

# NATIONWIDE LABORATORIES WINTER/ SPRING NEWSLETTER

ONE WORLD. ONE PASSION. ONE TEAM

## FREE CPD

**What are you itching to know about feline atopic skin syndrome?** by Dr Rosario Cerundolo DVM, Cert. VD, Dipl. ECVD, FRCVS

[CLICK HERE →](#)

**Clinical Pathology in cats and dogs - why species, breed and age matter** by Helen Campbell BVM&S FRCPath MRCVS and Alina Bodnariu DVM MSc PhD FRCPath MRCVS

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**Haematology and biochemistry results in equines: interpretation and significance** by Dr Stacey A. Newton BVSc Cert EM (Int Med) PhD FRCPath MRCVS

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**Cutaneous Round Cell Tumours in Dogs: Differentials and Diagnostic Dilemmas** by Alison Lee BSc MVB MRCVS DipACVP DVMS

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**Canine mast cell tumours: 50 shades of grading** by Alison Lee BSc MVB MRCVS DipACVP DVMS

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**Histiocytic diseases in dogs and cats: An overview of clinical presentation and diagnosis** by Alison Lee BSc MVB MRCVS DipACVP DVMS

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## Message from David Charvill

Dear friends,

Welcome to our newsletter! As a company we are passionate about animal welfare, customer focused and always advancing. We are bringing in new technology to make our services meet your requirements, i.e. digital pathology which for you will mean faster turnaround times and more accurate results, courier booking app which enables you to order your sample collection in just a few clicks and an online portal which will go live later in the year. We are well aware of the challenges the veterinary profession is facing and we always put you first. In our labs real people answer the phone and our pathology team are always available for a case discussion when you need one. We offer a wide variety of CPD and try to make our operations more sustainable, that is why our BSAVA 2023 offering focuses on education and sustainability. Come and see us at the Congress or just get in touch to find out what we can do for your business.

David Charvill,  
Director of Laboratory Services



# Digital Scanning Service

## No project is too big or too small

NationWide Laboratories is pleased to offer a high speed and high-resolution slide scanning service to professionals and organisations. We guarantee the best quality digital slide scanning solution, using the largest throughput scanner available on the market; the 3DHistech Panoramic P1000 RX scanner. Using our digital slide scanning service gives you all the advantages of digital pathology without the high-cost investment

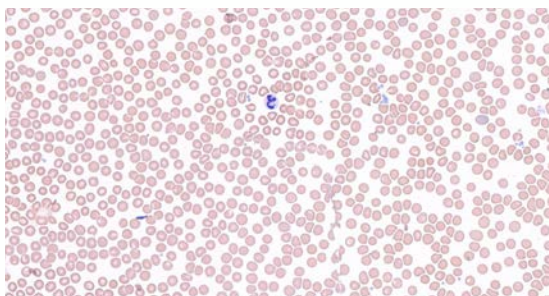
## Benefits

- The highest resolution scanning available today - 82x water immersion
- Brightfield scanning at resolutions of 20x, 40x, including whole slide scanning
- Z stack and extended focus scanning options available too
- High throughput and quick turnaround service
- Our specialist service allows the highest quality images but without the large file sizes often associated with scanned images.
- Digitisation of slides allows for efficient sharing of images, whether that be with a colleague for preparing for publication or presentation
- Archiving and convenient storage of digital images vs onsite storage of glass allows for centralisation, control and security of your images

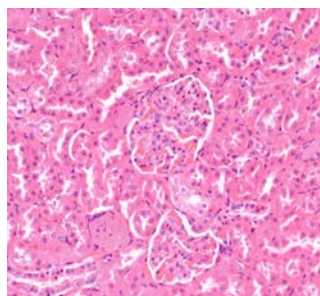
## Service

- All you need to do is send us your glass slides and in return you will receive the high-resolution digital images either as a cloud storage link or physical hard drive
- 30-day image storage is included; extended image storage options are available
- A range of image types are available
- Low-cost and rapid turnaround service

Contact [andrew.pritchett@nwlab.com](mailto:andrew.pritchett@nwlab.com) to discuss your project and to take advantage of the high-quality slide scanning service!



