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THE DAVIS-THOMPSON FOUNDATION NEWSLETTER

June

INSIDE THIS ISSUE

Monthly cover photograph winners:

Josué Campos[1], Roberto Olivares[1], Laura Bass[1], Alicia Rojas[2], Christian Fonseca[2].

1. Department of Pathology and Histology, San Francisco de Asís School of Veterinary Medicine and Surgery, Veritas University. 2. Laboratory of Medical Helminthology, Faculty of Microbiology, University of Costa Rica

Description: Carmin´s stain of *Platynosomum illiciens*, a liver fluke found in a cat with fibrosing cholangiohepatitis and cholecystitis (confirmed by PCR and DNA sequencing). The fluke has oral and ventral suckers, two symmetrical vitellaria, a long uterus, two testis and one ovary.

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

MESSAGE FROM THE CEO

Dear colleagues,

Welcome to the June issue of the Davis-Thompson Foundation Newsletter, courtesy of our great Managing Editors, Javier Asin and Jean Leal. Thank you, Javier and Jeann.

This is a fantastic issue with a large amount of information on training activities and much more. To start with, another very successful version of the 2023 Descriptive Veterinary Pathology Course is coming to an end this week. On the same line, remember that the Current Literature and Image Interpretation Course (CLIIC; formerly "the Gross Course") and the Current Laboratory Animal Science Seminar (CLASS) and Pathology of Laboratory Animals (POLA) courses come up very soon. Both courses are a must for trainees preparing for board certification.

A new addition to the 2023 calendar of training activities is a hands-on workshop on necropsy of racehorses, coming up on August 18-19. This course was developed in response to the new rule by the US Horseracing Integrity and Safety Authority (HISA) establishing that all horses that die at a racetrack under the jurisdiction of HISA must undergo a necropsy examination. If you work at a laboratory that receives racehorses for necropsy, this course is for you. Seats are limited; please consider registering soon.

Last but not least, this month we are also proud to welcome the Australian Society for Veterinary Pathology (ASVP) corner in our newsletters. In this section, we reproduce a selection of cases from the March 2023 edition of The Scope, the newsletter of the ASVP. We hope you enjoy this great material.

Looking forward to see many of you in one of our upcoming training activities.

Paco Uzal

Chief Executive Officer
Davis-Thompson Foundation

MESSAGE FROM THE CFO

Noah's Slidebox Passes Major Milestone and Deploys a More Efficient Search Function

In May 2023, the Foundation's newest online endeavor, Noah's Slidebox, became the largest repository of online educational whole slides, eclipsing the 1700 slides contained within the JPC's Online Wednesday Slide Conference, and its cousin, the Veterinary Systemic Pathology Online (VSPO), at 925 slides.

Continuing to grow by an average of ten slides each day from a wide range of slide seminars run by a wide variety of organizations, including the Foundation, AAVLD, ACVP, AAZV, and various universities, each slide is accompanied by a writeup ranging from one to five pages, as it was originally presented. This collection contains numerous representations of more common entities, and a growing number of cases from laboratory animals, zoo and wildlife species, exotics, and invertebrates.

In response to a number of inquiries, we have also upgraded the utility of the search function. If you click on "View/Search All Slides" on the Noah's Slidebox main page, you can string search any diagnosis and retrieve a specific listing of cases matching your keyword(s). (A search below shows the part of a page of the 45 cases currently retrievable under the search word "toxicosis").

Digital Slide Archive

Show entries Search: TOXICOSIS

WSI	Year	Case #	HistoDx	Case Info	Details
WSI	2023	1	Pyrethroid toxicosis	Writeup	Details
WSI	2017	45	Marked hemolytic anemia and secondary blood dyscrasi...	Writeup	Details
AAVLD					
WSI	2020	11	Bromethalin toxicosis	Writeup	Details
WSI	2020	15	Monensin toxicosis	Writeup	Details
WSI	2012	14	Myelopathy due to selenium toxicosis	Writeup	Details
WSI	2011	3	Xylitol toxicosis	Writeup	Details
AAZV					
WSI	2014	1	Hippocampal pyramidal cell degeneration and loss due t...	Writeup	Details
Davis-Thompson					
WSI	2023		Ionophore toxicosis	Writeup	Details
NEVPC					
WSI	2016	27	Amanitin toxicosis	Writeup	Details
WSI	2006	1	Domoic acid toxicosis	Writeup	Details

MESSAGE FROM THE CFO

If you haven't visited Noah's Slidebox, give it a try. We bet you are going to be amazed (and learn something, too!) Remember, this and the many other FREE initiatives provided by the Foundation is a great reason to become an individual member (or convince your organization to become a university or corporate member) and support the great work that the Foundation is doing!

Bruce Williams

Chief Financial Officer
Davis-Thompson Foundation

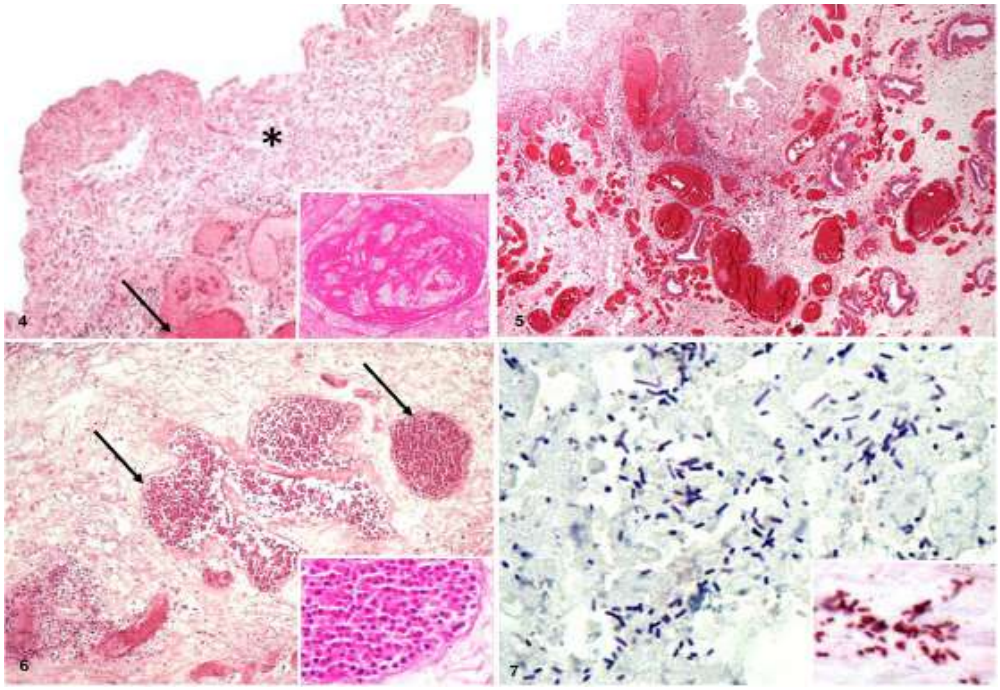
Click here to visit Noah's Slidebox

JVDI IN FOCUS

Our June focus is an article appearing in the May issue: "**Postpartum clostridial gangrenous metritis in 12 dairy goats in France**" by Laëtitia Dorso, Christophe Chartier, Michel R. Popoff, Cyrille Tesson, Jérôme Despres, Francisco A. Uzal.

J Vet Diagn Invest 2023;35(3). https://journals.sagepub.com/doi/abs/10.1177/10406387231161508

Clostridial infections in goats have been associated frequently with enteric diseases or gas gangrene but very rarely with the reproductive system. We describe here 12 cases of fatal postpartum gangrenous metritis in does associated with infection by several clostridial species. Clinically, these cases were characterized by rapid onset of hyperthermia followed by death after kidding. On postmortem examination, the uteri appeared to be necrotic and were hemorrhagic and edematous. Microscopically, the uteri had diffuse coagulative necrosis, edema, hemorrhage, and fibrinous thrombi with intralesional gram-positive rods. *Clostridium perfringens* was isolated from 7 of 9 uterine samples cultured, and *C. perfringens*, *C. septicum*, *C. novyi*, or *C. chauvoei* were demonstrated by immunohistochemistry (IHC) in the 5 cases examined. IHC for *Paeniclostridium sordellii* was negative in all 5 cases. PCR performed on 3 of the *C. perfringens* isolates was positive for alpha toxin and perfringolysin, identifying these isolates as type A. Clostridial infection should be considered in cases of postpartum gangrenous metritis of does.



