

PARAFFINALIA NEWSLETTER

VOLUME 22, NUMBER 3
June 2017

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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Author enquiries and readers wishing to contribute articles or reports can contact the Editor - editor@hgv.org.au

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NATIONAL HISTOLOGY CONFERENCE

17-19 November 2017 | Hotel Grand Chancellor, Hobart

Your Invitation to Attend

November 17th – 19th 2017

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.

Registration

Early registration closes 16 August 2017

Full Registration

AUD\$450 – Early
AUD\$590 – Early + Dinner
AUD\$550 – Standard
AUD\$690 – Standard + Dinner

Student Registrations

AUD\$150 – Student

Day Registrations

Saturday or Sunday

AUD\$270 – Early Saturday
AUD\$180 – Early Sunday
AUD\$320 – Standard Saturday
AUD\$230 – Standard Sunday
AUD\$100 – Student Saturday
AUD\$ 75 – Student Sunday

Workshops

Friday AM & PM
AUD\$95

Social MONA

Friday PM
AUD\$22 – Ferry
(museum entry AUD\$28)

Conference Dinner

Saturday Evening 6.30-late
AUD\$140

Submit an Abstract

Submission of Oral abstracts is closed.

Poster submissions are still welcome. Submit via the [presentation portal](#) on the conference website.

Workshops

16th November – PM \$95

- Multiplex
Mike Verney, Biocare Medical

17th November – AM \$95

- Tissue recognition – The Basics
Dr Tayiba Tayiba

- Pathology of Surgical Cut-up
Dr Ros Malley

17th November – PM \$95

- Tissue recognition – The weird, the wonderful and the wacky
Dr Nada Dickinson

- Perfecting the GRAM stain
Members of the Anatomical Pathology Quality Assurance Program and Technical Committee Members

18th November – AM \$70

- Molecular Breakfast
Scott Reed, Agilent Technologies

[For more full workshop descriptions click here.](#)



Please visit the conference website for more information
www.nationalhistologyconference.com

Blurb from the Burbs

Greetings from the Burbs,

Despite the crisp chill of winter in the air, our May scientific meeting was well attended. Thank you to Dr Julie Lokan and Kellie Hamilton for their interesting presentations on tissue banking and liver transplant pathology. Whilst our next scientific meeting isn't scheduled until September, the brumal conditions signify trivia night is fast approaching. There are still plenty of places available, but chairs are filling up, so you don't want to be late and miss out on what perennially proves to be one of the best nights on the Histo social calendar. The trade are once again showing their vital support of the event, one that would not occur without them. So get your tables organised and brains honed for a fun night.

The committee continues to work with representatives from the other state groups on the National Histology Conference program in Hobart, which continues to progress well. The program is looking great, with lots of content covering all areas of interest. Check out the website, and get your registration in. Hobart is a great city in which to spend a day or three pre-conference, for those lucky enough to be able to.

Cheers,

Mark.

Mark Bromley

President HGV

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20x: 0.275 $\mu\text{M}/\text{pixel}$
40x: 0.14 $\mu\text{M}/\text{pixel}$
63x: 0.086 $\mu\text{M}/\text{pixel}$

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95.14769 Rev. A - IMC-3045-REV-A 5/2017

Under the Microscope with Susan Green

1. What was your first part-time job?

Waitress in the family pub.

2. How long have you worked in Histology?

16 years :/

3. When people ask "What do you do?", how do you explain histology?

"I'm a medical scientist in pathology, but not the blood bit. We get bits of people." It does depend on who's asking though :)

4. What is a skill you would like to learn and why?

Golf, to earn millions, and travel the world (see also tennis).

5. If you won the lottery what would you do?

Buy an alpaca farm and a vineyard.

6. Who do you admire the most and why?

My Dad. For making his life a success from humble beginnings.

7. If you could witness any event of the past, present or future, what would it be?

Collingwood winning a grand final this year...



8. What is the best conference you have attended?

Hmmmm..... Can't say I've been to one....yet!