Haematology scan at 80x: red cells, platelets and a neutrophil which demonstrates a Barr body ('Drumstick')



Histology section of a kidney showing clear glomerulus

## LATEST INNOVATIONS IN DIGITAL PATHOLOGY

Digital pathology and the scope for machine learning holds great potential workflow efficiencies for veterinary pathologists, as well as for diagnosis and patient care in the wider profession. It has the scope to transform veterinary pathology, not least through the challenges of the COVID-19 pandemic and the current staffing issues. With the implications of this potential, Improve Veterinary Practice caught up with Andrew Pritchett from NationWide Laboratories to discuss its innovative digital pathology offering and development of a digital pathology centre of excellence to support veterinary diagnostic services.

[READ MORE →](#)

“  
COMING  
SOON  
”

**ERYTHROPOETIN (EPO) analysis for canine and feline samples**

NationWide Specialist Laboratories is pleased to announce that we will soon be offering a service for the **analysis of Erythropoetin (EPO)**.

EPO plays a key role in the regulation of red cell mass and erythrocyte production. EPO may be used to aid the differential diagnosis of polycythemia and non-regenerative anaemia. Raised levels of EPO occur in secondary polycythemias and renal tumours. Low/normal levels may occur in renal failure and polycythemia vera.

Sample requirement is 0.5mL separated serum.

A request form may be downloaded from [www.thehormonelab.com](http://www.thehormonelab.com). For further enquiries, please ring 01223 493400

## SDMA ASSAY

This assay has been validated against Liquid Chromatography – Mass Spectrometry method which is the Gold standard. This is an immunoturbidimetric assay and has been validated for dogs, cats and horses. Li-hep plasma or serum are suitable samples for this assay. **THE RESULTS ARE AVAILABLE SAME DAY.**

# Case study in focus: squamous papilloma with squamous cell carcinoma in a gerbil



(*Pachyuromys duprasi*). Different species and strains show differing behaviours and resistance to disease, so it is important to include the species of gerbil on the submission form, along with the age and sex of the animal, just as for other species.

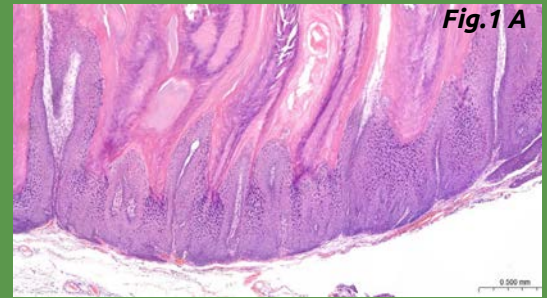
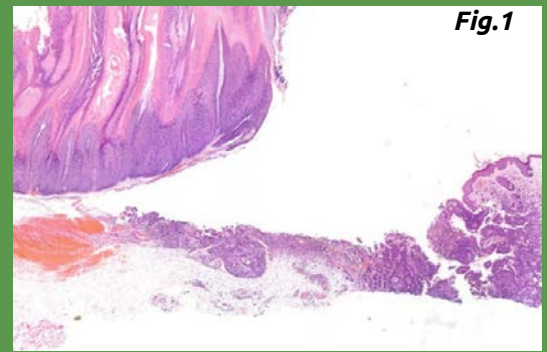
Recent histopathology submissions from gerbils to NationWide Laboratories primarily involved neoplastic skin lesions. Most of the lesions involved the ventral scent glands, although lesions from other parts of the body were also submitted. In this brief report we describe an unusual presentation of squamous papilloma with a concurrent squamous cell carcinoma. The patient was a 2-year-old, male gerbil who presented with a 20 x 17 mm hairless growth in the umbilical region. The lesion consisted of a well demarcated papillomatous lesion composed of squamous cells, with marked hyperkeratosis with some areas of crusting (Fig.1 A). There was marked hypergranulosis of the squamous cells, as well as proliferation of the basaloid layer. Underlying the papillomatous lesion there was a markedly infiltrative lesion composed of poorly differentiated squamous cells, arranged individually or in solid trabeculae, within a fibrous stroma (Fig.1). Neoplastic cells were highly pleomorphic and showed high mitotic activity (Fig.2). The papillomatous lesion was entirely removed, but there were extensive areas of malignant squamous cells extending to the deep margin of the section. A diagnosis was made of a poorly differentiated squamous cell carcinoma (SCC) arising from a papilloma.