Figures 4–7. Uteri of goat does with gangrenous metritis. **Figure 4**. Coagulative necrosis of endometrium (*); some vessels are thrombosed (arrow). Inset: higher magnification of thrombus. H&E. **Figure 5.** Severe congestion and hemorrhage of the endometrium. H&E. **Figure 6.** Edema of the endometrium; blood vessels with leukostasis (arrows). Inset: higher magnification of leukostasis. H&E. **Figure 7.** Large number of gram-positive rods in the endometrium. Gram stain. Inset: rods stained with *Clostridium chauvoei* IHC.

The Journal of Veterinary Diagnostic Investigation is the official journal of the American Association of Veterinary Laboratory Diagnosticians. The mission of the Journal is to educate by informing readers of progress in veterinary laboratory medicine and related fields of endeavor. The key objectives of the JVDI are to promote the science of veterinary laboratory medicine and the betterment of animal and public health. JVDI fully supports diversity, equity, and inclusion in our publishing activities.

Editor-in-chief, Dr. Grant Maxie / https://journals.sagepub.com/home/VDI

DIAGNOSTIC EXERCISE

Case #: 211; **Month:** April; **Year:** 2023

Contributors: Contributors : Joie Lin, DVM, UC Davis School of Veterinary Medicine, Class of 2022, jvlin@ucdavis.edu; Talia S. Wong, VMD, Resident, Anatomic Pathology, Zoo and Wildlife UC Davis School of Veterinary Medicine, taswong@ucdavis.edu

Clinical History: This 8-week-old, female intact, potbelly piglet had been recently rescued (6 weeks previously). She presented to the VMTH Livestock Medicine Service for dyspnea and was also inappetant and lethargic. No other medical history was available, except that a littermate had passed the week previously from unknown causes. The morning of presentation, she was found in severe respiratory distress. On physical exam, she was dyspneic and tachypneic (R=120) with cyanotic mucous membranes. Flow-by oxygen therapy was initiated with no improvement of clinical signs. Euthanasia was elected after further diagnostics were declined.

Necropsy Findings: A 1.4 kg, 8-week-old female intact piglet was presented approximately 2 hours after euthanasia. Black granular debris was noted multifocally along the flanks (presumed flea dirt). Mild mucoid discharge leaked from the medial canthi of both eyes. The nasal planum was blue tinged. The thoracic cavity contained approximately 30 ml of turbulent, pale tan fluid that filled both sides of the apparently complete mediastinum. All lung lobes were collapsed, wet, and heavy, and sunk in 10% buffered formalin. The heart weighed 14.1 g (1.01% of body weight) with a right ventricular free wall thickness, left ventricular free wall thickness, and interventricular septal thickness of 1.5 mm, 4.0 mm, and 4.0 mm, respectively. There was 20 ml of watery slightly opaque effusion in the abdominal cavity. Lacey, soft, pale tan to white strands (fibrin) coated the diaphragmatic, hepatic, and intestinal surfaces. The liver weighed 40.0 g (2.86% of body weight).

DIAGNOSTIC EXERCISE

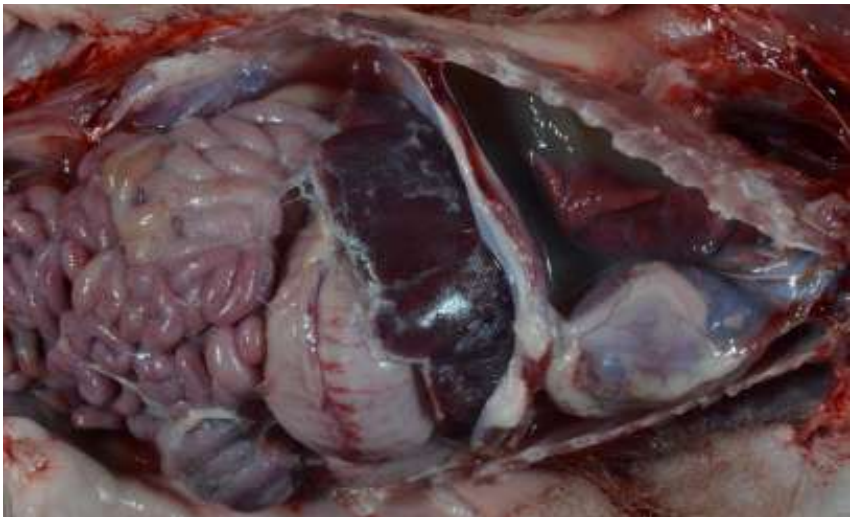


Figure 1. Fibrin strands stretched across the serosal and peritonealsurfaces of the abdomen. The thoracic and abdominal cavities contain slightly viscous, opaque tan fluid.

Figure 2. A subcapsular blood clot covers the cranial pole of the kidney.

Follow-up questions:
- What are your morphologic diagnoses?
- What is your diagnostic plan?
- Potential causes?

Associate Editor for this Diagnostic Exercise: Patricia Pesavento

Editor-in-chief: Claudio Barros

Click here for answers

SEMINAR REVIEWS

NEVPC COMES BACK IN PERSON AND PACKS THE HOUSE!
by Bruce Williams

On 15 and 16 April, the Northeast Veterinary Pathology Conference returned to an in-person format with a brand-new venue in downtown Washington DC – the Smithsonian's National Zoo and Conservation Biology Institute. Hosted by the NZP's pathology staff of Dr. Neel Aziz, Dr. Kali Holder, and Dr. Lauren Peiffer, and held at the beautiful glass-enclosed Conservation Pavilion right in the center of "Amazonia", the course covered a day and a half, a keynote lecture, and over 35 slide presentations. There were 70 attendees.

Aptly and efficiently directed by Dr. Kelsey Fiddes of the Joint Pathology Center, the course started promptly at 09:00 on Saturday morning with a two-hour keynote on emerging viral diseases by Dr. Patty Pesavento, Professor of Pathology and Chair of the Department of Pathobiology at the University of California at Davis. At 11:00, she and Foundation President Dr. Jey Koehler moderated the first 10-minute case presentations.

The Conservation Pavilion provide a delightful state of the art venue, right in the heart of the park.

SEMINAR REVIEWS

Trainees and pathologists from up and down the East Coast presented cases along the two broad themes of infectious and vascular diseases. Saturday was a glorious sunny day, with the attendees turned out into the park for an hour and a half of eating, visiting, and seeing the park, before they reconvened for the remainder of the day's presentations.

As is the case with all of the Foundation's slide seminars, adjournment of the day's scientific presentation was followed by a social event, at Fat Pete's barbecue at Cleveland Park, where good food and beverage abounded.

Seminars began bright and early on Sunday, before concluding shortly before noon. Dr. Aziz took a large crowd on a behind-the-scenes tour of the zoo to wrap up the day's program.

Plans are already underway for next year's NEVPC – make your plans to join us in DC in 2024 and bring a great case to share!

Fat Pete's barbecue provide a chance for participants to network, socialize, and enjoy great food!

SEMINAR REVIEWS

2023 WEST COAST VETERINARY PATHOLOGY CONFERENCE
by Paco Uzal

The 2023 West Coast Veterinary Pathology Conference (WCVPC) was held on May 5 and 6 at UC Davis. For the first time since the beginning of the COVID pandemic, the WCVPC was conducted in person. The topic this year was pathology of the liver. The organizing committee was composed of Drs Kevin Keel, Jose Vilches Moure, Noel Dybdal and Chrissy Eckstrand. The impeccable organization was supported by a group of enthusiastic students that performed myriad activities, including arranging the food for breaks, ordering lunches and scheduling the social.

A total of 67 attendees followed enthusiastically the presentation of 31 cases and three gripping invited presentations by Drs Adeyemi Adedeji (Clinical pathology changes in hepatobiliary abnormalities: an interface of standard and toxicologic pathology), Steven Laing (The pathologist in drug development: liver injury as a case example), Patricia Pesavento and Dan Rudmann (Patterns and pathways of hepatitis). Cases were presented by pathology residents, veterinary students, other trainees and faculty. It was very encouraging seeing back to back presentations by experienced pathologists and veterinary students in a friendly and collegial environment.

L to R: Drs. Vilches Moure, Dybdal, Adedeji, Rudmann, Laing, Pesavento, Keel, & Eckstrand

The 2024 WCVPC will be held on May 3 and 4 at UC Davis and will be organized together with the Davis Thompson Foundation as it used to be several years ago. While the organizing committee and venue will remain the same, the Foundation will provide organizational support such as conference registration and access to proceedings and slides.

