HGV

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PARAFFINALIA NEWSLETTER

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The HGV aims to provide a dynamic continuing education program in which all persons with an interest in Histology and Histotechnology are freely invited to participate.

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Committee Page

The members of the Histology Group of Victoria 2017 are:

Name	Institution
Mark Bromley	Melbourne Pathology
Adrian Warmington	St. John of God Pathology (Victoria)
Kerrie Scott-Dowell	Dorevitch Pathology/LeicaBiosystems
Elizabeth Baranyai	Cabrini Health
Samantha Arandelovic	St. John of God Pathology (Victoria)
Alison Boyd	St. Vincent's Pathology
Kellie Vukovic	Sullivan Nicolaides Pathology
Sue Sturrock	Peter MacCallum Cancer Centre
Meghan Leo	Peter MacCallum Cancer Centre
Kellie Madigan	Leica Biosystems

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Your Invitation to Attend

The organising committee invites delegates, presenters and trade representatives to Hobart for the 8th National Histology Conference, and the first upon Tasmanian soil.

Delegates will experience a range of workshops and plenary sessions designed to provide continuing professional development in histology, showcase modern equipment and consumables and experience a little of what Hobart and Tasmania has to offer.

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Early registration closes 16 August 2017

Full Registration

AUD$450 – Early
AUD$590 – Early + Dinner
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Workshops

Friday AM & PM
AUD$95

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AUD$150 – Student

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AUD$270 – Early Saturday
AUD$180 – Early Sunday
AUD$320 – Standard Saturday
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AUD$ 75 – Student Sunday

Register at:

http://www.nationalhistologyconference.com/registration

Submit an Abstract

On behalf of the Program Committee, we invite you to submit an abstract for presentation at the National Histology Conference.

The organising committee encourages submissions on topics related to disgnostic or research Histology/Histopathology.

You are invited to submit an abstract for Oral Presentations, Workshops and Display Posters.

Please visit:
http://www.nationalhistologyconference.com/abstracts for further information.

Workshops

Friday AM

1.Tissue recognition – The Basics
2.Pathology of Surgical Cut-up

Friday PM

1.Tissue recognition – The weird, the wonderful and the wacky
2.Perfecting the GRAM stain

CONFERENCE DESIGN

Please visit the conference website for more information

www.nationalhistologyconference.com

Conference Design | mail@conferencedesign.com.au

BLURB FROM THE BURBS

The first scientific meeting of the year went well, with interesting presentations from three RMIT students. The relocated Peter Mac is proving to be a popular venue.

Our next scientific meeting is scheduled for Thursday May 11th . It is about tissue banking at The Donor Tissue Bank of Victoria. It will be held at our now regular venue of Peter Mac. Come along early, have a bite to eat and catch up with your colleagues from around Melbourne. And whilst you have your calendar out, grab a big thick permanent marker pen and block out the whole evening of Friday July 21st with the words "HGV Trivia Night" which will once again be a great night.

The organisation of the National Histology Conference in Hobart in November is also progressing well. The program is looking great. Check out the website, and get your registration in. It is shaping up to be a great conference!

http://www.nationalhistologyconference.com

Mark Bromley

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Under the Microscope with Kellie Madigan

Senior Scientist, Leica Biosystems, Melbourne R&D

1. What was your first part-time job?
2 weeks at Pizza Hut – working the lunchtime shift just as they started the All You Can Eat Menu – thankfully I was offered my first lab position the same fortnight – I am not sure who was more glad when I left, me or them

2. How long have you worked in histology?
24 years in Pathology, I started in Specimen Reception, 22 years in Histology (very important to know that I was only 17 when I started in a path lab)

3. When people ask, "So, what do you do?" How do you explain Histology?
I explain that Histology is the study of cells and tissues of the body, and any samples taken from the body need to be examined at a microscopic level for determining normal vs disease states – a common example of a disease state is a cancer

4. What is a skill you'd like to learn and why?
Running – I always admire the look of a skilled runner – but I am sadly aware that that will never be me

5. If money was no object, what would you do all day?
Be a philanthropist and sit on the boards of many institutions, some charity, but also educational and art

6. What's an ideal weekend for you?
Rainy and cold so I am not expected to be gardening or pretending to be having fun outdoors, a couple of books, a TV series downloaded, wine and gourmet snacks and a comfy couch – probably the main reason I will never be the answer to question 4.