Small mammals such as gerbils are becoming increasingly popular as pets and today's owners have a greater understanding of the environmental, nutritional, and behavioural needs of these creatures. This is reflected in increasing numbers of published papers and data that are now available for small mammals although, unlike other rodent species, there is relatively little information about naturally occurring diseases in pet gerbils. Small mammals have their own unique perspective on the common lesions, even amongst different subspecies. Nevertheless, it is still possible to apply "first principles pathology" to investigate lesions and form an appropriate differential list, just as we do for other domestic species.

There are numerous species of gerbil, although only a few are commonly kept as pets. They live as monogamous pairs or small groups and their lifespan is typically 3 to 4 years.

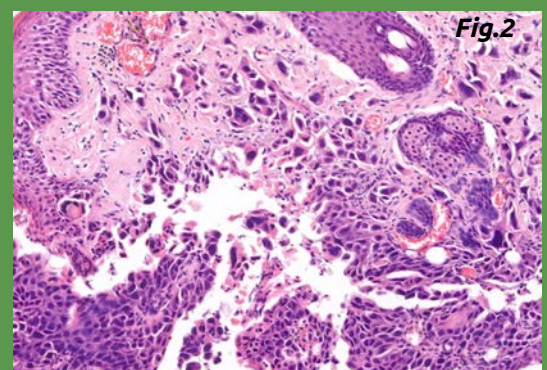
The most common species which are kept as pets in the UK are the Mongolian gerbil (*Meriones unguiculatus*) and fat-tailed gerbil

THE IMAGES FOR THIS CASE STUDY WERE PRODUCED USING OUR 3DHISTECH PANNORAMIC P1000 RX

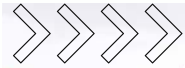


This was an unusual lesion. Cutaneous papillomas and carcinomas are recorded in Mongolian gerbils. When involving the scent glands these can be sebaceous adenomas, epitheliomas or carcinomas, including SCC. They can become ulcerated and infected, leading to significant debilitation. Malignant lesions can be locally invasive and can also metastasise to the regional lymph nodes and lungs. Progression from squamous papilloma to SCC has been recorded in rabbits and four toed hedgehogs but little is known about this progression in Mongolian gerbils. Likewise, the development of papillomas due to infection with papillomavirus, as in humans and other domestic species, has also not yet been reported in gerbils.

**Sandra Dawson**  
Veterinary Pathologist  
(BSc BVMS FRCPath MRCVS)



# BSAVA 2023: stand D601



**ONE WORLD:** We all share the same planet and take responsibility for the relationship between humans, animals and environment.

**ONE PASSION:** Empathy and love of animals is at the very heart of what we do as a profession.

**ONE TEAM:** We work together towards a common goal of prevention, control, diagnosis, and treatment of diseases affecting animal health.



LABORATORIES



**Sandra Wells,**  
Operations Manager  
and the Head of  
Sustainability  
Committee at the labs

The labs will be recycling BSAVA stand from the previous year but will add a little twist to it and as an exhibition special we will be offering **FREE carbon neutral CPD subscription for ALL your practice team** if you qualify. Interested? Please feel free to visit our stand **D601** and find out more.

NationWide Laboratories team will happily talk to you about their high-quality veterinary diagnostics, pathology proficiency and customer support, but first and foremost they will be there to listen to you and offer you partnership and support you need. We will also be giving out **FREE CPD webinar bundles**. All you need to do to get into the prize draw is to visit their stand, fill in your details and answer a few questions. There will also be some **sustainable goodies** up for grabs and one or two surprises too, so come on in!

*"NationWide Laboratories is committed to reducing the impact of our operations on the environment. We are always looking for new green initiatives to adopt working towards a more sustainable future. We also believe in the power of veterinary education hence offer a wide range of online CPD on various platforms thus helping to cut down on travel wherever possible which contributes to the combined effort of reducing emissions"*

**"ONE WORLD. ONE PASSION. ONE TEAM"** is a theme NationWide Laboratories has chosen for BSAVA 2023 Congress and Exhibition emphasising our focus on **sustainability and education**

## SAME DAY PTH

NationWide Specialist Laboratories is offering a SAME DAY service for the analysis of canine, feline and equine parathyroid hormone (PTH). Parathyroid hormone-related protein (or PTHrP) is assayed once a week on Wednesday with results available on Thursday. If you want our RAPID PTH service as well as PTHrP, please submit 2 separate frozen EDTA Plasma samples. PTHrP will continue to be analysed once a week. **For more details, please contact us at 01223 493400.**