SEAPV 2023 PRE-MEETING WORKSHOP

Click here to register

TALLER URUGUAY

Click here to register

FORENSIC PATHOLOGY

Click here to register

SEMINÁRIOS DE HISTOPAT DO LCPG JUNHO

Click here to register

REWIND: BONE MARROW HISTOPATH

Click here to register

CLIIC COURSE 2023

Click here to register

FREE FRIDAY SEMINAR JULY

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ENAPAVE 2023

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SEMINÁRIOS DE HISTOPAT DO LCPG JULHO

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CLASS & POLA 2023: SAVE THE DATE

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WDA PRE-MEETING WORKSHOP

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FREE FRIDAY SEMINAR AUGUST

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RACEHORSE NECROPSIES

Click here to register

EUROPEAN DIVISION: OCULAR PATHOLOGY

Click here to register

ISVD ANNUAL MEETING

International Society of Veterinary Dermatopathology (ISVD)

24th Annual Meeting

Satellite meeting of the ECVP/ESVP/ESVCP/ECVPV congress

Lisbon, Portugal, 30th of August 2023

8.00 – 8.50	**Registration**
8.50 – 9.00	**Welcome** President ISVD Dr. Stefano Borio
9.00 - 9.30	**Mystery slide session part 1** Moderator: Dr. William Craft 1. Dr. David Gardiner, Zoetis Reference Laboratories, Louisville, Kentucky, USA 2. Dr. Barbara McMahill, IDEXX Reference Laboratories, Wyoming, USA
9.30 – 10.30	**Plenary Lecture ISVD part 1** Chairperson: Dr. Stefano Borio, Diseases of the mucocutaneous junction and nasal planum – pathogenic, clinical, and histopathological aspects Dr. Monika Welle, University of Bern, Switzerland
10.30 - 11.00	Break
11.00 – 12.00	**Plenary Lecture ISVD part 2** Chairperson: Dr. Stefano Borio Diseases of the mucocutaneous junction and nasal planum – pathogenic, clinical, and histopathological aspects Dr. Monika Welle, University of Bern, Switzerland
12.00 - 12.30	**ISVD Grant Presentation** Chairperson: Dr. Stefano Borio, University of California, Davis, USA Unravelling the spatial profile of DNA Methylation in canine malignant melanoma Alice Musi, Doctorate Student, Faculty of Veterinary Medicine, University of Teramo, Italy
12.30 - 14.00	Lunch (included)
14.00 - 15.00	**Supportive Lecture ISVD** Chairperson: Dr. Chiara Brachelente Lies of lesions – Mucocutaneous diseases Dr. Karen Trainor, Innovative Vet Path, Kansas City, USA Dr. Dominique Wiener, Texas A&M University, Texas, USA
15.00 - 15.30	**Mystery slide session part 2** Moderator: Dr. William Craft 1. Dr. Karen Trainor, Innovative Vet Path, Kansas City, Kansas, USA 2. Dr. Ana Resendes, Universidade Lusófona, Lisbon, Portugal
15.30 - 16.00	Break
16.00 - 17.00	**Clinicopathological correlations** Moderator: Dr. Monika Welle 1. Dr. Kelly Keating, Animal Dermatology Group, California, USA and Dr. Verena Affolter, University of California, Davis, USA 2. Dr. William Craft, University of Florida, USA and Dr. Stefano Borio, University of California, Davis, USA 3. Dr. Karen Trainor, Innovative Vet Path, Kansas, USA and Dr. Roubina Honarchian, Metropolitan Animal Specialty Hospital, Los Angeles, California, USA
17.00 – 17.15	**Histology quiz** Moderator: Dr. Dominique Wiener
17.15 - 18.15	**ISVD Annual General Meeting (AGM)** - Members only

Click here to register

EASTERN EUROPEAN VET PATH MEETING

Click here to register

SEMINAR SERIES IN SPANISH SEPTEMBER

Registration information coming soon

SOUTH CENTRAL DIVISION MEETING

Click here to register

REUNIÓN ARGENTINA DE PATOLOGÍA VETERINARIA

Click here for more information

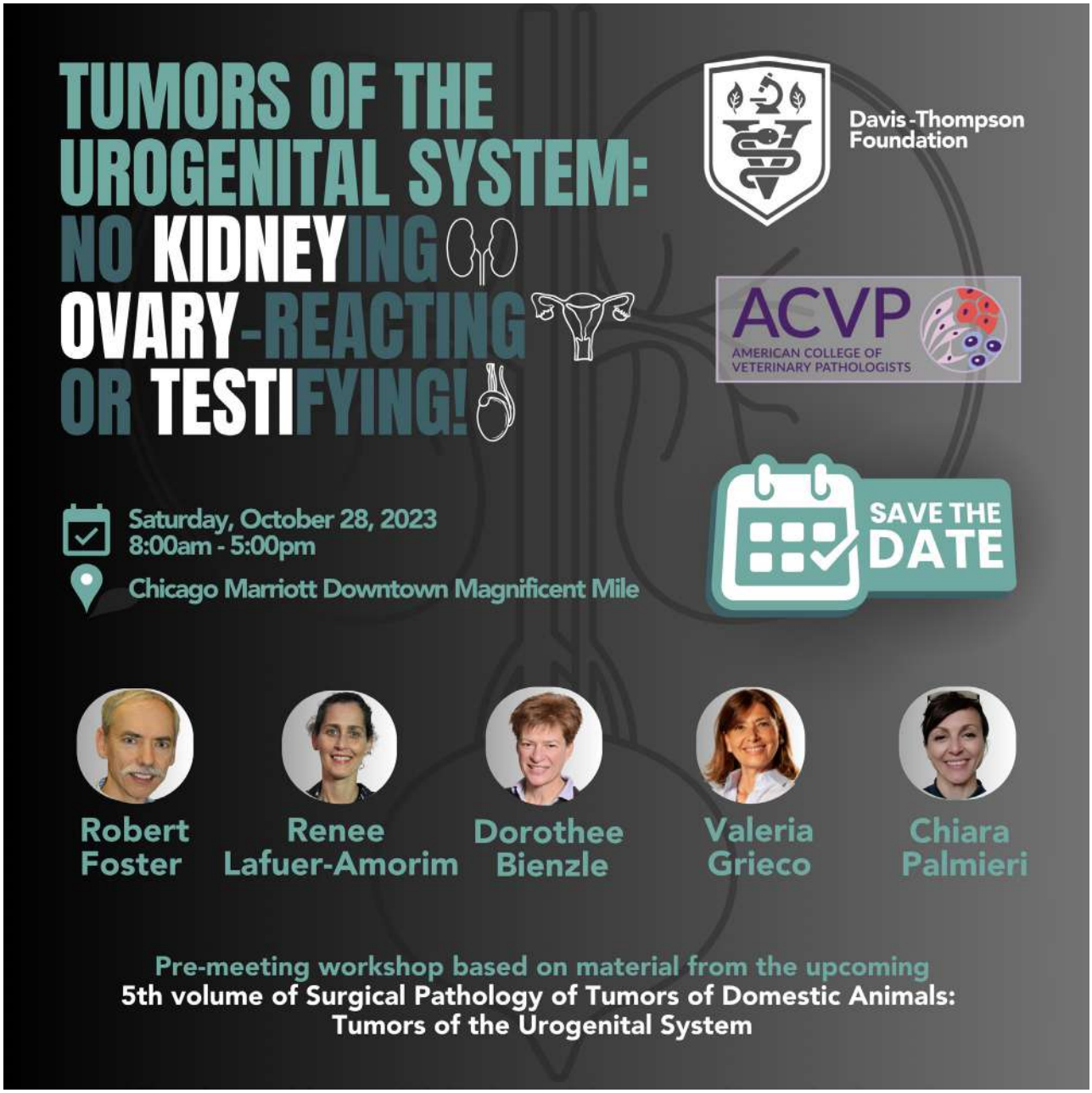
REUNIÓN ARGENTINA DE PATOLOGÍA VETERINARIA

Click here for more information

AAVLD PRE-MEETING WORKSHOP

Registration information coming soon

ACVP PRE-MEETING WORKSHOP



Click here to register

SEMINAR SERIES IN SPANISH NOVEMBER

Registration information coming soon

ARWH SYMPOSIUM AND SHORT COURSE

Taronga's Australian Registry of Wildlife Health, supported by the Cybec Foundation, is hosting a Wildlife Health and Pathology Short Course, and a One Health Principles in Wildlife Disease Management Symposium.

The course is open to anyone with an interest in wildlife disease, including pathologists, veterinarians, conservation biologists, and veterinary, ecology, and postgraduate students. Practical workshops on necropsy and sampling techniques, forensic investigations, and a histopathology master class will be offered.