9. If you could keep only five possessions what would they be?

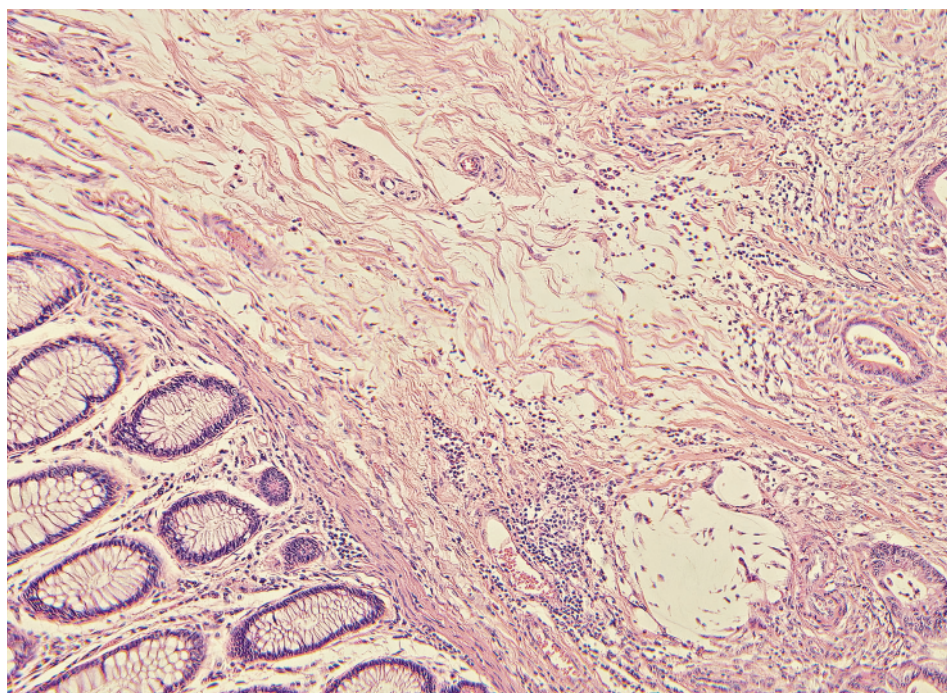
My two miniature schnauzers (Alf and Frank), iPhone, coffee machine, and money.

10. What is your dream holiday destination and why?

Japan...atm... I've been reading about it recently and it sounds beautiful, interesting, and safe to travel alone.



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Stain image: Colon cancer.

Review of 11th May Scientific Meeting:

Tissue Banking at the Donor Tissue Bank of Victoria

And

Pathologists Role in Liver Transplantation

Kellie Hamilton started off the night for us with her presentation on tissue banking at the Donor Tissue Bank of Victoria. Kellie is a Senior Scientist at the Donor Tissue Bank of Victoria (DTBV) and has worked there for 22 years.

The DTBV was established in 1989 and was the first multi-tissue bank in Australasia. The DTBV screens, processes, stores, tests and distributes multiple types of tissue to provide Australian surgeons with safe and effective tissue grafts for transplantation in many areas of orthopaedic, cardiothoracic, reconstructive surgery and burn care.

There are many instances in which a person may need a tissue transplant. Tissue transplants can be autografts (tissue transplanted from one site to another on the same patient) or allografts (tissue transplanted from a genetically non-identical donor of the same species). Tissues that can be transplanted are pulmonary and aortic heart valves, pericardium, long bones, iliac crest, tendons, ligaments, skin and corneas.

A donor doesn't always need to be dead to donate. One example is with a hip replacement the patient can donate their femur bone at the time of the hip replacement. A second example is where a patient receives a heart transplant and their heart that was removed still has a usable value that can be donated.

Key donor candidates though are those from sudden unexpected deaths such as a car crash or suicide. Tissue needs to be collected within 24 hours of death. This time frame can be hard to meet at times due to numerous reasons such as the time of death is not known the last time the person was seen alive is used, finding out who the next of kin is and getting a hold of the next of kin for their consent and forms to be filled out. The time it takes to remove the tissues can be up to 10 hours.

The process of banking donor tissue starts with the DTBV being informed of a potential donor between 0 – 70 years old. The DTBV then needs to obtain consent from the family and have a questionnaire filled out. Permissions may also need to be gained from doctors, pathologist and/or coroner to take the tissue. The potential donor then needs to pass the long list of exclusion criteria (e.g. no track marks, no tattoos or piercings within the last 6 months). The physical assessment of the donor, CT scan, police reports, GP medical records and pathologist's advice and time frames are all looked at.

The tissue retrieval is done on-site at the DTBV in an operating standard theatre by forensic staff. The donor is reconstructed after tissue retrieval and mandatory infectious disease testing is done on all the retrieved tissue. The tissue can then be stored for up to 5 years. After the tissue has been reviewed and is acceptable for transplantation it can be stored for up to 5 years before being distributed to a hospital that needs it.