## GERIATRIC PET PROFILES

Comprehensive testing is recommended for senior dogs and cats, due to the higher risk of underlying disease. There are four main categories of wellness testing for senior pets: **complete blood count, biochemistry profile, urinalysis, and thyroid hormone testing.** Our canine and feline geriatric profiles include a chemistry panel to **evaluate kidney and liver function, antibody and protein levels, blood sugar, cholesterol, electrolytes and more.** **For more information, contact us at [info@nwlab.co.uk](mailto:info@nwlab.co.uk).**



## EQA SCHEME

We operate an independent National EQA scheme for all practices and for a wide range of analytical equipment brands. This ensures that equipment and reagent problems that uniformly affect a single brand will be identified. Reports will be generated from the data submitted and provided to individual participants or group practice headquarters. Options:

- Biochemistry EQA and "paired sample" comparison testing for Haematology analysers.
- Biochemistry EQA only.
- "Paired sample" comparison testing for Haematology analysers only.

**For more information, contact us at [info@nwlab.co.uk](mailto:info@nwlab.co.uk).**

# Our special guest at BSAVA: Twycross Zoo is 60 this year!

Twycross Zoo is one of the UK's major zoos, caring for around 400 animals from over 80 species. It welcomes around 600,000 visitors a year to its 100-acre site in Leicestershire and is working at the forefront of conservation and scientific research – making a global impact for endangered animals around the world.

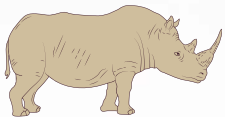
In 2023, Twycross Zoo celebrates its 60th anniversary, and throughout the year will highlight their history, animals, team and impact on conservation across the last six decades.

Starting from humble beginnings, founders of Twycross Zoo, Molly Badham and Nathalie Evans, were previous rival pet shop owners, who realised their shared love of primates. They moved to Twycross village in 1963 and opened the gates to the zoo in May that year; becoming the only female zoo founders in the UK, at that time.

The pair gained notable fame through their collection of unique animals and their TV Chimps, who starred in the PG Tips commercials for many years. They were pioneering in ways of working and went on to set standards for zoos, for many years to come. Since then, Twycross Zoo has evolved further into a world-renowned conservation charity. Today, it is recognised as the 'World Primate Centre' and is the only UK zoo, and one of four worldwide, home to all four great ape species – gorilla, orangutan, chimpanzee and bonobo.

## David Meek, Interim CEO of Twycross Zoo

*"We're delighted to be celebrating an incredibly special anniversary at Twycross Zoo this year. For six decades we have supported conservation, education and research of some of the most endangered species on our planet, whilst providing families with so many fun and happy memories too. As a conservation charity, we are committed to inspiring and educating our visitors about the challenges our planet faces and the practical actions we can all take to protect it. A visit to Twycross Zoo is so much more than a day out, it allows us to continue our vital conservation work locally, nationally and across the globe. We are looking forward to celebrating our diamond anniversary with our visitors, colleagues and partners as we unveil multiple events throughout 2023, beginning with a showcase of our history. Please join us for these celebrations as we look forward to the next 60 years of Twycross Zoo".*



## Fun Facts

Twycross Zoo recently unveiled its 2030 vision, which includes building the UK's first and only National Science and Conservation Centre. A £19.9 million project, funded by the Government's Levelling Up Fund. Creating a hub for animal conservation work in the heart of the UK; including classrooms, laboratories, lecture theatre and accommodation.

Since using NationWide Laboratories the smallest animal they have performed laboratory testing for is our female Turquoise gecko – she weighs just 4g. The largest animal they have performed laboratory testing for is our female Eastern black rhino – she weighs 1200kg.



## DREAM TEAM!

NationWide Laboratories has been working with Twycross Zoo since 2018. They process almost all our laboratory samples from all species of animals which includes faecal samples for parasitology and culture, blood samples for haematology and biochemistry and cytology samples.

Having the overnight courier service really helps the vets at Twycross Zoo to get results in a timely fashion to help with decision making.

They also recently supported a Masters level research project looking into the use of SDMA to diagnose chronic kidney disease in Black howlers. This involved testing over 100 samples on the same day!

