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PARAFFINALIA NEWSLETTER

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HGVT

The HGVT 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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Mark Bromley	Sullivan Nicolaides Pathology
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Alison Boyd	Northern Health
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Articles & Reports:

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

Please email articles (preferably Microsoft Word format) for inclusion in the next edition to <u>editor@hgvt.org.au</u> All items submitted for publication will then become the sole property of the Histology Group of Victoria Inc.

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President's Report – Behind the Bench

Chilly Cheers from across the bench!

Hoping you are all keeping healthy, warm and managing to find some fun and interesting cases in your workplace.

With the construction and disruptions around Peter Mac, and being in the depths of winter, we have taken the step of moving forward with the next scientific meeting to be online only on the 29th June. We have Kellie and Alistair showing us prostate specimen handling from grossing, through processing to immunochemistry. Slip into your PJs and zoom in, because I am pretty sure one of those presenters will be dressed in her flannelette jamas.

The committee has been working hard towards a State (actually States- Victoria and Tasmania) activity -The Workshop and Day Seminar on the 13th and 14th of October is titled 'Lifting the Lid', look out for the flyer in this issue!

We have worked hard to keep costs to a minimum and sneakily have managed to get it to you for a tax deduction in this year's return. The full program will be provided as soon as possible, I can tell you the workshop involves virtual reality anatomy and access to the Museum of Anatomy and Pathology at Melbourne Uni. Look out for some Trivia fun in August as well.

Kerrie Scott HGVT President





One Day Seminar



Saturday October 14th 2023

Workshop Friday October 13th 2023

SEMINAR

Rendezvous Hotel Melbourne 328 Flinders St, Melbourne VIC 3000 Program to follow

WORKSHOP (Histology – Virtual Reality)

Melbourne University Grattan St, Parkville VIC 3010

Prospective speakers welcome to submit topic and short summary to <u>secretary@hgvt.org.au</u>

BOOK at https://www.trybooking.com/CIZKU





TRIVIA NIGHT 2023

Date: Friday 4th August

<u>Time:</u>

6.30pm-9.30pm

Location:

Prince Patrick Hotel 135 Victoria Parade Collingwood 3066

Price:

\$25 per person (Tables of 10)

Including: Main meal, one house beer/wine/soft drink on arrival, Trade sponsored prizes and rounds with a professional host

Additional drinks at bar prices.

Payment and food orders due by <u>Friday 21st July</u>. 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



PAYMENT DETAILS PLEASE RETURN THIS SLIP WITH YOUR GROUP PAYMENT – MENU TO FOLLOW

Email: kellie_vukovic@hotmail.com or kellie.vukovic@mps.com.au

Mail: Attention: Kerrie Scott-Dowell Leica Biosystems 495 Blackburn Rd Mt Waverley VIC 3149

Cheque/Money Order (please make out to 'Histology Group of Victoria and Tasmania')

Direct deposit (please leave name as a reference)

Account Name: Histology Group of Victoria and Tasmania BSB: 063 449 Account no.: 10065881

Please forward this information to Kellie Vukovic via email listed above after payment.

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Contact Email:	
----------------	--

Number of people on table (Max 10): _____

Dietary Requirements:



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UNDER THE MICROSCOPE with Rebecca Nicolussi

What is your current job?

My current role is Associate Scientist, working my way towards full Scientist.

How long have you been working in your role?

3 years, started as a test operator and after a couple of months I got promoted into a new lab technician role, overseeing the team of test operators while taking on some science activities at the same time. Being in that role.

What piece of advice would you give to people who may want to follow your career path?

Honestly, I would stress less about the future during high school. Growing up there is a lot of pressure to know what you want to do and who you want to be.



But what isn't spoken about enough is that this might continuously change and that there are several pathways to get you there. There are opportunities everywhere, you just need to get your foot in the door and then show people what you're capable of!

What's a goal you have for this year?