Delphic AP

Specimen Preparation

Kentish Plover

Test Details

Test ID	16/S00297	NHI	PID0003
ID		Urgency	Routine
nt name	Plover, Kentish		

Specimen Details

Specimen ID	1 (1 of 1)	Blocks	10
Specimen Type	APPER	Remaining	No
Specimen Description	Appendix		

Details

Block	Pieces	Procedures	Block Type	Hold	H & E	Decal	Block Comments
1/A	Not Used	1 HE	Paraffin	No	1	N/A	
1/B	Not Used	1 HE	Paraffin	No	1	N/A	
1/C	Not Used	1 HE, AB	Paraffin	No	1	N/A	
1/D	Not Used	Many AB	Paraffin	No	1	N/A	Block contains small specimen fragments
			Paraffin	No	1	N/A	
			Paraffin	No	1	N/A	
				No	1	N/A	
				No	1	N/A	
				1	N/A		

Speech

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Garrick Wilson
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www.sysmex.com.au

Kellie gave us a great example of the retrieval and storing process of heart valves. The heart valves are dissected from the heart block. They are then assessed, measured and tested for competency. If any pathology is found a pathologist takes a look and a biopsy is done if they are concerned. The valves are then put on antibiotics for a period of time then transferred to 10% dimethyl sulfoxide, packaged up and controlled rate frozen to maintain cellular viability and then stored until needed. The Ross procedure is one example of how a donor heart valve can be used. The Ross procedure is a cardiac surgery operation where a diseased aortic valve is replaced with the patient's own pulmonary valve. The patient is then given a donor pulmonary valve. This is done as it's found the patient's own pulmonary valve grows out into the aortic much better than a donor aortic valve does. Generally allograft aortic valves need to be replaced every 10 years but the Ross procedure takes it out to 25 years.

Dr Julie Lokan ended the night for us with her presentation a Pathologist's role in liver transplantation. Julie is a senior staff specialist at Austin Pathology. Her areas of interest include liver, gastrointestinal, pancreatobiliary, liver/small bowel transplant and surgical neuropathology.

Liver transplants were first performed successfully in the USA in the 60's. The success rate was quite poor initially with liver transplants as the grafts were rejected by the body for immunological reasons. The discovery of newer immunosuppresses allowed them to get control of the rejection of organs and achieve good success and become a good treatment option for liver disease. In 1985 the first liver transplant in Australia was performed in Brisbane and a few years later the first one was performed in Melbourne.

To date over 5000 transplants have been performed in Australia and New Zealand. There is about 260 a year country wide and around 40 of those are on paediatric patients. The success of liver transplants has kept increasing over the years and now the limiting factor with transplants is the availability of organs.

Federal and state both fund the cost of a liver transplant which is \$150k upfront and then 10-20k per year after. This isn't much though when you compare it to the estimated overall financial burden Australia wide of 50.7 billion per annum for people with liver disease. The health burden is more expensive to keep them alive than to transplant them. In Australia more than 6 million people have liver disease, there are 20 deaths per day and about 7000 deaths per annum from the disease.

The top three liver diseases in Australia are fatty liver disease, viral hepatitis and alcoholic liver disease. There is an estimated 1500 people on the waitlist at any one time and up to 25% of those will die on the waitlist due to organ donor shortage.

A liver transplant is when a whole or part of a donor liver is put into the abdominal cavity of a person to replace their diseased liver and connected up to their own "plumbing". As a person can't survive without their liver, unlike with kidneys where we have effective kidney dialysis, the stakes are higher with a liver transplant.

People with chronic liver disease with life threatening complications like liver need to have a Model for End stage Liver disease (MELD) score > 15 or a Paediatric End stage Liver disease (PELD) score > 17 in order to qualify for a transplant. People with acute liver failure are prioritised over chronic liver

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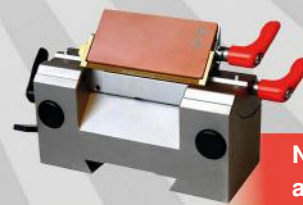
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failure people. People with Hepatocellular carcinoma and genetic disorders are also able to make the list depending on numerous factors.

The best donors are “beating heart donors” (those who are brain dead but still have a circulatory system running and keeping the organs healthy) there is not enough of these donors though so deceased donors who also have circulatory death are also used though the organs aren’t in as good condition. Also not in SA or Vic at the moment but in several other states there are living donors such as parents who can donate the left lobe of their liver to their child.

When a donor liver becomes available there are many things to consider such as the state of the recipient, state of donor liver, paediatric vs adult, size of donor liver and recipient, matching blood groups, surgical experience of the person doing transplant or logistical issues such location of donor liver vs recipient. There are only a few hours to work everything out.