The 1-day One Health Principles in Wildlife Disease Management Symposium (17th February) will highlight Australian and international perspectives on wildlife health management. Panel discussions will provide an opportunity for engagement and the exchange of ideas and best practice.

Internationally acclaimed wildlife pathologists, epidemiologists and microbiologists will join representatives from across Australia and New Zealand to deliver this fascinating program.

Registrations open July 2023!

www.arwh.org

TARONGA
Australian Registry of Wildlife Health

More information coming soon

ARWH SYMPOSIUM AND SHORT COURSE

Taronga's Australian Registry of Wildlife Health, supported by the Cybec Foundation, is hosting a 1-day One Health Principles in Wildlife Disease Management Symposium.

The One Health Principles in Wildlife Disease Management Symposium will highlight Australian and international perspectives on wildlife disease management. Panel discussions will provide an opportunity for engagement and the exchange of ideas and best practice.

In the days preceding this symposia, the Registry will also be hosting an intensive wildlife health and pathology short course composed of a day of hands on workshops and wet-labs, and a 4-day intensive review of the diseases of all vertebrate taxa.

Registrations open July 2023!

www.arwh.org

TARONGA
CONSERVATION SOCIETY AUSTRALIA
Australian Registry of Wildlife Health

More information coming soon

ASVP CORNER

Australian Society for Veterinary Pathology

A selection of cases from the March 2023 edition of *The Scope,* the newsletter of the Australian Society for Veterinary Pathology.

From the New South Wales State Lab

***Swainsona* intoxication in sheep**

On a property in the Northern Tablelands, in late October, a 4-year-old Wiltipol ewe in poor body condition was presented to the Local Land Services (LLS) vet with weakness, hindlimb ataxia with knuckling, a fine head tremor, falling upon turning, and diarrhea. The owner had observed that the ewes, which had been introduced from the Western Division 12 months ago, were not doing as well as expected. Despite grazing excellent pasture, a tail had formed in the mob of 280 Wiltipol ewes which were also raising lambs. The lambs were doing well. In particular, the owner was concerned about Johne's Disease.

On post-mortem there was no gross evidence of Johne's Disease. A range of fixed tissues were submitted to the EMAI vet lab. Johne's Disease and Transmissible Spongiform Encephalopathies were excluded by histopathology.

Histopathology of the brain revealed widespread swelling, pallor and vacuolation of neurons at all levels of the brain, particularly prominent in the Purkinje cell layer of the cerebellum (Figures 1 & 2); in addition, there was axonal degeneration and mild gliosis at some brainstem sites. Neuronal cells in the nerve plexus of the intestine had similar changes. Hepatocytes and renal epithelial cells also had degenerative changes of swelling, pallor and vacuolation. Additionally, foamy macrophages were noted in the small intestinal mucosa, lymph node cortex and medullary sinus. The changes were consistent with lysosomal storage disease, acquired in this case, and caused by swainsonine intoxication.

The LLS vet found abundant *Swainsona* pea flowers along roadsides on the property. *Swainsona* plants are palatable to livestock, they selectively graze them, almost addictively. Poisoning occurs with prolonged intake (weeks). The plants are most dangerous in spring/early summer after winter rains have caused them to sprout. It is unclear if the toxin, swainsonine, is produced by the plant itself or an endophyte.

Swainsonine blocks enzymes in the pathway of sugar metabolism, resulting in accumulation of sugars in lysosomes causing the 'bloated' appearance of cells in multiple organ systems, particularly the brain. Neurological signs are the main feature of the disease, however emaciation and death without nervous manifestation can also occur, and sometimes infertility and abortion. If the damage is not too advanced animals can recover

From the Victorian State Lab

Kangaroo gait syndrome in a lactating ewe

In October 2022, one ewe from a flock of 2500 showed a sudden onset of recumbency. When forced to move she used both hindlimbs at once to propel herself forward, commonly described as a "bunny hop" or "kangaroo gait". She was in good body condition, bright alert and responsive at clinical examination and no significant findings were present at necropsy.

Histopathological lesions were bilateral and confined to the radial or median nerves which were submitted in the same pot. One of these nerves (presumably the radial nerve given previous reports of this condition) showed moderate to occasionally severe dilation of nerve sheaths with eosinophilic debris and rare macrophages (Wallerian degeneration, Figure 3). The left and right sciatic and tibial nerves, spinal cord and brain sections were normal.

The clinical and histopathological findings were considered consistent with kangaroo gait syndrome, a condition that affects lactating ewes, usually with multiple lambs at foot. Factors that help in differentiating this condition from other causes of peripheral nerve disease in sheep include the very low incidence, absence of lesions in other nerves and the fact

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that only lactating ewes are affected. A full recovery after weaning of the lambs is commonly reported.

The cause of this syndrome is unknown however, one of the most plausible theories is that bilateral radial nerve damage is due to compression, perhaps due to hyperextension or abduction of the forelimbs.

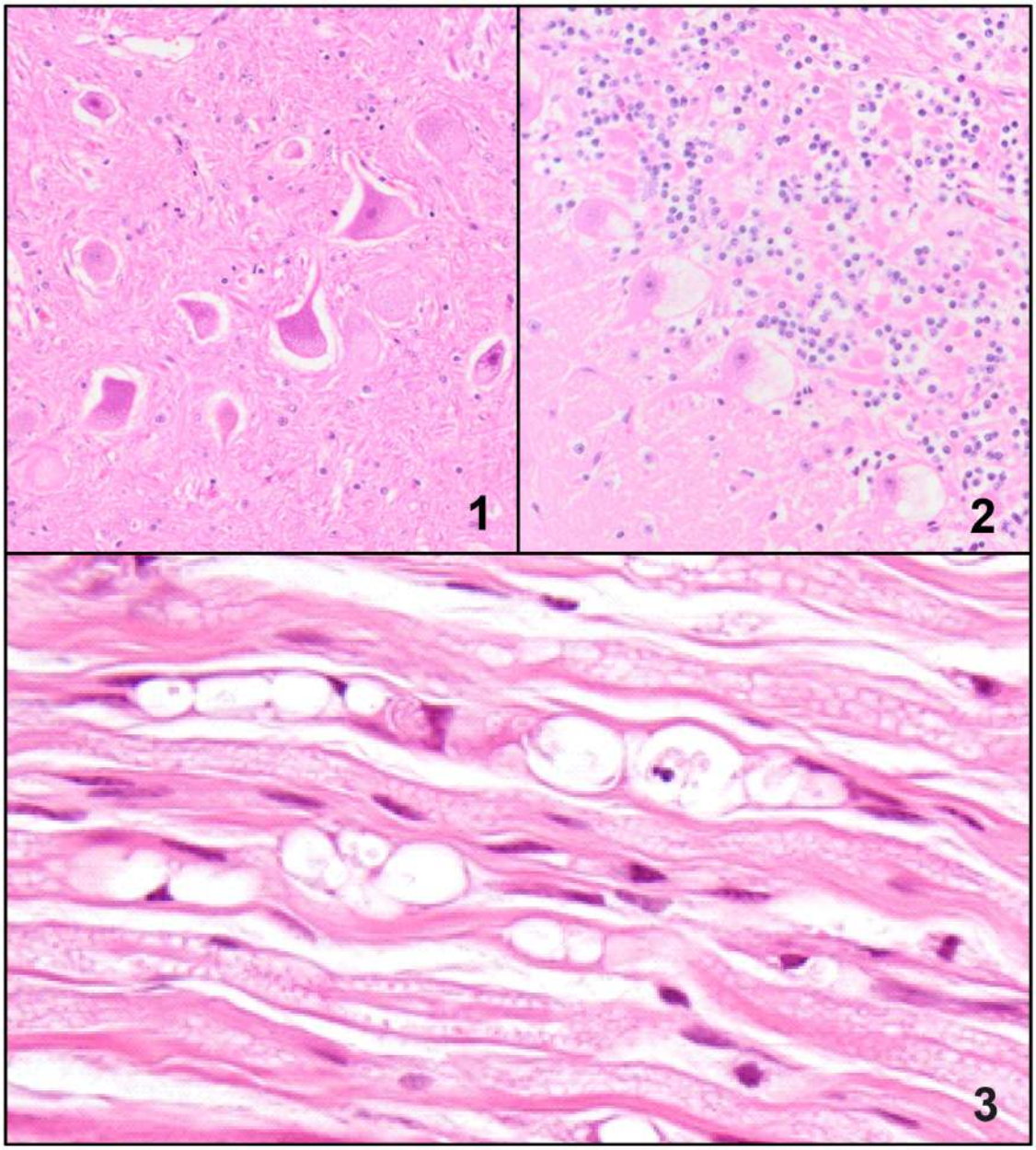

Figure 1: Ovine. Swainsonine intoxication. Swelling and cytoplasmic pallor of cerebral neurones. H&E.
Figure 2: Ovine. Swainsonine intoxication. Swelling, pallor and vacuolation of cerebellar Purkinje cells. H&E.
Figure 3: Ovine. Radial or median nerve. Wallerian degeneration. H&E.

