January 2023

Reviews of Microbiology workshops

2022 HDG Trivia Night – The Castle Hotel

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BENCHPRESS

The official newsletter of The Australian Institute of Medical Scientists (Victoria Branch)

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Inside this Edition

A Note From the Chair

I want to take this opportunity to wish you all a Happy New Year. I hope you enjoyed the festive season and had an opportunity for a well-deserved break.

As always, I would like to acknowledge the dedicated committee members for their hard work in 2022. Despite all the challenges associated with running events during covid the team were able to hold successful in-person haematology workshops and trivia night and various virtual discussions group meetings for Biochemistry, Haematology and Genomics.

As AIMS Vic Branch embark on 2023, the committee looks ahead with a sense of excitement. We have a number of events planned for this year including various in-person and virtual workshops for Biochemistry, Haematology and Microbiology.

Congratulations to Maria Boyer our Fellow recipient in late 2022. Congratulations also goes to our 2022 AIMS Young Scientist of the Year recipient Ricky Lai and George Swanson Christie Memorial Award recipient Trung Nguyen. What great achievements – well done all for your outstanding effort and dedication to the profession.

I look forward to connecting everyone at our future events.

Tina Pham
Chair
AIMS VIC Branch

Got News to Share?

We would be delighted to share the good things you are doing in the scientific world.

Contact us at secretary.aims.vic@gmail.com or via Facebook (@AIMSVictorianBranch) to let us know.

The submission deadline for next issue of Benchpress is 31 May 2023.

Parasitology and Tropical Medicine Special Interest Group Meeting

By Sandali Wijekoon (Medical Scientist, Northen Pathology Victoria) &
Claire Gregory (Clinical Scientist, St Vincent's Hospital Melbourne)

On Thursday, 13th October tucked away in the Doherty institute auditorium, the first in-person, post-Covid Parasitology and Tropical medicine S.I.G was underway, organised by the Australian Society for Microbiology (ASM). Heavy rains threatened to flood the Melbourne CBD outside; inside, welcomed with drinks, an opportunity to network and catch up with old colleagues and peers, some delicious Indian cuisine and the promise of the brain (and eye tingling discussion on Parasitology.

The first case for the evening presented by Karina Kennedy, titled 'Dangerous Backyard Buddies'. A patient presented with an atypical brain scan; a biopsy found a fibrous mass and a nematode of unknown origins. Morphological and Genetic testing concluded with the identification of Ophidascaris robertsi, which is known to be a python parasite. A part of the parasitic developmental stage involves the eggs being shed through the faeces of the definitive host to infect the intermediate host to complete its life cycle. In this particular case, the patient is the intermediate host.

As it turns out, the patient lived and grew organic produce in a space shared with pythons leading to the inadvertent infection. But, of course, to the hypochondriacs out there, a minor headache is not because Ophidascaris robertsi has taken up residency in your brain. Still, a take-home message may be to wash your produce thoroughly.

Professor Robin Gasser presented the next topic, 'Harnessing Genomic Genetic and Informatic tools to tackle parasitology'. Parasitology has previously relied on classification done using various parasite characteristics (morphology, life-cycle, ecology, taxonomy, etc.), and so needs to improve in the genetic and genomic sequencing progress.

Sequencing whole genomes of parasites is an essential development in our knowledge and its translation onto drugs, vaccines and other healthcare developments. Unfortunately, we know more about parasites than we currently know about methods to test and treat them in healthcare.

The final talk was given by Dr Richard Bradbury off with a clip of a very active worm in the eye's anterior chamber (enlisting an audible gasp from the audience). The discussion involved an overview of his process in identifying unknown parasites, the fact that morphological descriptions pre-1970s are better than post- as a resource, and case studies of lymphatic filariasis, specifically caused by Wuchereria bancrofti, Brugia malayi and B. timori

Interestingly the identification and diagnosis of Lymphatic Filariasis infection can be made by blood smear in the evening since the Filaria is active in the blood typically at night but some by day (nocturnal

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and diurnal periodicity, respectively). This exhibition of circadian behaviour (affecting detection) is due to the synchronisation of their mosquito vectors' circadian rhythm.

The discussion was concluded with a query of whether, once infecting the human host (for context, a returning traveller), the Filaria is active and present in the blood in sync with the original vectors or the current hosts' circadian rhythm. It was partly concluded that jetlagged Filaria might be a thing.