The number one thing the surgeon wants is to do no harm. So it’s a catastrophe when a transplanted liver has primary non function (never works from the beginning of the transplant) as the recipient will then need a re-transplantation within a few days to stay alive. The surgeon also can’t introduce cancer into the recipient. They also don’t want to use a liver that will be only slightly better than the recipient’s current liver as these transplants cost a lot of money, but you also don’t want to waste a very precious resource.

The pathologist can help if the surgeon thinks there are concerning factors clinically relating to the donor, if the surgeon discovers a lesion or if they are unhappy with the way the liver looks they can do a biopsy. It might be a biopsy from the liver or could be from a lesion elsewhere to make sure it’s not malignant which would exclude transplantation. If the donor has a terminal illness or greater than 50% fatty liver change that would exclude transplantation.

A wedge biopsy and two core biopsies from each lobe core of the liver is preferred to evaluate the health of the organ. It needs to be transported quickly to lab and not put in saline which might give it ice crystal artefact, also they can’t put it on card which leaches out the fat and then give an under estimate of the amount of fat in the organ.

Routinely a H&E section is looked at and an Oil Red O if fat is in question (fat vs “shearing artefact”) and a rapid collagen stain can be done as well if how fibrotic the liver is holds important. There is no scientific way to say how much fat is in the tissue a picture match method is used.

Kellie and Julie both gave fantastic presentations that showed the work that goes into both tissue and organ transplants and the importance of both. Donating your tissues and organs can restore health and save the lives of more than 50 people. As the decision to donate will ultimately be your families, inform your family if you wish to one day donate so they can abide by your wishes. If you would like to find out more about donating visit <http://www.donatelife.gov.au/>.

Reviewed by Meghan Leo

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Journal Article Review

Cures by the Clock

Author: Jyoti Madhusoodanan

The Scientist, April 2017, p54-59

I must say I was interested, but also somewhat sceptical about this article that discusses the benefits of the timing of disease treatments with human circadian rhythms, for more effective therapies. Part of me wanted to say “Hey you holistic hippies, hope you aren’t wasting too much research funding on this”, but I quickly became invested in the article.

Once I understood that hormones and immune signals are produced rhythmically in 24-hr cycles, I could begin to see advantages for timing treatments. An example they used was cortisol, which is known to suppress inflammation and regulate certain T cell- mediated immunity. It peaks early in the morning and ebbs as the day progresses. They used this example to explain why in a controlled study over 3 years, flu vaccinations in the morning were more successful than those given in the afternoon.

The article explains that the region of the hypothalamus called the suprachiasmatic nucleus acts as a timekeeper for the body. Genes involved with cell division have been identified as being rhythmically expressed. As far back as 1987, researchers studying ovarian cancers found that tumour cells synthesized DNA on a daily rhythm that typically peaked in the late morning hours, nearly 12 hours out of sync with nontumour cells. It was then suggested timing of chemotherapy doses that target cells actively replicating their DNA might improve the drug effectiveness while reducing healthy-cell death.

Another example that held my interest was the utilization of the glucocorticoid signalling for breast cancers. This suppresses levels of epidermal growth factor receptor (EGFR) and peaks at night and tapers off in the morning, allowing EGFR signals to rise during the day. It was shown in animal studies that daytime doses of the EGFR inhibitor lapatinib were better at reducing tumour size.

It has been well established that medications like antihistamines, hypertensive drugs and cholesterol medications were more effective when used at certain times of the day. The implementation of chronotherapy as it is called, does have some hurdles. Patients suffering poor sleep, reduced appetite, fatigue and reduced physical activity often have their circadian rhythms out of whack. The use of melatonin and bright white light therapies helped normalise patients’ circadian rhythms as well as group therapies helped to reduce stress levels, which also impacted patient outcomes.

The conclusions drawn from the article are that future drug trials need to capture time of administering of the drug to see any trends in effectiveness. It was also clear that we are only beginning to understand many aspects of physiology and behaviour that are products of the circadian cycle and the impact they have on treatments. Knowing a person’s clock can be used to leverage better health and patient outcomes.