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From the Taronga Conservation Society & the Australian Registry for Wildlife Health

Dolphin injuries

The Registry was called to investigate when a common bottlenose dolphin (*Tursiops truncates*) died following bull shark attack, just as a Surf Carnival was kicking off nearby.

In addition to numerous acute semi-circular lacerations along the flanks, peduncle and flukes (Figure 4) that were consistent with shark predation, the dolphin had focally severe, nodular dermatitis, cellulitis and fibrosis at the left pectoral fin insertion and along the peduncle (Figure 5), and similar foci of linear fibrosis along the left craniodorsal body wall. These fibrous lesions were suggestive of previous rope or net entanglement in commercial or recreational fishing gear, but the nodularity (Figure 6) was suggestive of a secondary infectious process. Multifocal round epidermal scars ventrally were consistent with previous cookiecutter shark (*Isistius brasiliensis*) injuries. Parallel linear lacerations, called rake marks (Figure 7), were interpreted to be caused by previous intra or interspecific aggression.

Internally there was evidence of diffuse pulmonary edema and congestion, attributable to a combination of asphyxiation, drowning and

Figure 4: Dolphin flank with linear indentations in an annular pattern in the cervical area and tracking dorsocaudally from the insertion of the left pectoral flipper consistent with old entanglement injury. Semi-circular lacerations represent shark predation.
Figure 5: Nodular and fibrous lesion at the insertion of the left pectoral flipper.
Figure 6: Fibrous and nodular lesion along the caudo-ventral peduncle – co-located with annular indentations that were suggestive of prior entanglement.
Figure 7: Parallel linear lacerations called rake marks, consistent with intra or inter-specific aggression.

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terminal circulatory collapse. Moderate, diffuse lymphadenopathy provided additional evidence of potential underlying chronic disease.

Additional gross findings included adrenocortical hyperplasia, omental nematodiasis, gastric acanthocephaliasis (Figure 8), subcutaneous cestodiasis, and external biota consisting of barnacles and whale lice.

Radiographic findings included coccygeal vertebral osteophyte and callous formation (Figure 9), consistent with deep tissue trauma, presumed to be associated with prior entanglement.

Microscopically, the nodular skin lesions were composed of acanthotic epithelium with deep rete peg formation, and thick dermal fibrosis where rafts of foamy macrophages and multinucleate giant cells contained refractile cytoplasmic structures with a thin capsule (Figure 10). These refractile organisms measured 7-10 microns in diameter and were not birefringent under polarised light. Granulomatous inflammation and small aggregates of lymphocytes, plasma cells, eosinophils and neutrophils penetrated through the blubber and subcutis into the underlying musculature. Fungal culture and identification by PCR are pending and will be reported in the next edition. Lobomycosis or lacaziosis, caused by *Lacazia loboi* (formerly *Loboa lobai*) is among the differential diagnosis. The zoonotic potential of this organism has been questioned, as there are genomic differences between

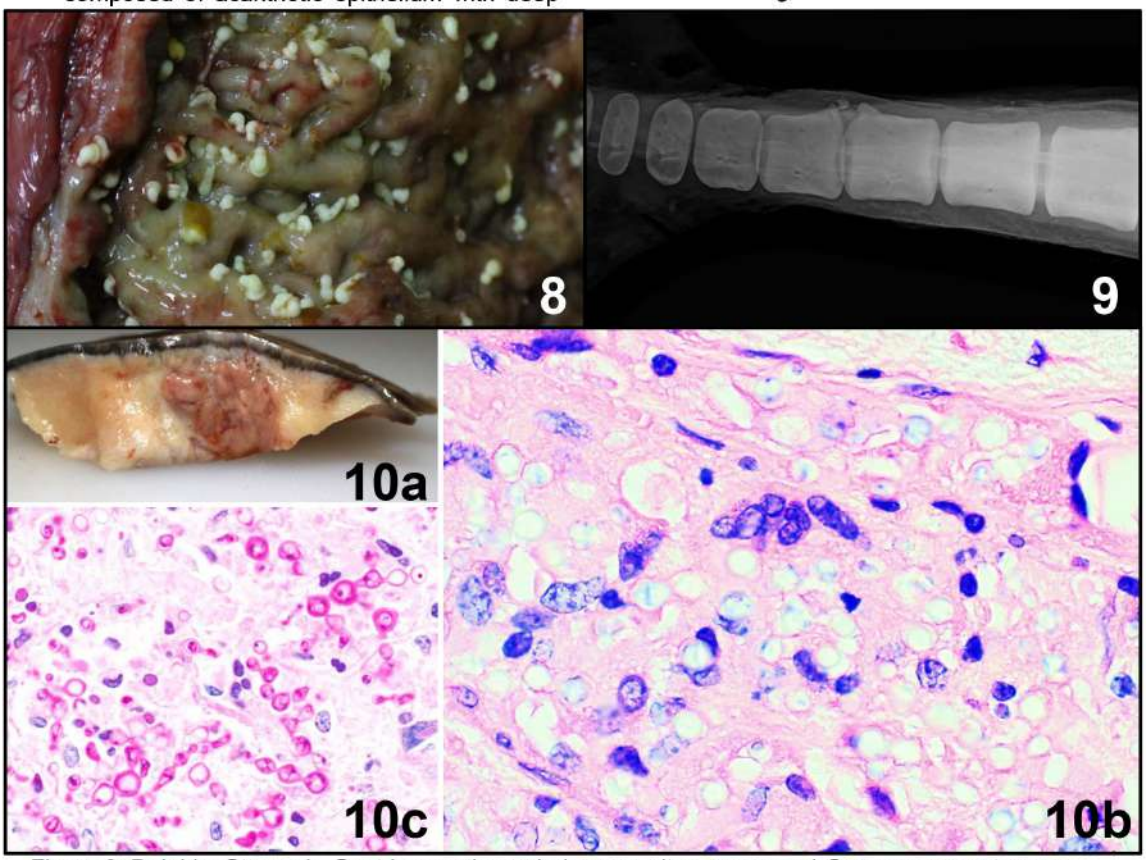

Figure 8: Dolphin. Stomach. Gastric acanthocephalan parasites, presumed *Corynosoma cetaceum*.
Figure 9: Dolpin. Coccyx. Radiographs illustrating coccygeal osteolysis and osteophyte production.
Figure 10a-c: Dolphin. Skin. Granulomatous dermatitis. Gross image (a). Photomicrograph illustrating macrophages, multinucleate giant cells and the faint outline of chains of round structures, HE, 1000x (b). Chains of round to oval PAS positive, often budding organisms, PAS, 1000x (c).

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cetacean and human cases (Reif et al., 2013). Nonetheless, cetaceans can carry other zoonotic agents and we hope that the many people handling and moving this animal were wearing appropriate PPE.

The gastric parasites are yet to be identified, but based on their gross size, location and morphology they are most consistent with *Corynosoma cetaceum* (Johnston and Best, 1943). Peripyloric acanthocephalan infection is not uncommon in common and bottlenose (*Delphinus dilphis*) dolphins in Australian waters. Most often infection with these organisms is mild and considered incidental to the health of the host. In this instance the intensity of infection was high and the gastric mucosa was inflamed, which may have both resulted from, and contributed to the animal's ill health.

From the Western Australian State Lab

***Histophilus somnii* myocarditis in a heifer**

Sudden death without premonitory signs was reported in ten-month-old Murray grey cross heifers, with two of three recently purchased animals dead. Examination by the local state government field vet found the remaining heifer recumbent, panting, pyrexic and dehydrated. The heifer was euthanased. Focal pallor of the myocardium was noted, among other less relevant changes.

Myocardial sections revealed severe multifocal to coalescent interstitial inflammatory infiltrates of mixed neutrophils, macrophages, lymphocytes and plasma cells (interstitial myocarditis) with associated hyaline degeneration and necrosis of myofibres (Figure 8). Some interstitial vessels contain large colonies of short coccobacillary bacteria with some vessels occluded by fibrinocellular thrombi. Gram stains confirmed the bacteria as gram-negative (Figure 9).