The night was a success, and an excellent opportunity to meet and learn among peers interested in the weird and wonderful ways parasites can affect our health. The presentations were not only interesting to those of us who don't come across or get to put into practice parasitology but were also enlightening regarding how wide and colourful the world of Microbiology is and can be.

As always, this was a great special interest group to attend. The case studies highlighted that parasites don't always present as we expect (the same of which could be said of many other microorganisms), which is important for microbiologists to remember.

Thank you to Professor Gasser for highlighting the work that his laboratory is involved in at the University of Melbourne in the Gasser Laboratory The role of genomics and molecular diagnostics is often overlooked in the field of parasitology, and Professor Gassers' presentation was an important reminder of how we can use this tool in the diagnosis of parasitic infections.

Many thanks to all presenters, and to the ASM for organising this event. Special thanks to Chandra Kant for providing the delicious curries, and to ThermoFisher Scientific for refreshments.

A review of ASM Victorian branch 'News from The Hospitals'

By Mikayla Kingston (Medical Scientist, Northern Pathology Victoria)

The usually very successful 'News from The Hospitals' event organised by ASM welcomed in-person attendees for the first time since before the pandemic, this limited in-person and zoom hybrid meeting was held on the 22nd of November at the educational centre at Austin Health, Heidelberg. After being welcomed by Seema Kanade from the VIC branch committee, we began the presentations.

The first talk was by Patricia Szczurek, a Medical Scientist from Austin Pathology. The title 'Not all that glitters is gold(en Staph)' gave nothing away. She began with a little background of a patient who presented at Austin Emergency Department (ED) with polyarthralgia, fevers, pain and swelling in various joints. Blood and urine were taken for investigation and found elevated CRP, normalurines, normal renal and liver functions, and X-rays showed degenerative changes, no arthropathy or erosions. Blood cultures were also taken in ED and flagged positive within 24 hours of collection. The Gram stain showed Gram negative cocci in pairs. At this point Patricia asks the audience if they have any ideas of the bug in question, to which a few people have guessed Neisseria species due to Gram morphology. Patricia also reminded us of the DHHS requirements for notification of all presumptive or confirmed Neisseria meningitidis infections. After culturing the positive blood cultures using the 'Hot Choc' method the lab obtained a MALDI -ToF identification of Neisseria gonorrhoeae within a few hours of incubation. N. gonorrhoeae is strictly a human pathogen that is sexually transmitted. It may disseminate to the joints, causing septic arthritis in around 0.5-3% of patients aged less than 40 years old. In this case the disseminated N. gonorrhoeae managed to infiltrate the blood stream as well. Patient was treated with 7 days of IV ceftriaxone and remains well at home.

Our second speaker of the night was our speaker prize winner of the evening, Lamali Sadeesh Kumar who is a scientist at Melbourne Diagnostic Unit (MDU) at the Doherty Institute. Lamali presented interesting findings on the 'Comparison of Minimum Inhibitory Concentrations by Etest and Broth Microdilutions for Granulicatella and Abiotrophia spp.' I am sure most medical scientists working in microbiology have come across a difficult "tiny" organism isolated from a blood culture to come back from the MALDI-ToF as a Granulicatella or Abiotrophia spp. Most labs refer these specimens to the reference lab, a.k.a MDU, for further testing. Lamali brings up the very valid point that a comparison is essential as broth microdilution is something most labs don't perform routinely. Etests are readily available, reliable, relatively inexpensive, and an easy method to perform (in any lab). This study proved to have its challenges as sample size was low (with the study not yet completed) and the fastidiousness of the bugs. Looking forward to finding out more, enjoy the movie tickets!

Lastly, the final speaker of the night was Helen Williams, a previous educator at RMIT who has since been the senior scientist in microbiology at Northern Pathology Victoria (NPV) since December 2021. Helen presented a study she had undertaken on the Sysmex urine analyser. This study was the verification of not culturing urines after negative microscopy and chemistry results performed on the analyser. Negative results being those with no evidence of WBC, dipstick negative and no bacterial/yeast count. After retrospective data concluded that the bacterial count given from the Sysmex is a reliable in predictor of UTI's, the verification study underwent action. All negative by rule urines set by Sysmex software were cultured and the positive by rule left unchanged, all data was collected and evaluated. The method proved to be reliable for over 1000 urines tested and has since gone live as a new procedure within the lab. Something to consider implementing as the benefits include cost saving and reduced labour, however, in science there are always exceptions to the rule.

