responsible for any changes to dates, topics and venues of these meetings.

BSTP

For registration and more information about the events, visit the BSTP website:
https://www.bstp.org.uk/events/bstp-events/

BSVP CORNER

British Society of Veterinary Pathology
Advancing Education in Veterinary Pathology

Trainee bursaries

Camelid Symposium
BSVP Summer Conference on Wednesday 24th May at Langford, Bristol

To support trainee professional development, the BSVP is pleased to offer two trainees the opportunity to present a review of an interesting case, or summary of their research project at our upcoming Conference on Wednesday 24th May. This will be a 10-minute in-person presentation followed by a live Q&A session.

Successful applicants will receive free registration to the meeting, £200 towards travel and accommodation costs, and free BSVP membership for the 2024 year.

To apply, applicants should submit a written abstract (max 800 words). Research or cases from all species and aetiologies are welcome. Those focused on camelid pathology or farm animals in general are particularly encouraged.

The requirements for the trainee presentations are as follows:
1. The candidates can be of any nationality and work in any country
2. The candidates should be preparing for a pathology board examination (as signed off by their sponsor)
3. Successful candidates are expected to present their work **in person** at the meeting in Bristol
4. The successful candidates will receive free annual membership for the 2024 year
5. The case presentation must be ethically acceptable
6. Previous BSVP award winners from the last 2 years can apply, however applications from non-previous winners will take precedence in the judging
7. Candidates do not need to be current BSVP members

Please submit your abstract via email to BSVP Secretariat (bsvpsecretariat@gmail.com).

We are happy to discuss any aspects of the presentation with you prior to submitting your application, including potential topics, the format, and/or general encouragement to get involved!

All abstracts and sponsor supporting letters must be received by email by **4pm BST Thursday 6th April 2023**. Successful applicants will be notified by 24th April 2023.

Regards,
BSVP Council

Click here for more information

IDEXX CASECONNEXX CORNER

Signalment: 1-year-old, Atlantic spadefish (*Chaetodipterus faber*), unknown sex

Source/ History: Fish from a tank that experienced a mass mortality event. A total of 13 fish were lost (10 dead, 3 euthanized). Unionized ammonia (NH3) levels were elevated at 0.035 and three fish were positive for Cryptocaryon on gill clips. This individual is a fresh dead, euthanized fish. The affected fish externally had erythema prominently on the fins as well as cloudy eyes and listing from side to side. Grossly on necropsy, the gills were pale with intermittent white spots/nodules, but internal organs appeared to have to overt lesions.

Microscopic Description:
Multifocally within the gills, there is moderate hyperplasia of the gill epithelium with blunting and occasional fusion of secondary lamellae. There are moderate numbers of irregularly round, approximately 100 - 250 micrometer in diameter, intraepithelial protozoa with a hyaline wall, deeply basophilic macronucleus that is occasionally crescent shaped, and abundant, granular to vacuolated basophilic cytoplasm containing variable amounts of phagocytosed erythrocytic and cellular debris. Some of the protozoal cysts are ruptured. Multifocally within the interstitium of the primary lamellae, there are moderate numbers of lymphocytes, plasma cells and granulocytes.

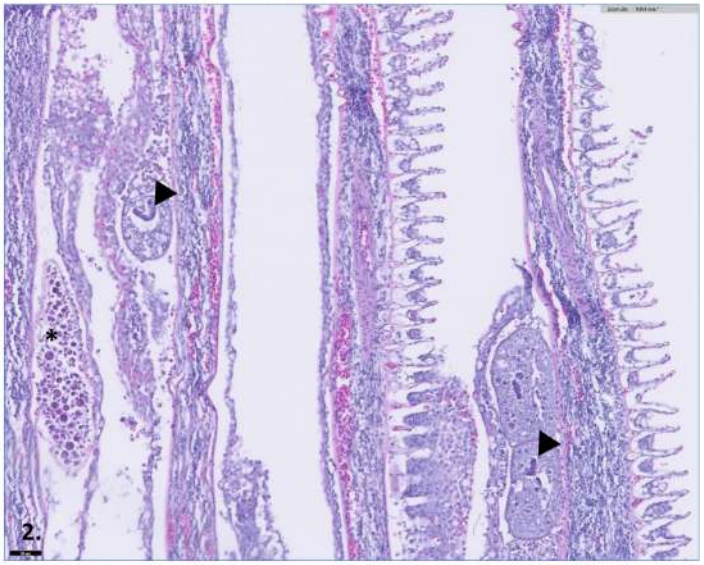
Microscopic Interpretation:
Gills: Moderate, multifocal, chronic epithelial hyperplasia with lymphoplasmacytic and granulocytic branchitis, multifocal secondary lamellar fusion, and moderate numbers of intralesional protozoa (consistent with *Cryptocaryon* spp.)