Histophilus somnii was isolated in heavy growth from the brain, lung and liver.

Histophilus somni (*Haemophilus somnus*) is an important pathogen of cattle, particularly feedlot animals. Important disease syndromes (histophilosis) associated with this organism include septicaemic thromboembolic meningoencephalitis (TEME), respiratory disease characterised by acute pleuropneumonia often in mixed infections with other agents, embolic bacterial septisaemia, myocarditis (frequently in the left ventricular papillary myocardium), arthritis and the genital syndrome associated with endometritis, abortion, mastitis and infection of semen and genital tracts of bulls.

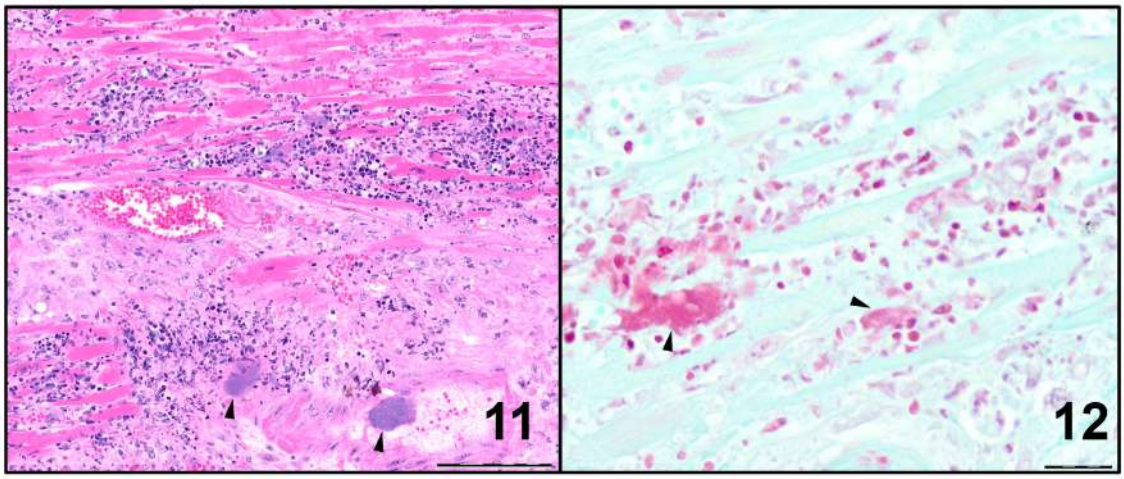

Figure 11: Bovine. Heart. Multifocal necrosuppurative myocarditis prominent bacterial colonies. H&E. Bar 100µm.
Figure 12: Bovine. Heart. Thrombi composed of Gram negative bacilli (arrowheads) in the myocardium. Gram. Bar 20µm.

ASVP CORNER

References

NSW Swainsonine case:

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Australian Registry of Wildlife Health

- Reif JS, Schaefer AM, Bossart GD. *Lobomycosis: risk of zoonotic transmission from dolphins to humans*. Vector Borne Zoonotic Dis. 2013 Oct;13(10):689-93.
- Johnston TH, Best EW. *Australian Acanthocephala*. No. 3. Transactions of the Royal Society of South Australia. 1943;66(2):250-4.

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- Australian Registry of Wildlife Health,
- Agriculture Victoria AgrioBio laboratory,
- New South Wales Elizabeth MacArthur Agricultural Institute (EMAI) laboratory & Local Lands Services vets and
- Western Australia's DPIRD laboratory

for case contributions.

ASVP
Australian Society for Veterinary Pathology

The Scope, the newsletter of the Australian Society for Veterinary Pathology, is published three times yearly, comprising reports from each State laboratory, case reports and Society news. Access to the full version of The Scope is limited to ASVP members. The public facing ASVP website is available at https://asvp.asn.au//

The ASVP thanks the Davis-Thompson Foundation for the opportunity to share casework.

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2023 ASVP & DAVIS THOMPSON FOUNDATION SCIENTIFIC CONFERENCE

THEME: HEPATOBILIARY DISEASE

8-10 SEPTEMBER 2023
THE PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

This year's ASVP conference theme is the hepatobilary system. We are delighted to announce the engagement of high calibre international and national speakers that cover the specialities of internal medicine, clinical pathology and anatomical pathology. The program will have a case based collaborative approach with audience participation encouraged, and will appeal to anatomical and clinical pathologists interested in both small and large animal species, as well as internal medicine specialists or residents.

We look forward to welcoming you as a delegate to the Conference.

KEYNOTE SPEAKERS:

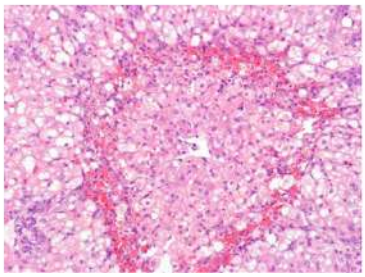
DR JONATHAN LIDBURY
Associate Professor, Small Animal Internal Medicine
Gastrointestinal Laboratory
Texas A&M University

DR SEAN MCDONOUGH
Associate Professor, Department of Population Medicine and Diagnostic Sciences
College of Veterinary Medicine
Cornell University

DR NATALIE COURTMAN
Associate Professor, Veterinary Clinical Pathology
Sydney School of Veterinary Science
University of Sydney

ADDITIONAL NATIONAL SPEAKERS:

- **DR JURGEN STAHL,** CLINPATH LABS
- **DR SUSAN JAENSCH,** VETNOSTICS
- **DR IAN JERRETT,** DJPR VICTORIA



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What's on offer?

- **the program will also include member & student presentation, mystery slides, exhibitions & more**
- **an outstanding scientific program**
- **a diversity of delegates**
- **a supportive environment for members, students and early career pathologists to present and learn from colleagues**
- **Happy hour with expert panel session (Back by popular demand!)**
- **Conference Dinner**
- **networking with delegates over 3 days of the program**
- **a chance to catch up with colleagues**
- **earn CPD/MOC points**

Registration opening soon

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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.

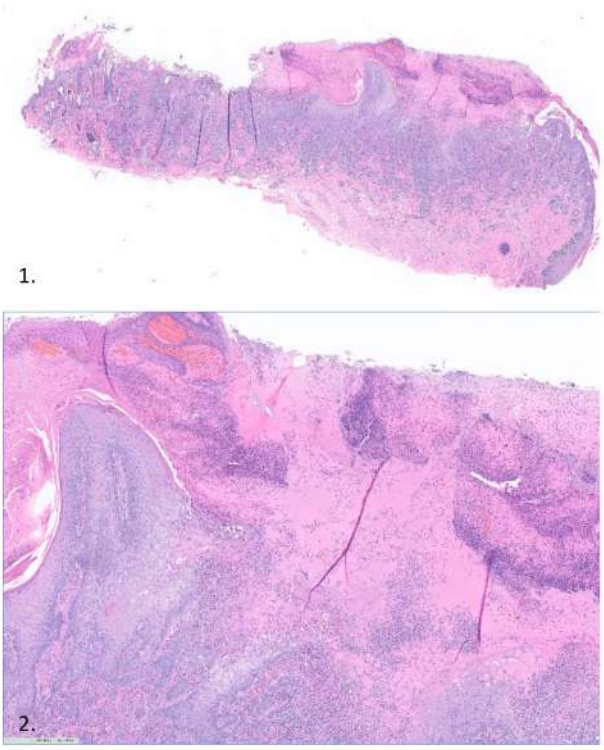
BSTP

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

IDEXX CASECONNEXX CORNER

Signalment: 14-year-old, female spayed, Domestic shorthair

Source/ History: Nasal erosion about 6 weeks duration. Crusty.