## COMPETITION TIME

To celebrate Twycross Zoo's 60th anniversary, please take part in our competition. To be in for the chance to win a cuddly orangutan and print of our male orangutan's footprint, taken during a routine preventative health check, answer the following question:

Twycross Zoo regularly carries out preventative health checks on their animals to ensure they are all fit and healthy. 'Batu' our 33yr old male **Northwest Bornean orangutan** can be weighed through positive reinforcement training to ensure he maintains a good weight and to allow proper dosing for his anaesthetics. How heavy is Batu? **NB! He is the big one in the photo.**

The person with the answer in kilograms to the nearest 1kg will be entered into the prize draw to win. Click below to enter.



Batu

[CLICK HERE](#)

# Pathology corner

## with Kerry Freel

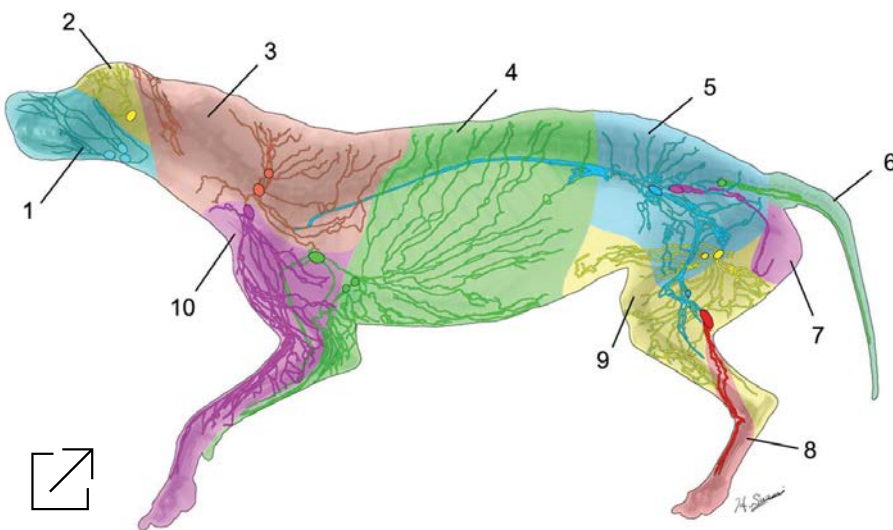


**Help!  
Which Lymph  
node?**

How often do you get back a report to find one of our pathologists has advised sampling of the regional node? .....But which one is the right one?

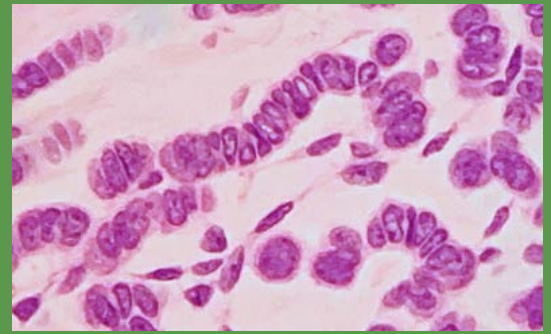
Sometimes the node draining the site can be quite some distance from the lesion, which can lead to confusion over which is the right node for investigation. Well with the handy lymphosome map we've reproduced below there's no need to search the depths of your memory of those anatomy lessons or go scrabbling for the mobile to look up google. Each area is colour coded so no matter where your lesion is you can easily identify the right nodes for sampling.

Reference: Lymphatic territories (lymphosomes) in a canine: an animal model for investigation of postoperative lymphatic alterations. Hiroo Suami 1, Shuji Yamashita, Miguel A Soto-Miranda, David W Chang. PLoS One. 2013 Jul 24;8(7):e69222. doi: 10.1371/journal.pone.0069222. Print 2013.



Color-coded diagram of the lymphatic territories (lymphosomes) with lymphatic vessels shown distally from their corresponding lymph nodes: 1, submandibular; 2, parotid; 3, dorsal superficial cervical; 4, axillary; 5, medial iliac; 6, lateral sacral; 7, hypogastric; 8, popliteal; 9, superficial inguinal; 10, ventral superficial cervical.