7. If you could take only THREE items with you to a deserted island, what would they be?
My handbag (as it contains a lot of what I need each day), sunscreen and a large hat

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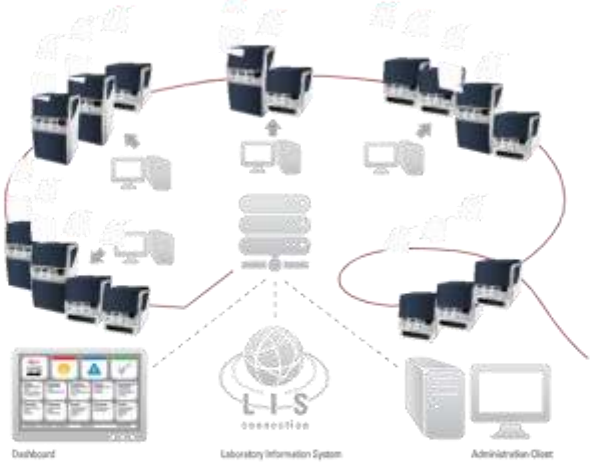

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8. What is the best conference you have ever attended?
National Histology Conference in Adelaide – but I am probably a little biased

9. What's on your bucket list this year?
Attending the NSH which is being held in Florida, right next door to Disney World, and only an hour from NASA at Cape Canaveral – that's 3 ticks checked off the list

10. Where do you most want to travel, but have never been?
Russia

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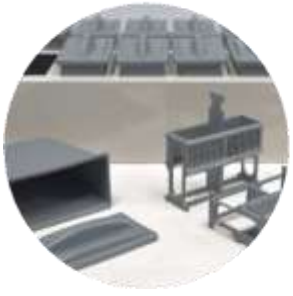

Slide staining dish and rack

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The set comes with 12 slide staining dish (10 grey, 2 green), 2 slide staining racks, and a metal housing.

Review of Scientific Meeting :

Young Scientists Leading new Understanding in Novel Concepts

The 2017 HGV Scientific programme opened with the now traditional Project presentations from recently graduated RMIT students. With only 13 weeks to establish a competent understanding of new techniques and scientific principles, these invited speakers applied immunohistochemistry (IHC), in situ hybridisation(ISH) and special stains to a extend knowledge of paediatric spirochaetosis, canine mammary tumours and cost savings in ISH.
Elisa Cocciardi presented her work on intestinal spirochaetosis in children with inflammatory bowel disease performed at the Royal Children's Hospital under the guidance of Bronwyn Christiansen and Prof Duncan MacGregor.
Intestinal spirochaetosis (IS) is an unusual infection in children and its clinical significance is unclear.
It can be identified on H&E and by IHC utilising an antibody to Treponema pallidum. When positive it is unclear whether it causes tissue damage or is a commensal. Paediatric colonic biopsies exhibiting evidence of IS on H&E were submitted for IHC staining. Five cases between 2014 and2016 were found to possess spirochaetes. IHC & H&E in combination was proven more sensitive than H&E alone. IHC for Treponema pallidum may assist in the differential diagnosis of bowel diseases in children.

Shabneet Sohi presented a thorough evaluation of all steps involved in ISH utilising oligonucleotide (oligos) and peptide nucleic acid (PNA) protocols at RMIT with Prof Janine Danks supporting her work. This work looked at replacing an expensive PNA commercial kit with cheaper oligo probes for cost savings and time efficiencies performing ISH.
Whilst fluorescent ISH (FISH) has proven to be sensitive and reproducible it is not a permanent preparation, so chromogenic ISH (CISH) is the preferred, but more expensive ,option for examining gene abberations. CISH is expensive and so a robust cheaper alternative using oligo probes was tested.
Many variables were investigated with contrasting times, concentrations and temperatures to obtain a protocol for oligo probes which gave comparable results to those of the PNA kit. Surprisingly, the oligo probe protocol was found to be just as efficient as the PNA probe kit providing the possibility for similar outcomes using a cheaper and quicker alternative. These methods require further validation, but provide a promising future.