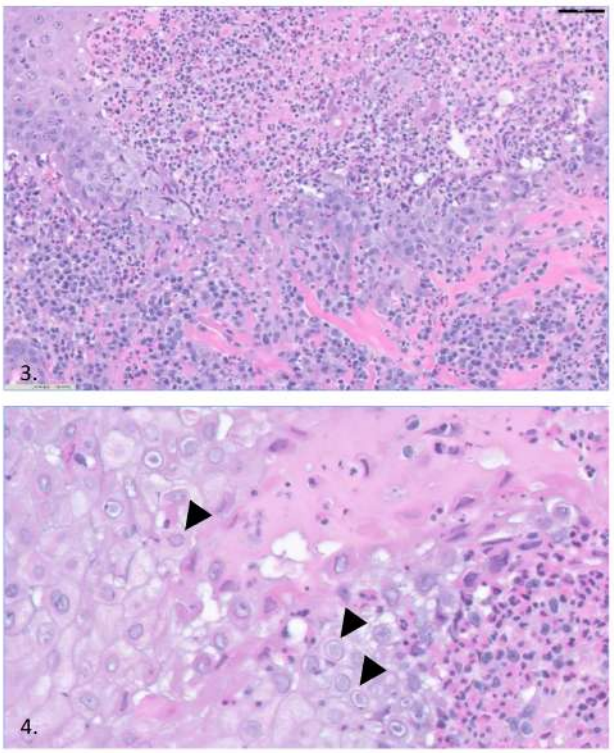


Figure 1. (2X magnification, H&E stain) The epidermis is disrupted by broad deep regions of ulceration with overlying thick serocellular crusting.
Figure 2. (10X magnification, H&E stain) and Figure 3. (40X magnification, H&E stain) Crusts contain degenerate granulocytes, serum, sloughed keratinocytes and keratin. The adjacent intact epidermis is irregularly hyperplastic. In the subjacent dermis, there are many plasma cells and eosinophils.
Figure 4. (60X magnification, H&E stain) Frequent keratinocytes contain glassy, amphophilic intranuclear inclusions which marginalize chromatin (arrowheads).

Microscopic Description:
Diffusely, there is moderate to marked irregular epidermal hyperplasia, and multifocal broad deep regions of erosion and ulceration. The erosion to ulceration is covered by a thick extensive serocellular crust, with degenerate granulocytes, serum, keratin, sloughed degenerate keratinocytes, and few suspect cocci bacteria. Within the intact epidermis in this region, there are variably enlarged keratinocytes and nuclei, with frequent, glassy, amphophilic intranuclear inclusions which marginalize chromatin. There is mild hyperplasia of the follicular infundibular epithelium. Within the underlying dermis are moderate to marked numbers of plasma cells, eosinophils, fewer lymphocytes and mast cells, and scattered histiocytes and neutrophils.

Microscopic Interpretation:
Marked, locally extensive, ulcerative, plasmacytic and eosinophilic dermatitis with irregular epidermal hyperplasia, extensive serocellular crusting and intrakeratinocyte intranuclear inclusion bodies

Comments:
The histological changes are consistent with ulcerative dermatitis due to feline herpesvirus infection. This is a predominantly facial feline skin disease that results from feline herpesvirus 1 infection. Affected cats may have a history of upper respiratory infection and/or clinical signs associated with conjunctivitis. Environmental stress, immunosuppression, or glucocorticoid therapy are considered possible triggers. The dorsal and lateral muzzle, periorbital regions and nasal planum are commonly involved sites. Most affected cats have lesions that are limited to the face, but other body regions including the trunk and distal extremities may be involved. Clinical lesions vary greatly in severity; common signs include erosion and ulceration of the face, erythema, swelling, and crusting.

Reference: Skin Diseases of the Dog and Cat, 2nd ed. pp. 124-126,351-352, 2005

Case by
Joseph Malatos, DVM, DACVP

IDEXX

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LCPG & DTF ACTIVITIES IN LATIN AMERICA

Country	Name of Seminar	Dates	Place/University	Speakers	Organizers
Argentina	XIII RAPAVE/17° 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
Brazil	Brazilian Symposium of the C.L. Davis - S.W. Thompson Foundation and National Pathology Meeting - ENAPAVE	Jul 17-20	João Pessoa, Paraíba - Intermares hall	Raquel Rech	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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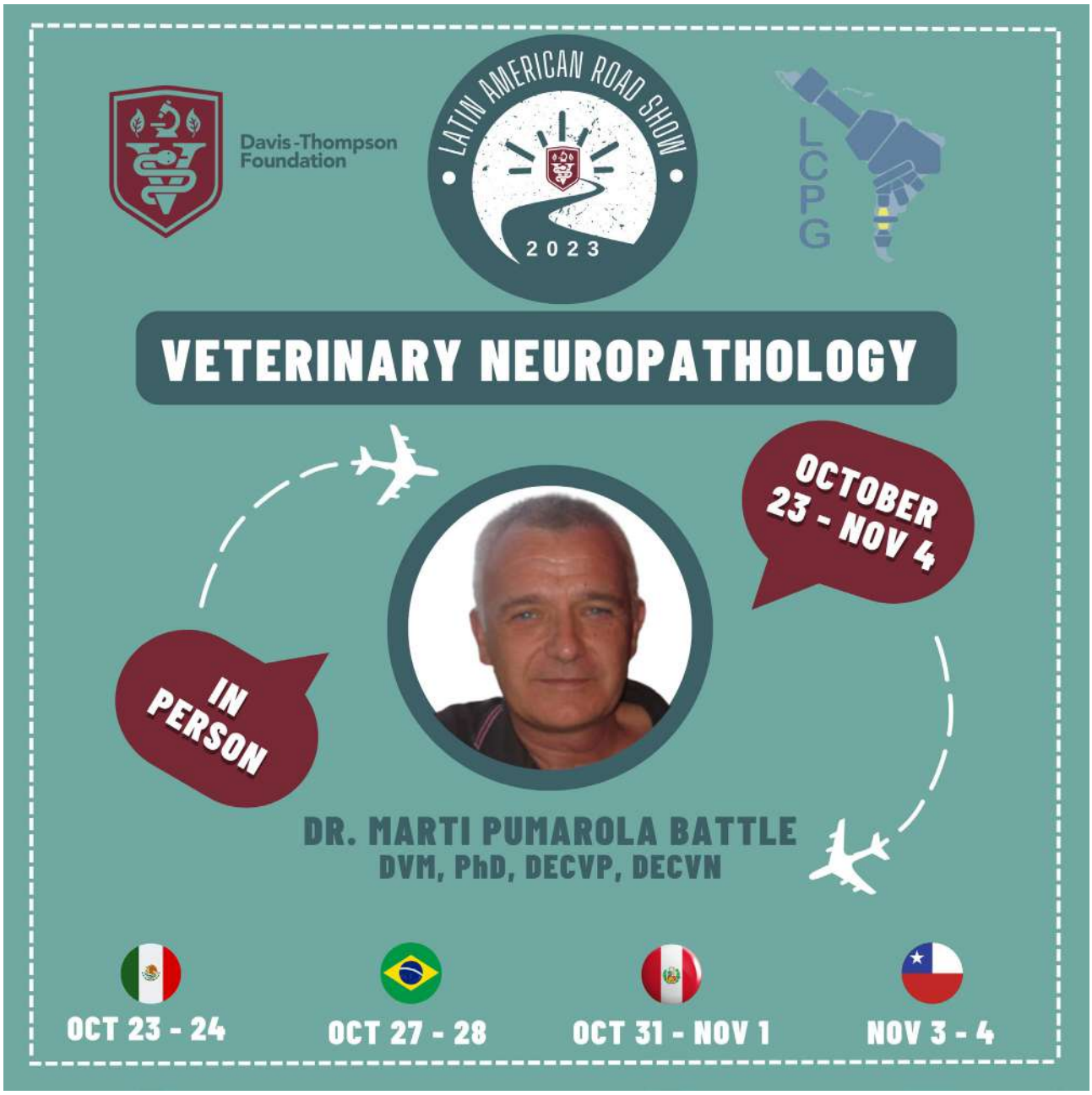

More information coming soon in the web

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Registration information coming soon

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Professional exchange at LAPAVET Coronado, Costa Rica: Carol Meteyer DVM, DACVP

Dr. Carol Meteyer Emeritus Scientist, USGS National Wildlife Health Center spent March 12, 2023 to March 29, 2023 in the LAPAVET pathology department, part of the San Francisco de Asis school of veterinary surgery and medicine, in Vázquez de Coronado, San José, Costa Rica. On a beautiful campus set in the hills above San José, LAPAVET is a busy diagnostic lab with diverse submissions. The diagnostic team, under the direction of Dr. Roberto Olivares, works collaboratively on cases, has weekly conference sessions, mentor senior students on special projects, and teaches classes and labs on all aspects of pathology, diagnostics and infectious disease. All of this contributes to a vibrant exchange of knowledge in a collegial atmosphere. Dr. Meteyer participated in conference sessions, shared cases, and conducted two afternoon seminars for faculty, students, and wildlife veterinarians (attending on campus and remotely). One of the seminars outlined the challenges of pathogen discovery in wildlife populations. Real-life examples were used to illustrate the need for interdisciplinary teams to unravel clues when novel pathogens first appear. Dr. Meteyer consistently highlighted the important role traditional pathology plays when new pathogens emerge in wildlife. The second seminar reviewed the pathology, virulence, and epidemiology of diseases of wild birds, and touched on diseases of amphibians and reptiles. These talks were facilitated by excellent English-to-Spanish translators that interpreted these seminars for attendees. Subsequent discussions included the challenges of detecting and diagnosing wildlife mortality in more remote areas, and the potential for developing a network to facilitate information exchange among biologists and veterinarians working with wildlife in Costa Rica.