## DON'T THEY LOOK SIMILAR?

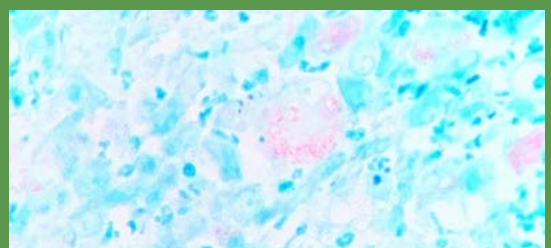
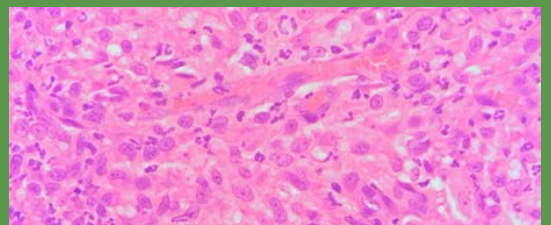


Follicular tumours are one of the prettiest tumours we get a look at. Trichoblastomas in particular can have a very varied appearance. In this mass the cords of cells have elongate nuclei with a palisaded appearance resembling caterpillars.



## H&E STAIN VS ZIEHL NEELSON

Mycobacterial disease in cats can appear as a bit of a surprise. In this case samples from a suspected mass were found to be comprised of mixed granulomatous inflammation. There is no evidence of the underlying culprit in the H&E stain but when we add Ziehl Neelson we can see clusters of acid fast organisms. In this particular case these agents were identified on PCR as *Mycobacterium lepraemurium*, the causative agent of feline leprosy.



# Thanks for your Feedback

**Andy Price, Tweed House Veterinary Surgery:** We have been using NWL for many years now and are always happy with their prompt collection and processing of lab results. The pricing and structure of services on offer are clearly set out and allow us to offer first class diagnostics in our busy first opinion practice in an efficient manner. We appreciate the support that is available at the end of the phone and in the way of CPD that NWL provide for our team.



**Julian Norton, The Yorkshire Vet at Sandbeck Vets:** Since working at Sandbeck I have been incredibly impressed with your lab - I'd go as far as to say it is the best service I have experienced in all my time in practice!

**Phillipa Dobbs, Twycross Zoo:** Twycross Zoo have used NWL for a few years. We have found the service to be first class and they are always happy to help with any queries we may have and offer extra testing if we need. The sample collection is a great service with us being based so rural.



**Dr Gillian Maxwell, Cestria Veterinary Centre:** Since I find the sample pickups reliable and easy to organise, all the staff are helpful on the phone.

## What do you expect from your lab?



### HOW CLEAN IS YOUR PRACTICE?

We offer you a microbiological screening programme to screen your facilities and equipment. Swabs are supplied with simple instructions and a postage paid envelope for return to our laboratory for testing. We test for aerobic and anaerobic cultures as well as specific cultures for yeast and fungi. This comprehensive testing includes (but is not limited to) cultures for the following major groups of organisms: *Enterobacteriaceae*, *Enterococci*/*Streptococci*, *Pseudomonadaceae*, *Staphylococci* (Meticillin resistant/sensitive) as well as spore forming bacteria such as *Bacillus* and *Clostridium spp.*

### HYDROTHERAPY POOL WATER TESTING



We all know that hydrotherapy in conjunction with veterinary treatment can assist in improving the rate of recovery and healing of animals after injury or surgery. At NationWide Laboratories we can assist you in demonstrating to your clients that your facility meets the guidelines for water safety and quality through our hydro pool testing service, which meets the requirements of hydrotherapy associations such as CHA and NARCH.

We will provide you with the sample bottle, guidance on how to take the sample and prepaid postage to get the sample to us. You will receive a report of printed enumerated results for total viable count at 37 degrees itemising *total coliforms*, *E. coli*, *Pseudomonas aeruginosa* and guidance for interpretation.

Simply call 01253 899215 or email [info@nwlabs.co.uk](mailto:info@nwlabs.co.uk) for more information.

# NationWide Laboratories specialists help pathologists of the future



At the start of the new year, specialist veterinary pathologists, Dr **Sandra Dawson** (Anatomic) and Dr **Stacey Newton** (Clinical) contributed to delivering lectures to pathologists-in-training at the Royal College of Pathologist's veterinary trainee day.