Comments:
Histologic examination of the gills revealed chronic hyperplastic and inflammatory changes with protozoa consistent with *Cryptocaryon* spp.

Cryptocaryon irritans is a ciliated, protozoan parasite, and the causative agent of the disease commonly referred to as marine "ich" or marine "white spot" disease in wild and cultured marine fishes. Cryptocaryon is known to infect many different fish species and has a direct life cycle with stages on the host and an environmental stage. In freshwater fish, *Ichthyophthirius multifiliis* produces similar lesions.

References: Roberts RJ. Fish Pathology. 4 ed. West Sussex, UK: Wiley-Blackwell; 2012: 309; Karen Terio, Denise McAloose & Judy St. Leger, eds. Pathology of Wildlife and Zoo Animals. 1st ed. San Diego, CA: Academic Press, 2018: 982.

Figure 1. (2X magnification, H&E stain) There is multifocal moderate hyperplasia of the gill epithelium and moderate numbers of irregularly round protozoa.



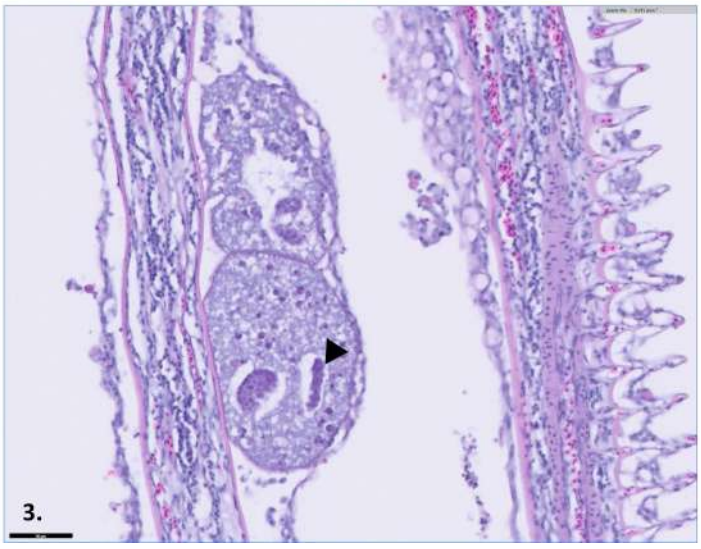


Figure 2 (20X magnification, H&E stain) and Figure 3 (40X magnification, H&E stain) Within the hyperplastic epithelium, are irregularly round, approximately 100 - 250 micrometer in diameter, intraepithelial protozoa with a hyaline wall, deeply basophilic macronucleus that is occasionally crescent shaped (arrowheads), and abundant, granular to vacuolated basophilic cytoplasm containing variable amounts of phagocytosed erythrocytic and cellular debris (asterisk).