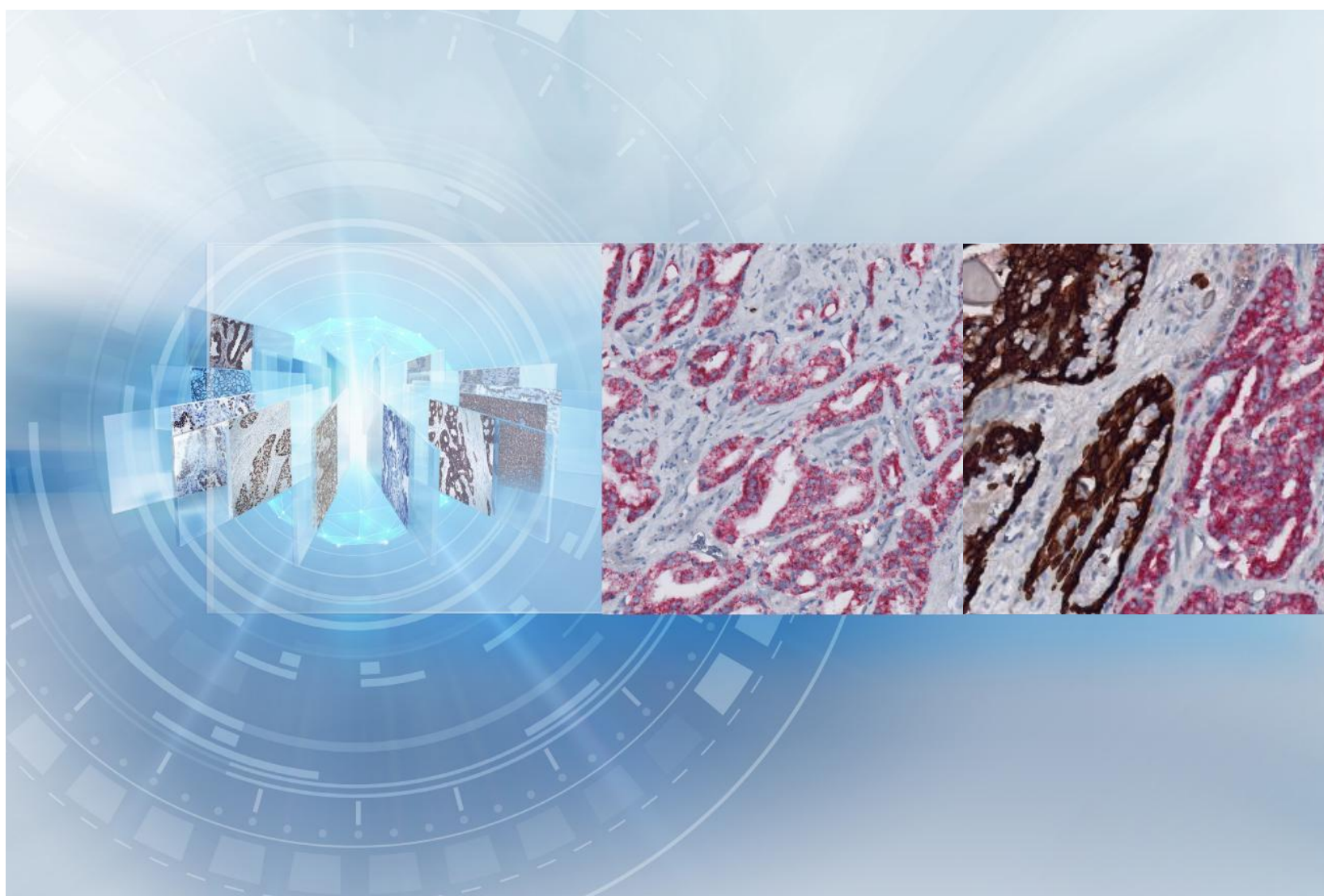
Reviewed Kerrie Scott

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References

1. Jiang J et al. Using an AMACR (P504S/34βE12/p63 Cocktail for the Detection of Small Focal Prostate Carcinoma in Needle Biopsy Specimens. Am J Clin Pathol. 2005; 123:231-236.

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HGV Student Awards 2017

This is the second year the HGV has presented awards to the top students in Histology for study undertaken at tertiary institutions. The awards were presented to the successful students at our most recent scientific meeting at Peter MacCallum Cancer Centre on May 11th. A fantastic turn out for the meeting saw the following awards presented;

Faria Habib

Royal Melbourne Institute of Technology
Batchelor Degree Medical Science

Naarah Hampton

Federation University
Batchelor Degree Biomedical Science

Lisa Stevenson

Gordon TAFE
Diploma Pathology Technician

Lixin Liu

Holmesglen TAFE
Diploma Pathology Technician

Congratulations to these students and all students that undertook study in histology throughout 2016.