The **Royal College** ([www.rcpath.org](http://www.rcpath.org)) hosted a fully funded event which saw over 60 delegates and pathologists from around the world attend a series of lectures organised by our own veterinary anatomic pathologist in training and royal college trainee representative, Dr **Marvin Firth**. Lectures covered a series of topics relevant towards both Fellowship of the Royal College examinations as well as international board exams with the American and European colleges of veterinary pathology. Dr Dawson presented a highly practical session that looked at training those delegates with a background in anatomic or histopathology and providing them with additional skills and confidence in tackling cytological examination of cases. The session capitalised on Dr Dawson's knowledge of both histologic and cytologic examination of common cases and provided many hints and tips that delegates could take away and start using. Dr Newton delivered an engaging lecture on the topic of hypercalcaemia (elevated circulating calcium levels). This condition is particularly important when considering the potential differentials including malignancies (such as lymphoma and anal sac adenocarcinoma) but also metabolic diseases such as hypoadrenocorticism, and primary and secondary (renal disease) hyperparathyroidism. Trainees were able to interact with the lecturers in small groups and active discussion was encouraged.

Further lectures encompassed a wide range of topics from a variety of experts in pathology related fields. This included those working not only in diagnostic pathology, but in pharmaceuticals, toxicologic pathology and research. Of highlight were lectures that highlighted the role of veterinary pathologists in the recent pandemic and vaccine development; the future of digital pathology and tools and tips for surviving the arduous training process! NationWide Laboratories is committed to developing pathologists of the future and providing education that is both relevant and up to date for the demands of modern veterinary medicine.

## ONLINE LEARNING

**Interactive hub in partnership with The Webinar Vet:** Enjoy bitesize pieces of valuable content coming in various formats to make your learning easy and engaging. Watch. Read. Listen. Communicate. We are open 24/7 all year round and accessible from the comfort of your home.

[CLICK HERE](#)

**Labfacts - now on Wikivet:** Laboratory diagnostic reference guide written by NationWide Laboratories pathology team and aimed at helping you investigate diseases in small animals and horses.

[CLICK HERE](#)

**Multimedia hub in partnership with Improve Veterinary Practice:** Articles and podcasts by NationWide Laboratories pathologists. Advice on sample collection. Ask your laboratory expert series. Case studies and videos. Engaging and accessible content available 24/7 from any connected device.

[CLICK HERE](#)

## ALLERGY TESTING

**allervet®** offers a comprehensive package to assist in the diagnosis and treatment of allergic disease in dogs, cats and horses. The **allervet®** test is a serological assay for allergen-specific IgE designed exclusively for veterinary use.

- Economic screening test for environmental allergens including fleas and *Malassezia*
- Intelligent panels tailored for significant UK allergens
- Antipruritic therapy may not require withdrawal prior to testing
- High sensitivity and specificity compared to intradermal skin testing
- Results are highly reproducible

**allervet®** is offered to you exclusively in the UK by NationWide Laboratories, leaders in veterinary clinical pathology. **For more details, visit [www.allervet.com](http://www.allervet.com) or telephone 01253 899215.**



# NationWide Laboratories team's picture purrfect pets



**Sally Lowe, Accountant:** Meet Murphy and Magil, my 2 OAP rescue donkeys from Donkey Sanctuary. They have been part of my life for over 4 years and between my boys and my 5 rescue rabbits there is never a dull moment. Even though they are in their late 20s they still cause mischief and stop the traffic during our weekly walks around our village.



**Deborah De Pablos, Laboratory Scientist:** Blacky came into my family 12 years ago. His mother and father were beautiful German pointers. We had a beautiful litter and he stayed at home. In these 12 years he has given us a lot of things, company, happiness, but also sadness when he got sick. He was a very clever dog, he knew what was happening to you just by looking at you. As a good hunting dog, he practiced the sport of hunting, which he loved. Unfortunately, he died a year ago of old age. We all carry him in our hearts. I love you "Orejas", wherever you are.



**Jana Leontescu, Laboratory Scientist:** This is Happy. She is a rescue cat and she lives with my mum now. She could have been a banker or even a Chancellor of the Exchequer!



**Ellie Williams, Laboratory Scientist:** Admiral Blue (Addy) is nearly 5 months old and he is just adorable, all he wants to do is cuddle and play.

## VETERINARY WOMAN: SPOTLIGHT ON NATIONWIDE LABORATORIES TEAM

The woman behind the microscope



Alison Lee

"Be friendly and smile and make a small part of someone's day a nice experience..."



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The leader who believes change starts at home

"I want to inspire people that I have interactions with and leave them feeling a little bit better"



Sandra Wells



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Helen Campbell and Alina Bodnariu – When colleagues become friends

"I personally believe human connection is a very important thing, at home and at work, when you have friendship, it makes life so much better."



Alina Bodnariu

& Helen Campbell



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