During her 2 ½ weeks Dr. Meteyer observed necropsies and reviewed the histopathology of challenging cases including venomous snakes, two-toed sloths, howler monkeys, birds that are native to Costa Rica, and aquaria fish. Access to digital photography allowed documentation of unique pathology to include both in reports developed by Dr. Meteyer and for discussion during case conferences. The variety of diseases reviewed by Dr. Meteyer provided opportunities

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to focus on histologic identification of fungi and parasites in tissue; discuss the potential etiologies of a severe viral pneumonia in a sloth with apparent mixed viral infection; explore the potential for natural exposure to coumarin toxin as the cause of lesions in herbivorous howler monkeys; and understand granulomatous lesions caused by tuberculosis in *Crotalus semis*, and the occurrence of liver tumors in geriatric *Bothrops asper*.

To enhance the understanding of some of these cases, Dr. Meteyer and folks from LAPAVET visited the serpentarium at the Institute Clodomiro Picado. This institution is setting the standard for maintaining captive populations of venomous snakes including breeding, husbandry and venom extraction for antivenin production. A field trip to Toucan Rescue Ranch showed the important role of rehabilitation facilities in understanding health and disease of species in the wild, particularly when the biology and ecology of native wildlife is so unique and potential pathogens may still be unknown.

Beyond the wonderful academic and diagnostic experiences at LAPAVET, Dr. Meteyer also shared many good meals, weekend adventures, and the amazing camaraderie of all of the members of LAPAVET!

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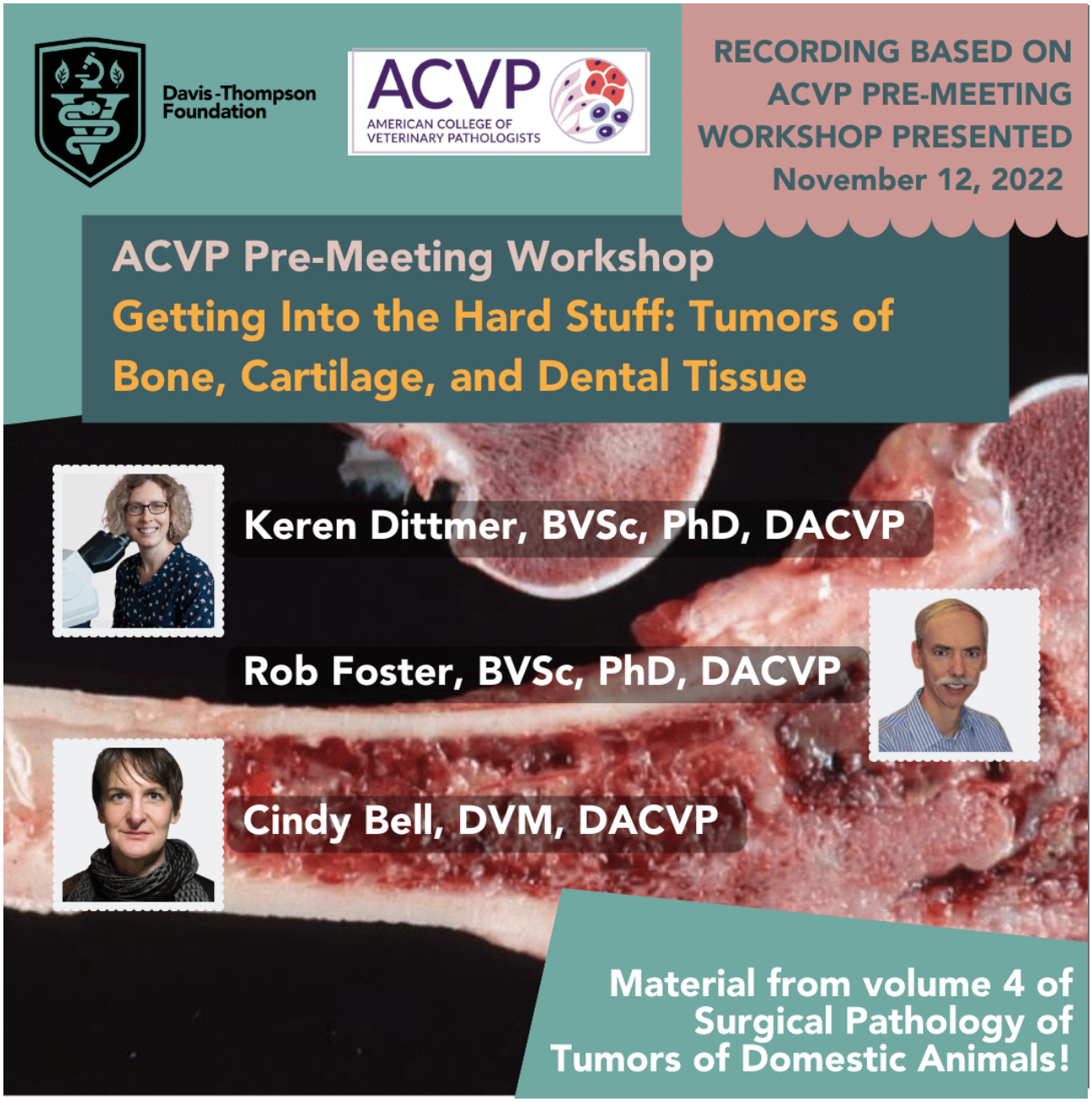
MISCELLANEOUS ANNOUNCEMENTS



The recording of the 2022 DTF/ACVP pre-meeting workshop is now available on the DTF bookstore website for purchase. This rebroadcast is approved for 4 ACVP MOC credits, 6.5 RACE credits

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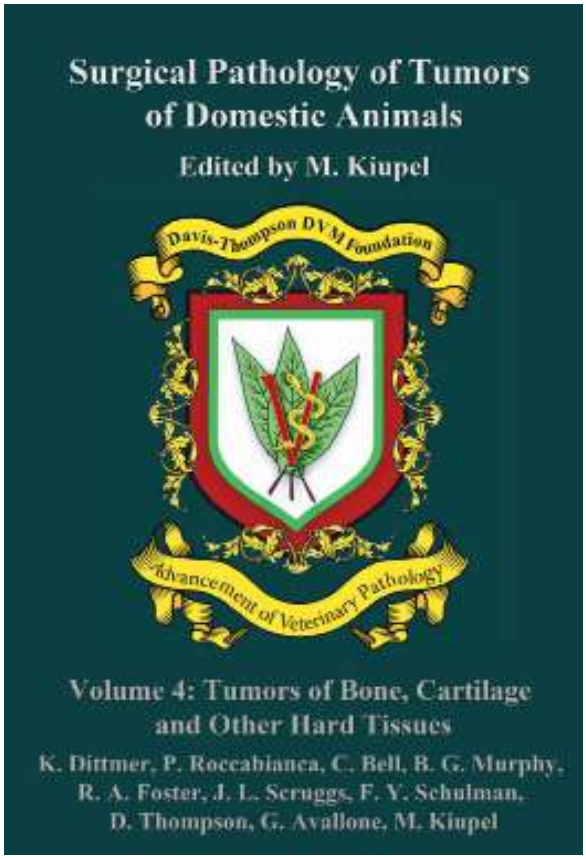
MISCELLANEOUS ANNOUNCEMENTS



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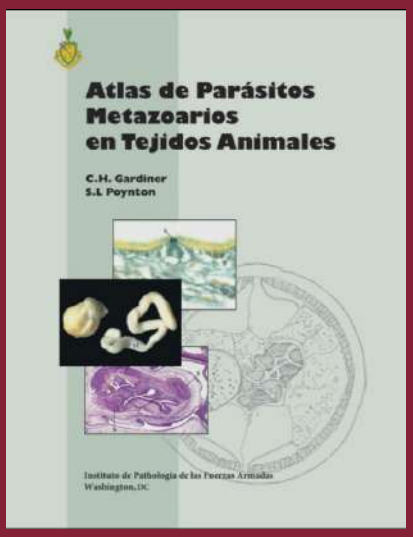
Davis-Thompson Foundation Pathology Externship

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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