Case by
Joseph Malatos, DVM, DACVP

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IDEXX

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LCPG & DTF ACTIVITIES IN LATIN AMERICA

Country	Name of Seminar	Dates	Place/University	Speakers	Organizers
Argentina	XIII RAPAVE/17º Argentinean Seminar of C.L. Davis - S.W. Thompson Foundation.	Oct 4-6	Facultad de Ciencias Agrarias y Veterinarias, Universidad Católica de Salta	Fernando Dutra David Driemeier, Francisco Uzal	Juan Micheloud
Brasil	Brazilian Symposium of the C.L. Davis - S.W. Thompson Foundation and National Pathology Meeting - ENAPAVE	Jul 17-20	João Pessoa, Paraíba, - venue to be determined	TBD	ABPV (Associação Brasileira de Patologia Veterinária)
	Latin American ROADSHOW of the C.L. Davis - S.W. Thompson Foundation (Brazil, Chile, Mexico, Peru)	Oct 23-Nov 3	TBD	Marti Pumarola	Francisco Carvallo, Francisco Uzal
Chile	Latin American ROADSHOW of the C.L. Davis - S.W. Thompson Foundation (Brazil, Chile, Mexico, Peru)	Oct 23-Nov 3	TBD	Marti Pumarola	Francisco Carvallo, Francisco Uzal
	8th Chilean meeting of veterinary histopathology	TBD	TBD	TBD	Carlos Flores
México	Latin American ROADSHOW of the C.L. Davis - S.W. Thompson Foundation (Brazil, Chile, Mexico, Peru)	Oct 23-Nov 3	TBD	Marti Pumarola	Francisco Carvallo, Francisco Uzal
Costa Rica	Descriptive Veterinary Pathology Course (Spanish version)	Dec 15-18	Universidad Veritas, Heredia	Jey Koehler, Ana Alcaraz, Patty Pesavento	Roberto Olivares
Guatemala	Workshop on pathology and mechanisms of diseases / IV Seminar of C.L. Davis - S.W. Thompson Foundation	Aug 7-10	Universidad San Carlos de Guatemala, Guatemala City	Corrie Brown, Javier Asin, Francisco Carvallo	Deborah Rodriguez
Nicaragua	1st Nicaraguan meeting of the C.L. Davis - S.W. Thompson Foundation	Aug 20-21	Laboratorio de Morfología, Universidad de Ciencias Comerciales, Managua	Francisco Carvallo, Guillermo Rimoldi	Jose Lara, Cristina Toledo
Perú	Latin American ROADSHOW of the C.L. Davis - S.W. Thompson Foundation (Brazil, Chile, Mexico, Peru)	Oct 23-Nov 3	TBD	Marti Pumarola	Francisco Carvallo, Francisco Uzal
Uruguay	9th Uruguayan seminar of the C.L. Davis - S.W. Thompson Foundation	TBD	Facultad de Veterinaria, Universidad de la República, Montevideo	Susan Stover, Laura Peña	José Manuel Verdes, Federico Giannitti, Carolina Matto, Fernando Dutra
	Necropsy and gross pathology workshop of the C.L. Davis - S.W. Thompson Foundation and 50th Uruguayan Buiatrics Meeting	Jun 10	Estación Experimental Dr. Mario A. Cassinoni, Facultad de Agronomía, Paysandú	Carolina Matto, Franklin Riet Correa, Fernando Dutra, Rodolfo Rivero, Jose Manuel Verdes, Lourdes Adrien, Francisco Uzal	Adrien Lourdes

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Click here to register for individual seminars

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LCPG Externship in Health, Pathology, & Production of Tilapia, 2022

by DMV Ezequiel Salas (San Jose, Costa Rica), Award Winner 2022

Currently, there are great challenges for professionals in charge of animal health, especially in tilapia production in Latin America.

For this reason, the externship focused on production and pathology allowed me to acquire new knowledge, optimizing the management and importance of a breeding program and production animal health plan.

Among the relevant aspects of this externship, it can be highlighted that the production of tilapia has a great economic boom worldwide. Participating in this scholarship allowed me to update my knowledge for better production management, as is the case of the diseases that affect the health of tilapias, as well as emerging ones, which may have an impact on the industry.

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This knowledge was strengthened through virtual diagnostic activities, tilapia health research, and pathology in CORPAVET, Colombia. In addition, operational management activities such as feeding, biometrics, egg collection and selection criteria for the generation of future families were done in the hatchery of Spring Genetics in Miami, FL, US.