The final speaker, Jacqueline Lam, completed a Master of Laboratory Medicine at RMIT during which time she investigated the expression of RANKL and its receptor RANK protein in canine mammary mixed tumours (CMMT).
RANKL and RANK receptor are signalling molecules associated with bone remodelling. Essential for the development of mammary glands for lactation, they are also involved in breast cancer metastasis to bone. Inhibition of RANKL could reduce the risk of inherited disease.
Fifty four CMMTs were stained with Masson Trichrome and Toluidine Blue to examine fibrosis related to CMMT and overlaid with IHC staining for RANKL and RANK. A staining index was established to reflect the intensity and of staining related to the malignancy of the tumour.
RANKL was found in ducts and glands in benign CMMT, whilst malignant CMMTs showed RANKL in stromal areas only. This information may add to the contribution RANKL and RANK make to breast cancers with further investigation.

Once again, despite limited time, these young scientists have extended our knowledge base and were received with great enthusiasm by a warm audience. We thank them for their contribution to the HGV.

Sue Sturrock

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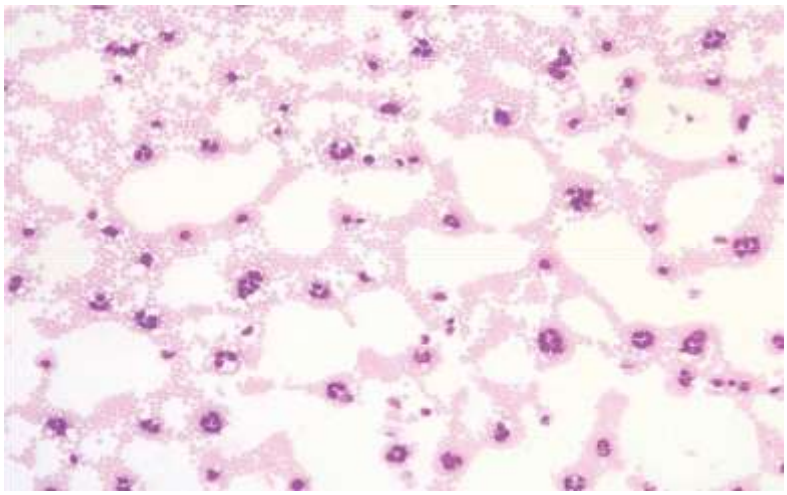

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Tumours that have Descriptive Diagnostic Names