The evening come to a close and I was most happy to have been given the chance to attend a News from The Hospitals in person again, around 30 people attended the event across Zoom and in-person. I look forward to future events coming back to "normal", however, I think most of us can agree that attendance via Zoom proves to be convenient at times!

Student Projects

Project name:

Comparative Study on Manual Microscopy Versus CellaVision DC-1 for the Morphological Assessment and Diagnosis of Microcytic Anaemias

Student name:

Madyson Carter, RMIT University Melbourne

Students selecting Haematology as their preferred discipline within Advanced Laboratory Medicine had the choice between an ELISA project or a morphology project, and I decided to undertake the latter. The main aim of my project was to compare the advantages and disadvantages of manual microscopy versus CellaVision software to assess the morphological features of various microcytic anaemias, with a focus on iron deficiency anaemia (IDA).

IDA is the most prevalent type of anaemia worldwide, and diagnostic screening is prompted when cells appear microcytic, hypochromic and present with anisocytosis. A serum ferritin of <15-25 µg/L is generally accepted as the adult cut off for diagnosis of iron deficiency, however, the co-existence of inflammatory diseases needs to be taken into consideration and may see this limit increase.

The limited sensitivity of ferritin, the similarities possible in the FBE results for various microcytic anaemias and the fact that morphological analysis is largely overlooked in the diagnostic guidelines for IDA, prompted me to research the potential benefits offered by automated, digital morphological analysis using the CellaVision DC-1 analyser and software.

Manual light microscopy and the digital CellaVision software were used to perform white blood cell differential counts and grading of red blood cell morphology for a limited sample cohort comprising of mostly microcytic conditions, as well as some normocytic. The CellaVision analysis was divided into an automatic “pre-classification” phase, and a subsequent “re-classification” phase, where I manually re-categorised any unidentified or misclassified cells.

Manual microscopy was found to have greater accuracy than CellaVision for classifying band forms, lymphocytes and eosinophils, but negligible differences for segmented neutrophils, monocytes and basophils. CellaVision was better at grading anisocytosis and polychromatic cells, while the manual method was superior for hypochromic cells, microcytes, macrocytes and poikilocytes. CellaVision was also found to be more reproducible, but no significant difference in analysis time was found after accounting for re-classification.

Ultimately, while CellaVision was shown to have great reproducibility, its neural network requires improvements regarding accuracy of cell classification and morphology grading. Further studies with a larger, more variable cohort and the use of the CellaVision Advanced RBC software and an updated analyser model is recommended.

Student Projects

Project name:

Cellavision vs. Manual Morphology for Diagnosis of Chronic Leukaemia

Student name:

Sasnee Kothainayagam, RMIT University Melbourne

In peripheral blood smears, white blood cells are detected and classified utilising an automated image analysis system known as CellaVision DC-1. The technology is also capable of doing platelet counts and partially characterising the shape of red blood cells.

This study focuses on the identification and quantification of chronic leukaemia to evaluate the correlation of the WBC differential counts and monitor patient treatments for chronic leukaemia.

This study evaluates CellaVision DC-1 data to microscopy in terms of robustness, accuracy, limits of detections and reproducibility.

46 slides were analysed using the CellaVision DC-1 and the microscope. The CellaVision DC-1 failed to analyse 12.4 % of the cells. For the majority of haematological parameters, after classifying the unknown cells, very good correlation coefficients between CellaVision DC-1 and manual microscopy are seen.

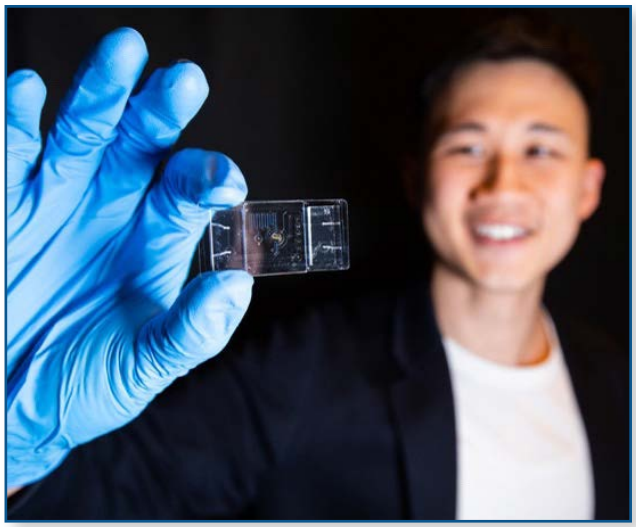
The correlation coefficient (R2) was determined between manual microscopy and postclassification of CellaVision. The R2 value were 0.90 (segmented neutrophil), 0.04 (band neutrophil), 0.34 (eosinophil), 0.79 (basophil), 0.74 (monocyte), 0.76 (lymphocyte), 0.63 (blast), and 0.86 (metamyelocyte). Correlation improved after post-classification showing a median correlation, indicating that human intervention must be performed.