For me, the externship was an enriching experience in many aspects. Not only in my field of work but also on a personal level. Working with other professionals from various disciplines allowed me to enrich the knowledge acquired. It was very important to consider the points of view and experiences of those professionals with whom I worked. Now, I have the moral and ethical responsibility to carry out a job in which I contribute to the knowledge acquired for the benefit of the industry. In addition, I launch a challenge to the new generations of professionals so that they take advantage of these spaces to grow and develop professionally. In this way, they can contribute to the development of our Latin American countries.

Finally, I want to give my sincere thanks to LCPG, Spring Genetics Bechnmark, CORPAVET, and MSD Animal Health, all of them sponsors without whom this type of externship would not be possible.

Are you interested in doing an externship?

Click here to learn more about the opportunities offered by the LCPG

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See next pages for detailed information about how to become a member

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Help Latin American trainees and pathologists: Join the LCPG

Dear Davis/Thompson foundation (DTF) members and followers,

If you are interested in helping improve access to education in the field of veterinary pathology for veterinarians and students in Latin America, this message is for you.

The "Latin Comparative Pathology Group" (https://davisthompsonfoundation.org/latin-comparative-pathology-group/) is a division of the DTF whose main objective is to promote the education of veterinary pathology in Latin America. This objective is achieved through the organization of seminars, workshops and courses taught in English, Spanish and Portuguese in Latin American countries, and the granting of scholarships to veterinarians and students residing in the region to facilitate attendance at courses and congresses in the United States (for example, the ACVP annual meeting). In addition, the group helps establish professional connections for internships, and guides the application process for Latin veterinarians to residency and graduate programs in veterinary pathology.

These activities are possible thanks to the financial contribution of the members of the group themselves, who pay an annual membership whose current rates vary from US$ 15 to US$ 50 depending on whether the applicant is a student or professional and where they live.

The best way to help is to become a member. For this, go to the DTF website to make the corresponding payment by credit card (https://1drv.ms/w/s!ArSfd33WDOc9gsY6Ti7c3OUceoQ0mg?e=J2shyf) and then send an email to lcpgsecretary@gmail.com to confirm your membership.

If you read this far, don't miss this opportunity to help us. Members of any nationality are welcome (being Latino is not required).

Thank you,

LCPG Council Members

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Ayude a los estudiantes y patólogos latinos: Únase al LCPG

Estimados miembros y seguidores de la Fundación Davis/Thompson (DTF),

Si están interesados en ayudar a mejorar el acceso a la educación en el campo de la patología veterinaria de veterinarios y estudiantes de Latinoamérica, este mensaje es para ustedes.

El "Grupo Latino de Patología Comparada" (https://davisthompsonfoundation.org/latin-comparative-pathology-group/) es una división de la DTF cuyo principal objetivo es promover la educación de la patología veterinaria en Latinoamérica.

Este objetivo es alcanzado a través de la organización de seminarios, talleres y cursos dictados en inglés, español y portugués en países de Latinoamérica, y el otorgamiento de becas a veterinarios y estudiantes residiendo en la región para facilitar la asistencia a cursos y congresos en Estados Unidos (por ejemplo, el congreso anual del ACVP). Además, el grupo ayuda a establecer conexiones profesionales para realizar pasantías, y guía en los procesos de aplicación de veterinarios latinos a programas de residencia y posgrado en patología veterinaria.

Estas actividades son factibles gracias al aporte financiero de los propios miembros del grupo, que abonan una membresía anual cuyas tarifas actuales varían de US$ 15 a 50, dependiendo de si el aplicante es estudiante o profesional y de su sitio de residencia.

La mejor manera de ayudar es hacerte miembro. Para esto ingresa al sitio web de la DTF para hacer el pago correspondiente con tarjeta de crédito (https://1drv.ms/w/s!ArSfd33WDOc9gsY6Ti7c3OUceoQ0mg?e=J2shyf) y luego envía un correo a lcpgsecretary@gmail.com para confirmar tu membresía.