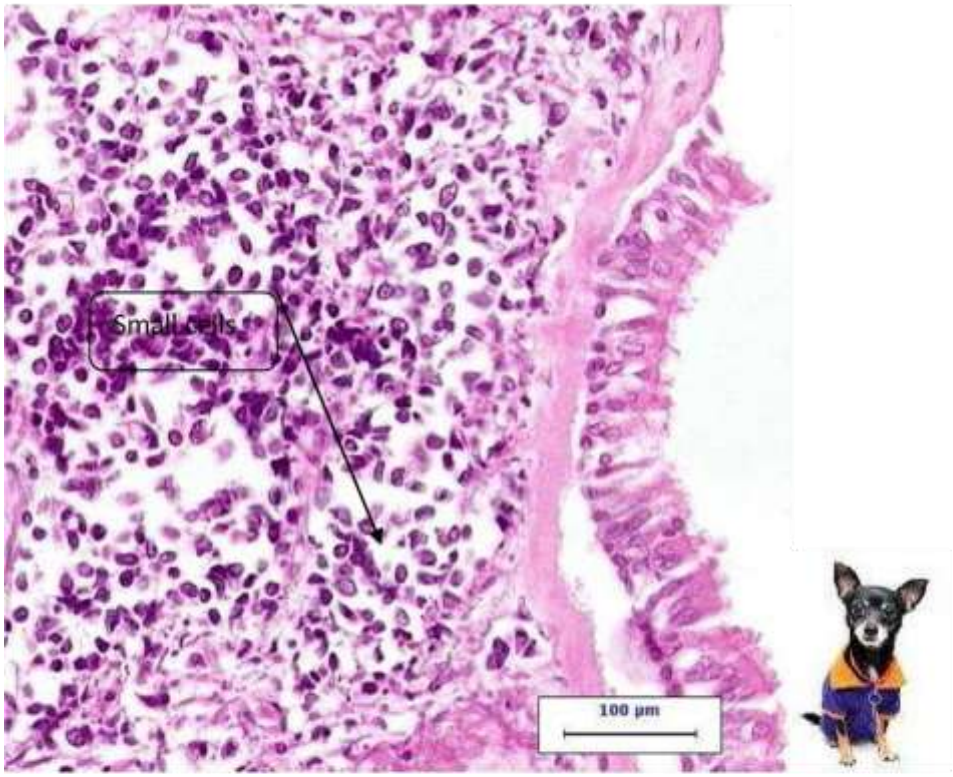
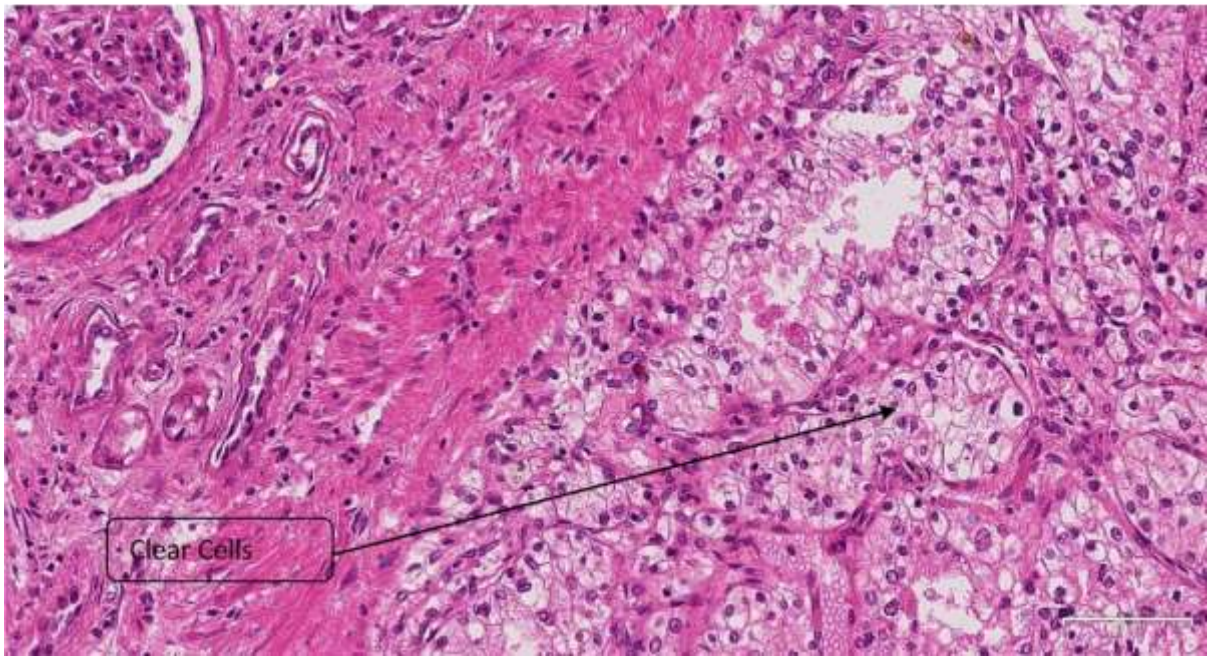