63% accuracy rate was distinguished of pre-classification for CellaVision, post classification for CellaVision and Microscope. Displaying that post-classification had a high accuracy rate compared to CellaVision pre-classification, but microscopy had the highest compared to CellaVision.

Several advantages are seen with CellaVision DC-1 over microscopy. However, before validation of a differential count from CellaVision, a scientist must reclassify the incorrectly categorised WBC and unidentified cells.

To fully comprehend this automated analyser, future research is imperative as this study's finds are not definitive due to the constraints the study was undertaken.

Microfluidic solutions for real-time and multiplexed single-cell analyses to study immune cell dynamics



By Wei-Che Chang (Student, RMIT University Melbourne)

Observing the change of surface markers on the cell in current clinical approaches, requires a large sample size and specialised laboratory staff. With an approach called microfluidics, researchers can 'trap' single cells and keep them alive while inducing different stimuli. This approach holds the promising potential to investigate immune cell responses in more detail than ever before.

Capturing and investigating lymphocytes - current challenges in Immunology research and clinical fields.

Lymphocytes are one type of white blood cell (WBC) and they play a critical role in our immune. Once a specific stimulus is recognised by lymphocytes, lymphocytes will be activated and trigger the immune response. One well-known reaction included in the activation process of the lymphocytes is the presentation of different surface markers, as known as CD markers. To be able to identify their presence accurately is integral to understanding more about the way our immune cells work.

In the clinical and research areas, scientists can evaluate the CD marker level through several methods, such as Flow cytometry (FC) and the enzyme-linked immunosorbent assay (ELISA), that can more sensitively find tiny markers. However, these methods have some drawbacks that limit the development of immunology studies. Both the FC and ELISA can test single cells but in bulk, and as an end-point analyse. They can't tell what cell is coming from or interrogate them specifically and dynamically. As a result, a new method is needed to help people modulate the function of the subset to study immune responses in more detail.

Trapping and keeping alive single cells for 24 hours - how my research is helping to improve current immunology study.

In the Integrated Photonics and Applications Centre (InPAC) at RMIT University, my research uses a technology called microfluidics – small filtering systems like pipes that can be programmed to sense different molecules, proteins, or markers. These systems are around 75mm in length and 26 mm in width – smaller than the size of a glass slide. The microfluidic system can also mimic the human circulation system while allowing scientists to induce different drugs during the observation. For instance, several microfluidic chips have been applied in the transfusion area for anti-coagulation drug screening.

Using this technology, our chip is designed to trap hundreds of specific single cells all at once. By adjusting the geometry design of the tunnel in the biochip, we can control the intensity and the direction of the fluid and further trap a specific cell of interest in a 'trapping well'.

The biggest challenge with lymphocytes is that they are a kind of suspension cell – meaning that they multiply and aggregate – which makes them harder to observe under a microscope over a long period of time because they won't stay in the same position. Therefore, we need an approach that allows us to monitor lymphocytes over a long period of time.

Microfluidic systems allow us to overcome this, by integrating many different functions in one microfluidic chip to stimulate different functions. This means that lymphocytes can maintain their biological functions and stay alive during the entire experiment, giving us interesting insight into how

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they behave.

Besides capturing the cell in the specific well, we can integrate different functions in one microfluidic chip. With the fluid-handling system, the culture medium can be continuously induced into the trapped cells. Cells can maintain their biological functions and stay alive during the entire observation experiment.

In our progress so far, up to 50 alive cells can be separately trapped in our microfluidic chip and be observed for 24 hours. This provides us with an opportunity to observe the same single cell and detect the real-time cell surface marker change for a long period of time. This design is especially critical for immunology research, where we can now capture cells of interest and keep them alive to observe the real-time and long-term cell surface marker change.