Si leíste hasta acá, no dejes pasar esta oportunidad de ayudar. Los miembros de cualquier nacionalidad son bienvenidos (no es necesario ser latino).

Muchas gracias,

Miembros del consejo del LCPG

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Ajude estudantes e patologistas latinos: junte-se ao LCPG

Prezados membros e seguidores da Fundação Davis/Thompson (DTF),

Se você está interessado em ajudar a melhorar o acesso à educação na área de patologia veterinária para veterinários e estudantes na América Latina, esta mensagem é para você.

O "Grupo Latino de Patologia Comparada" (https://davisthompsonfoundation.org/latin-comparative-pathology-group/) é uma divisão da DTF cujo principal objetivo é promover a educação em patologia veterinária na América Latina.

Este objetivo é alcançado por meio da organização de seminários, workshops e cursos ministrados em inglês, espanhol e português nos países latino-americanos e pela concessão de bolsas de estudos para médicos veterinários e estudantes residentes na região para facilitar a participação em cursos e congressos nos Estados Unidos (por exemplo, a reunião anual do ACVP). Além disso, o grupo ajuda a estabelecer conexões profissionais para estágios e orienta o processo de inscrição de veterinários latinos em programas de residência e pós-graduação em patologia veterinária.

Essas atividades são possíveis graças ao aporte financeiro dos próprios membros do grupo, que pagam uma anuidade cujas taxas atuais variam de US$ 15 a US$ 50, dependendo se o candidato é estudante ou profissional e onde mora. A melhor maneira de ajudar é se tornar um membro. Para isso, acesse o site da DTF para efetuar o pagamento correspondente com cartão de crédito (https://1drv.ms/w/s!ArSfd33WDOc9gsY6Ti7c3OUceoQ0mg?e=J2shyf) e em seguida envie um e-mail para lcpgsecretary@gmail.com para que sua adesão seja confirmada.

Se você leu até aqui, não perca esta oportunidade de nos ajudar. Membros de qualquer nacionalidade são bem-vindos (não é necessário ser latino).

Obrigado,

Membros do Conselho do LCPG

MISCELLANEOUS ANNOUNCEMENTS

Special Edition on South American Camelids in Veterinary Research Communications

South American Camelids are composed by two genera and four species, two of them wild, vicuñas (*Vicugna vicugna*) and guanacos (Lama guanicoe), and two domestic, llamas (*Lama glama*) and alpacas (*Lama pacos*). We invite researchers in South American Camelids to submit their work for the Special Edition on Diseases of South American Camelids in the Veterinary Research Communications. The subjects of reference include but are not limited to production medicine of South American Camelids, infectious, and non-infectious diseases, and emerging pathogens, zoonotic or high-impact pathogens, among others. Full papers, brief reports, and review articles will be considered, and all manuscripts will be subjected to the routine peer review system of the journal. The deadline for an abstract is March 31, 2023. Authors of accepted abstracts will be notified of acceptance by May 31, 2023, and full submissions will be expected by July 31, 2023

If you are unsure if your research is suitable for the special Edition, please contact the Guest Editor directly, Dr. Macias-Rioseco at mmaciasrioseco@ucdavis.edu

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MISCELLANEOUS ANNOUNCEMENTS

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Look them up!

Image IDs: F63602 to F64600
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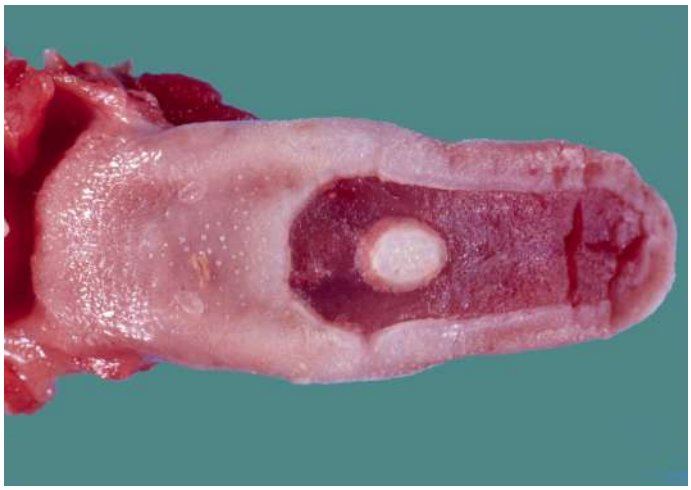