Figure 1 Small Cell tumour of the lung

Figure 2 Renal Clear Cell tumour



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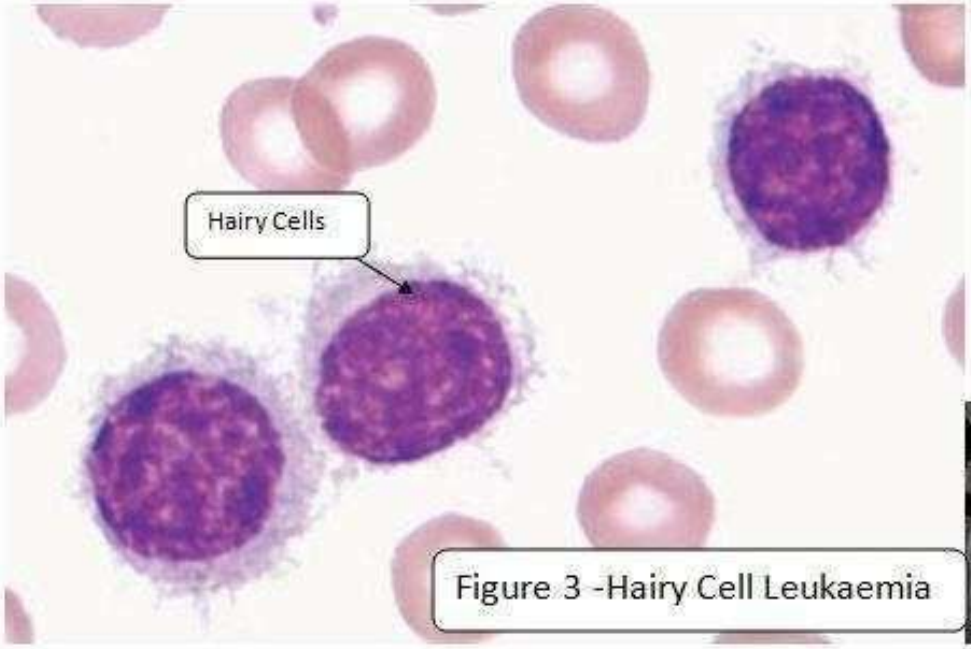
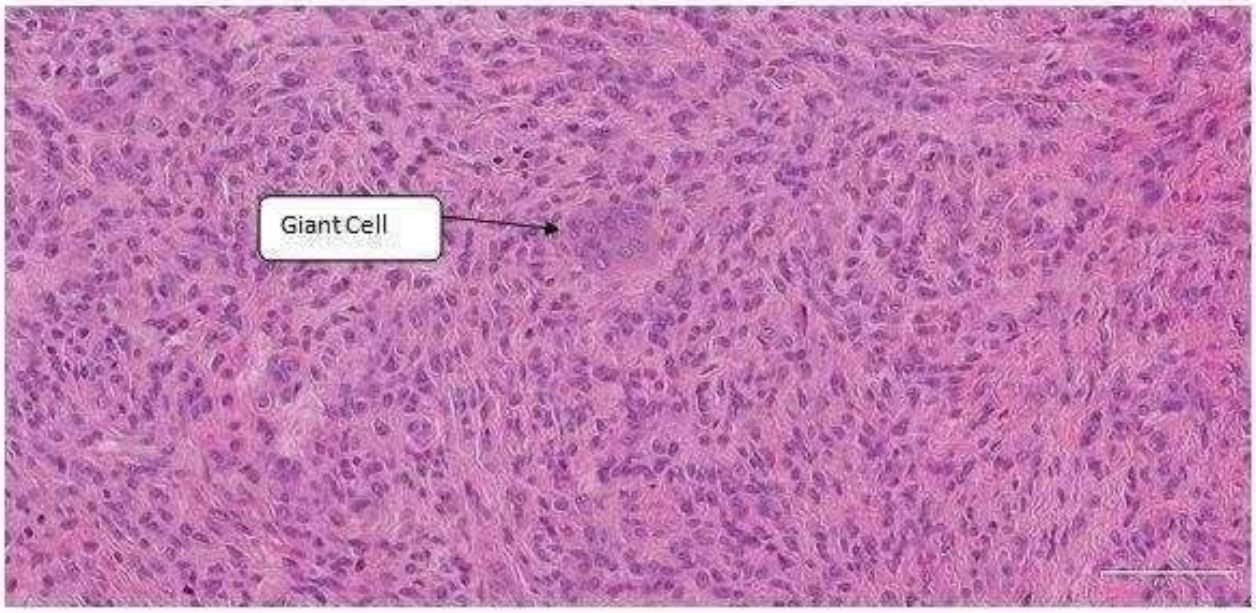


Figure 3 -Hairy Cell Leukaemia

Figure 4- Giant Cell Tumour of the finger

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Journal Review:

Characterizing kidney structures in health and diseases using eosin fluorescence from hematoxylin and eosin stained sections.

Author: Rehan Ahmed Siddiqui, Nurul Kabir, Muhammad Ateeq, Shabana U. Simjee, Muhammad Raza Shah.
Journal of Histotechnology, 2016, Vol.39, No.4, p107-115

The authors of this article decided to see if the natural fluorescence of eosin could be used to visualize and quantify histopathological changes in induced kidney diseases by the use of specific filter cubes. If this worked, then perhaps it would negate the need for the usual immunofluorescence that is currently used in diagnosing renal pathologies. The haematoxylin and eosin stain (H&E) which is routinely performed on such biopsies only show so much detail with regards to pathology, and immunofluorescence can show so much more, that it would be of real benefit if the same slide could be used to show both, simply by the use of certain filters.