Increasing and maintaining my overall health, both mentally and physically has always been a big goal for me. Working full time on mentally stimulating projects can get exhausting. Taking the time for establishing self-care routines outside of work can have a great impact on overall wellbeing.

What music is on your playlist at the moment?

A range of genres for whichever mood I'm in! After seeing him live, I've been listening to Lost Frequencies a lot – the sound is Lo-Fi beats and super relaxing. But coming up to the weekend, more energetic, pump-up music submerges into the playlist.

Other than your current role, what is another scientific topic that interests you?

Molecular genetics is a really interesting field to me. In particular, inheritance patterns and epigenetics are appealing topics to me. Forensics is also a field that I've always been interested in.

What movie or TV show do you think everyone should watch?

The Office US is a must watch for everyone.

If you could live anywhere in the world for a year, where would you pick?

The island of Bora Bora in French Polynesia. My Mum has hyped it up for a long time, so I would love to get there one day.

If you could choose two famous people, past or present, to have dinner with, who would it be?

Deepak Chopra and Oprah Winfrey.

Oprah's energy is very uplifting. She's very good at bringing awareness to positivity, highlighting silver linings within even the most of dire situations. Deepak was an endocrinologist who had a very stressful life, but then found mindfulness and meditation. Everything he says is very emotionally intelligent, filled with open mindedness and self awareness.

Together in their mediation series, they are a dynamic duo, where Deepak builds on Oprah's positivity to dive deeper into the mechanics of how and why.

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60

40

20

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HGVT Scientific Meeting

Date: 29th June, 2023

Prostate Cut Up with Kelly Vukovic

Big Blocks and PIN 4 staining with Alastair Townsend (Recorded virtually via Zoom)

IHC ANTIBODY SPOTLIGHT: NSE

Neuron-specific enolase (NSE) protein plays a significant role in pathology, particularly in the field of neurology and oncology. NSE is an enzyme involved in glycolysis, primarily found in neurons though it can also be present in neuroendocrine cells and certain tumors.

In neurological pathology, NSE can be used as a biomarker to assess the extent of neuronal damage or injury. Increased levels of NSE in cerebrospinal fluid or blood can indicate neuronal death or damage caused by conditions such as stroke, traumatic brain injury, or neurodegenerative disorders like Alzheimer's or Parkinson's disease. ^[1] Monitoring NSE levels helps clinicians in diagnosing and evaluating the severity of these conditions, as well as predicting patient outcomes.



(Upper) Human large bowel: Note the staining in the neuronal elements and the ganglia of the longitudinal and circular smooth muscle.

(Lower Right) Carcinoid tumor: The neoplastic cells show a moderate to strong granular cytoplasmic staining reaction.



In oncology, NSE is relevant in the diagnosis and monitoring of certain neuroendocrine tumors, such as small cell lung cancer and neuroblastoma. ^[2]NSE can be used in conjunction with other diagnostic tools to aid in the detection, staging, and monitoring of treatment response in these malignancies.

Furthermore, NSE's relevance extends beyond neurology and oncology. It has also been investigated in other pathological conditions, including cardiac diseases, systemic inflammation, and certain metabolic disorders. ^[1] Research is ongoing to explore the potential diagnostic and prognostic value of NSE in these areas.

References

2. Tian Z, Liang C, Zhang Z, Wen H, Feng H, Ma Q, et al. Prognostic value of neuron-specific enolase for small cell lung cancer: A systematic review and metaanalysis [Internet]. U.S. National Library of Medicine; 2020 [cited 2023 Jun 14]. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7261386/

^{1.} Haque A, Polcyn R, Matzelle D, Banik NL. New insights into the role of neuron-specific enolase in neuro-inflammation, neurodegeneration, and neuroprotection [Internet]. U.S. National Library of Medicine; 2018 [cited 2023 Jun 14]. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5836052/

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THE BARRIER FUNCTIONS OF EPITHELIAL TISSUES

Epithelial tissues, one of the four main types of tissues in the human body (the others being connective, muscle and nervous), play a pivotal role in maintaining the integrity and functionality of various organs. These versatile tissues act as barriers, creating physical, chemical, and immunological shields that protect internal environments and regulate the exchange of substances between different body compartments.