F63614: Epitheliogenesis imperfecta, tongue, pig

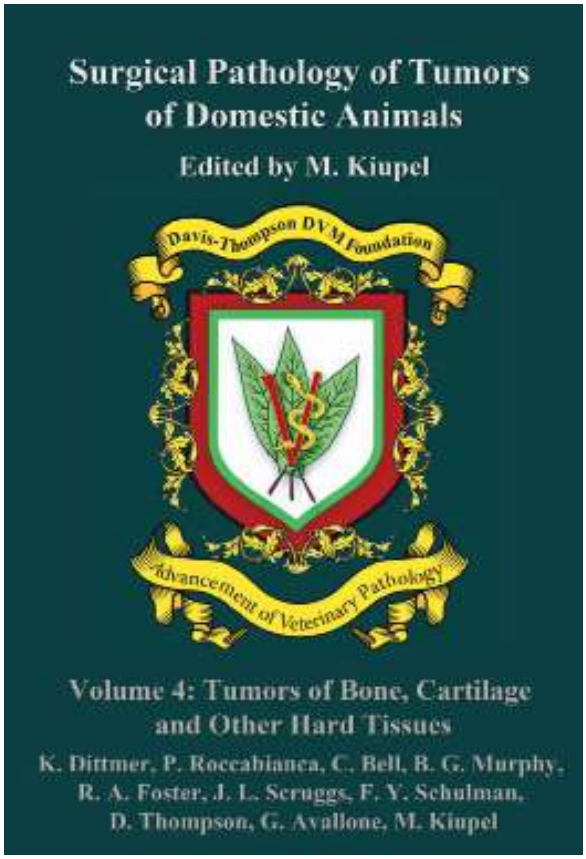
F63675: Gastric gasterophilosis, stomach, horse

MISCELLANEOUS ANNOUNCEMENTS

Please contact one or more of the following if you are interested in volunteering:

-Dr. Koehler: jaw0007@auburn.edu
-Dr. Uzal: fauzal@ucdavis.edu
-Dr. Williams: bruce.h.williams.dvm@gmail.com

MISCELLANEOUS ANNOUNCEMENTS



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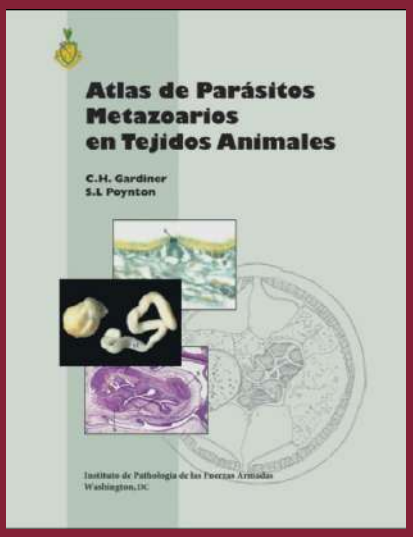
Davis-Thompson Foundation Pathology Externship

Since 1980, the Davis-Thompson Foundation lab sites have hosted more than 125 veterinary students at 8 participating diagnostic laboratories. These students usually have a strong interest in pathology itself or zoo or poultry medicine that require a strong pathology background. The Foundation is always interested in having veterinary students apply for an externship and we would like to add more externship sites that do not usually have veterinary students, to help increase their interest and knowledge of pathology with some off-campus experience. For more information, contact Dr. Jim Britt, **jobritt@sbcglobal.net;** 501-912-1449.



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