Biochips that could imitate blood circulation: The reason I chose the Integrated Photonics and Applications Centre (InPAC)

The first time I heard about the Integrated Photonics and Applications Centre (InPAC) at RMIT University was from a news article about their collaboration with Dr Warwick Nesbitt - a professor in transfusion. I was impressed with how they designed a biochip to imitate a blood circulation system for testing anti-coagulant treatment. Because I desired to further explore more possibilities for the application of biochips in laboratory science, I applied as an intern at InPAC, RMIT.

Miniaturising laboratory equipment with light and lab-on-a-chip technology: Features of the Integrated Photonics and Applications Centre (InPAC)

The team at the Integrated Photonics and Applications Centre (InPAC) at RMIT University in Melbourne, Australia, use the science of light to create new technologies that can achieve record-breaking performance in speed and precision, whilst also improving size, weight and energy efficiency. I worked closely with the Centre Director Arnan Mitchell, Biomedical Applications Team Leader Cesar S. Huertas and Research Fellow Crispin Szydzik. This team is working on solutions with immunologists Magdalena Plebanski and April Kartikasari to develop new diagnostic tools to find biomarkers in cancers before symptoms arise. They are doing this via the combination of photonics and complex microfluidics for lab-on-a-chip technology to reduce the size, bulkiness, complexity and sample size required in biomedical devices.

The future of biochips: measuring biological compounds via their wavelength

Biochips have huge potential to be used in the medical research field. My vision for this multiple single-cell trapping system to be used as a drug screening platform. With the capability to isolate a single cell and keep the cells alive, scientists can monitor the real-time change of the same cell for a long time, opening up many opportunities in pharmacy.

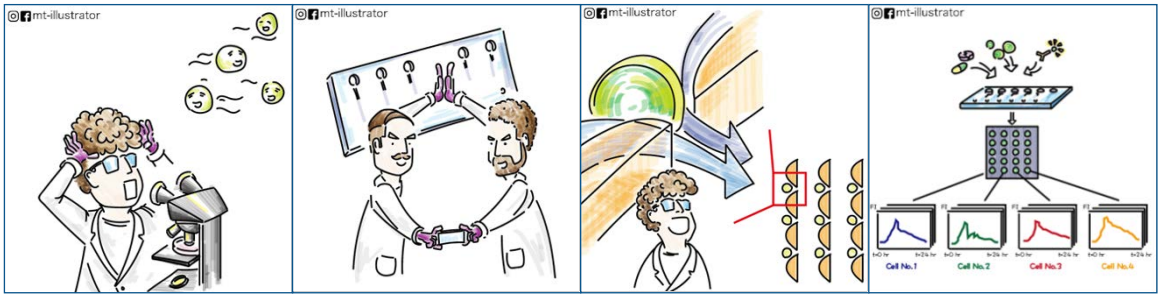
InPAC can also design a biosensor to capture the change in the photonic wavelength once the antibody conjugates to the specific cell antigen. The sensitivity of the photonic device is much higher than the immunofluorescence signal, so the issue of false negatives would be.

Conclusion

Current clinical research methods – like the FC and ELISA – require large concentrations of a sample and can't filter for specific subsets of immune cells present in a pathogen. The microfluidics system overcomes these technical challenges by being able to trap single cells of interest and keep them alive for 24 hours. This approach holds promising potential for future microbiology advancements, as we will be able to observe specific cells – like lymphocytes – changing over time. With further research, the potential of the biochip should not be ignored.

Achievement

The project was voted the most innovative concept from 50 posters at the 2022 RMIT University Health, Science and Technology Poster and Networking Symposium.



It is difficult to observe multiple single lymphocytes in real-time for hours.

A multiple single-cell trapping chip is introduced at InPAC, RMIT.

The microfluidic system of the chip can isolate cells at one time.

Biological signal form individual cells can be analysed in real time.

2022 HDG Trivia Night – The Castle Hotel

By Georgina Row & Kim Nguyen (Medical Scientists, Northen Pathology Victoria)

After many months of planning by the AIMS VIC Branch organising committee, on Monday 12th December 2022 the annual HDG Trivia Night was finally held at The Castle Hotel in North Melbourne where 5 teams (Austin, Eastern, RMH, Peter Mac and NPV) went head to head to test their Haematology and trivia knowledge. It was over 2 years since the last trivia night so we were all itching to know who would be the next champion laboratory and win the coveted microscope trophy!