Epithelial tissues can be found lining the outer surfaces, inner cavities, and organ systems. Their primary function is to create a protective barrier between the external and internal environments. However, this function is more sophisticated than just a simple 'wall', below we will briefly visit the key barrier functions of epithelial tissues and reiterate how they relate to preserving our health.



Physical Barrier:

Epithelial cells are tightly packed, forming continuous sheets that physically separate different body compartments. This serves to prevent the entry of harmful microorganisms, toxins, and foreign particles. The best of example of this is our skin that shields the body from pathogens as well as preventing excessive fluid loss.

Selective Permeability:

Epithelial tissues can allow the controlled passage of substances across their layers. This regulation ensures that essential nutrients are absorbed while preventing the entry of harmful or unnecessary molecules. Epithelial cells achieve this through specialized structures like tight junctions, adherens junctions, and desmosomes that seal the gaps between adjacent cells. The intestinal epithelium is a prime example, selectively absorbing nutrients from the digestive tract while preventing the entry of potentially harmful substances.

Chemical Barrier:

Mucus, enzymes, and other chemical substances can be excreted by epithelial tissues facilitating chemical barrier function. Mucus, produced by goblet cells, lines the respiratory, gastrointestinal, and reproductive tracts, trapping pathogens and foreign particles, thereby preventing their entry. Epithelial cells can also release antimicrobial peptides and enzymes that actively destroy pathogens and maintain a healthy microbial balance.



Immunological Barrier:

The immunological role of epithelial tissues cannot be understated, serving as the first line of defense against pathogens. They contain specialized immune cells, such as intraepithelial lymphocytes, dendritic cells, and mast cells, which detect and initiate immune responses against invading pathogens. Additionally, epithelial cells themselves can release cytokines and chemokines to recruit immune cells, further enhancing the immune defense.

Disruptions or dysfunction of epithelial barrier functions can lead to various diseases. For example, a compromised intestinal epithelial barrier can result in increased permeability, allowing the entry of harmful substances, leading to inflammation and intestinal disorders like inflammatory bowel disease. We would also all be familiar with the infection that can easily occur with scrapes and cuts to the skin where the barrier for entry is removed and made easier for potential pathogens. Epithelial tissues are essential components of our body's defense system, providing physical, chemical, and immunological barriers to protect internal environments from external threats. Their roles in maintaining selective permeability, generating mucus, and orchestrating immune responses highlight the importance of these tissues in safeguarding our overall health. By studying and understanding the intricate functions of epithelial tissues, we can gain insights into disease mechanisms and develop targeted interventions for improved healthcare.

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Hello Histo group! The HGVT is interested in promoting Histology into the public eye more (to show off of course!) and want to see pictures from our community to develop an Instagram (or Histo-gram, for the pun-minded). Above is some artistic inspo of the already incredible potential our discipline offers, however, anything related to Histology, your lab or your team is more than welcome!

Send all pictures to: editor@hgvt.org.au

Best regards!

Links to above art:

https://www.nsh.org/blogs/christine-carreira/2021/03/26/art-of-the-stain-2021-contest-winner https://www.pinterest.com.au/pin/20055160831353005/ https://illnessnarratives.files.wordpress.com/2014/01/i-will-wear-my-heart-upon-my-sleeve.jpg https://www.pinterest.com.au/pin/395331673514803840/

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Future Events:

2023

Date: 29th June, 2023

HGVT Scientific Meeting Topics and speakers: Prostate Cut Up with Kelly Vukovic Big Blocks and PIN 4 staining with Alastair Townsend

Venue: Peter Mac (Level 7) (Recorded virtually via Zoom)

Date: 4th August, 2023 HGVT Trivia Night

Venue: To Be Confirmed

Date: 15th September, 2023

HGVT Scientific Meeting Venue: Peter Mac (Level 7) (Recorded virtually via Zoom)