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Future Events:

2017

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/>



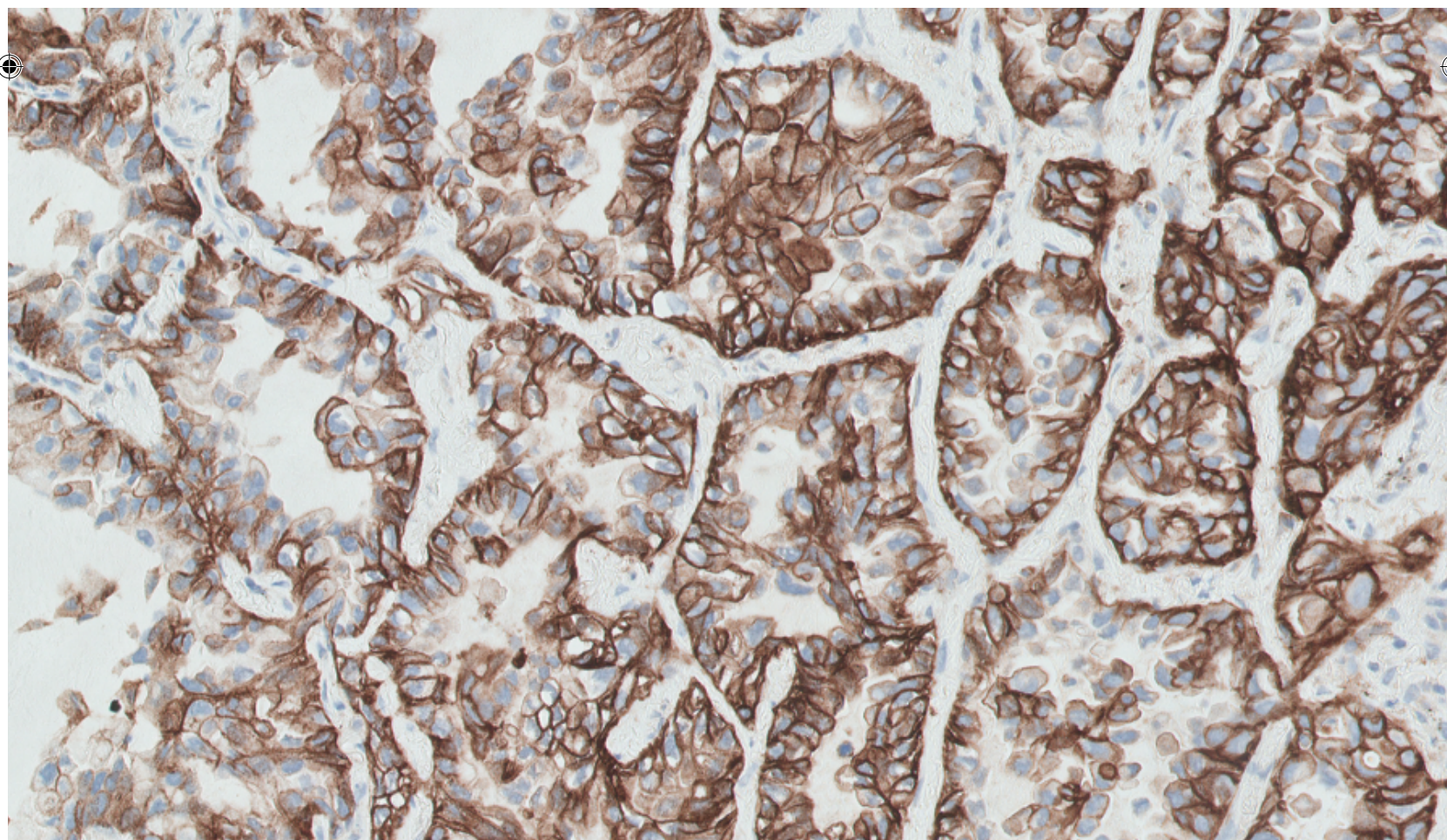
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TRIVIA NIGHT 2017

Date: Friday 21th July

Time: 6.30pm-10.30pm

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

Price: \$25 per person
(Tables of 10)

Including: sit down dinner, one house beer/wine/soft drink, Trade sponsored prizes and rounds with a professional host

Additional drinks at bar prices.

Payment and food orders due by **Friday 1st July**. 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.

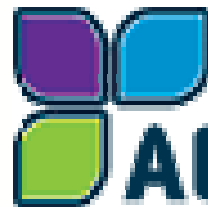




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