The animals used to perform this research were mice. These were divided into two groups, a control group and those induced by an intramuscular injection of 10ml/kg body weight of 50% glycerol, which induced an acute kidney injury. After 24 hours, the animals were sacrificed and perfuse fixed with Bouin's solution. They kidneys were dissected out, cut longitudinally, and fixed in Bouin's solution for 4 hours. After routine processing into paraffin blocks, the sections were cut at 6µ, and the slides stained with H&E.

The sections were looked at under bright-field microscopy and fluorescence microscopy. Since the fluorescence emission of H&E is mainly confined to the green and red part of the spectrum, a dual channel fluorescence microscope was used. The two filters used were fluorescein isothiocyanate (FITC) (wavelengths: excitation 458-505nm; mirror 505-555nm; and emission 510-540nm), and Texas Red (TxR) (wavelengths: excitation 555-585nm; mirror 575-∞nm; and emission 590-650nm). Up to 30 images were then taken from each of the slides. Other filters had also been used but did not show any images.

The results showed that normal features of the kidney could be observed by this procedure. Proximal convoluted tubules (PTC), distal convoluted tubules (DCT), whole glomeruli, loop of Henle, brush border of the Loop of Henle (LH), and proximal and apical areas of the collecting ducts were easily visualized. In general, the intensity of fluorescence was more with the TxR cube as compared with the FITC cube, but it was noticed that some structures only fluoresce in red or green. Other areas showed a similar intensity and appeared yellow. These differing intensities provided a good contrast of red, green, and yellow with the dual channel filter cube. This dual channel filter cube was then selected for further studies.

The damaged kidneys were then looked at and the diseased parts could be easily identified as they were in the normal kidneys. Red fluorescence was higher than green in the normal kidney for almost all structures, especially in the brush border region of the LH and the peripheral regions of the DTC. There was little difference in the apical regions of DTC, whole glomerulus, and apical regions of the collecting ducts, peripheral regions of the DTC, brush border of the LH and peripheral regions of collecting duct. Significant increase in fluorescence intensity in the damaged regions of the PTC was thought to be due to the denaturation of proteins during necrosis resulting in the exposure of more eosin-binding sites.

Thus it was concluded that eosin fluorescence may be used as an observational tool to aid in the identification of different kidney structures in both health and disease conditions. Protein denaturation, necrosis, cast deposition and fibrosis are more easily identified by less experienced persons using this technique.

Review by Elizabeth Baranyai

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MAY EDUCATIONAL MEETING

Speaker: Kellie Hamilton
"Tissue Banking at the Donor Tissue Bank of Victoria"

Dr Julie Lokan
"Pathologist's Role in Liver Transplantation"

Date: Thursday 11th May 2017

Time: 6:15 – Refreshments
6:45 – Presentation

Venue: Foyer- Level 7 Lecture Theatre B
Peter MacCallum Cancer Center
VCCC Building
305 Grattan Street, Parkville

Parking:

1. VCCC - enter off Flemington Road ($14 for 1-2 hours)
2. Wilson Parking – 33 Bedford Street, North Melbourne (Pay by credit card at machine & display ticket - $3 after 4pm)
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Date: **Friday 21th July**

Time: **6.30pm-10.30pm**

Location: **The Metropolitan Hotel**
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(corner Lt Lonsdale Street)
Melbourne VIC 3000

Price: **$25 per person**

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Please be quick as tables are limited and sold on a first in best dressed basis! (Menu to follow at a later date)

Limited street parking is available or it is only a short walk to Flagstaff Station.

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Future Events: 2017

Thursday 11th May
Donor Tissue Outcomes in Victoria
Venue- Peter Mac

Friday 21st July
Trivia Night
Venue- Metropolitan Hotel 263 William St, Melbourne

Thursday 21st September
IHC
Venue- Peter Mac

Thursday 16-17th November
National Histology Conference Workshops
Venue- Hobart

Saturday 18th-19th November
National Histology Conference
Venue Hotel Grand Chancellor , Hobart
Further details
http://www.nationalhistologyconference.com/