There were 6 rounds of trivia ranging from the history of Melbourne all the way through to sporting knowledge. From the start there was clearly a team that stood out gauging from the cheers and "Hi five's" coming from across the room!". By the end of the night, the scores were very close but Peter MacCallum Cancer Centre conquered the night, winning the infamous microscope trophy with a close (join) second place going to Eastern and RMH.

A special thank you goes to Tony O'Neill for preparing all the questions and wearing a funky Christmas hat that set the fun mood for the night. Tony also prepared a challenging cryptic crossword related to haematology that fried our brains.

Vladimir's jail is full, almost half of your donation goes towards this (6,3,5) (see page 16 for answer)

Northern Pathology was victorious in getting 100% in the cryptic crossword but unfortunately were unsuccessful with their overall trivia knowledge which goes to show how nerdy we are up here in the North!

A shout out also goes to the Castle Hotel who provided a delicious platter of food that we all enjoyed throughout the night. We look forward to next year's Trivia night, where I'm sure there will be some more friendly competition between laboratories!

The winning team Peter Mac.

Team NPV.

Host Tony O'Neill.

AIMS (VIC) Award 2022 winners

By Tina Pham (AIMS Chair, Senior Scientist, St Vincent's Hospital Melbourne)

The opportunity to acknowledge the efforts of one's professional colleagues is perhaps the most enjoyable task that the Branch committee undertakes. It is with great pleasure that we announce the following award winner for 2022:

Young Scientist Award – Ricky Lai (Medical Scientist, Box Hill Hospital)

This Young Scientist award is offered by the Victorian Branch committee. It is presented for the first time in 2022 and is awarded to recognise scientific endeavour in Medical Laboratory Science in Victoria.

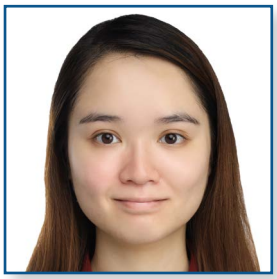
Ricky is the first recipient of this award and this is to recognise his scientific endeavours including publications, presentations and commitment to self-education and the education of others in the medical laboratory science field. Well done Ricky!

George Swanson Christie Award – Trung Nguyen (Principal Scientist, Peter MacCallum Cancer Centre)

This award is offered by the Victorian Branch committee. It has been presented annually since 2004 and is offered to an inspirational medical scientist who has shown ongoing excellence in the field of Medical Laboratory Science in Victoria.

Trung has been an inspiration to medical scientists in the discipline of anatomical pathology and has demonstrated ongoing excellence in this field. Congratulations Trung on the publication of "Immunohistochemistry – a technical guide" – I'm sure it will be a great resource for students and medical scientist alike! Thank-you for your ongoing commitment to the profession and helping advance the knowledge of the scientific community.`

Introducing your new student representatives



Enoch Woo (Masters of Laboratory Medicine, RMIT Melbourne)

My name is Enoch, and I'm currently finishing my second year of studies of a master's degree in Laboratory Medicine at RMIT University, majoring in Medical Microbiology and Clinical Biochemistry. Prior to Master of Laboratory Medicine, I've studied a Bachelor of Infectious Diseases. I've always been interested in infectious diseases and microorganisms, especially during the pandemic. I've enjoyed my time studying and I'm looking forward to pursuing a career in medical science.

I'm very honoured and excited to be part of the AIMS Victorian Branch as a student representative. Thank you AIMS for this fantastic opportunity! I'm looking forward to putting my skills into use and making a positive impact in AIMS and the medical science community!

I'm an INTJ, so I'm quite introverted as well as being very organised and analytical, but that doesn't mean I'm not fun to be around! I'm a bookworm and a painter. I also enjoy learning new things. I'm a crazy animal lover with an Australian Shepherd and three cats.

Isabelle Gemmell (Laboratory Medicine, RMIT Melbourne)

My name is Isabelle, and I am currently in my third year of studies in a Bachelor of Laboratory Medicine at RMIT University with majors in Microbiology and Biochemistry. I am currently undertaking my professional placement in the Microbiology laboratory at Monash Health. I am thoroughly enjoying my studies thus far and cannot wait to enter the industry as a junior medical scientist!

I am thrilled to be a part of the Victorian Branch AIMS committee as a student representative. I feel honoured to represent the laboratory medicine student body, and am especially excited to push myself beyond my comfort zone and take on new responsibilities as a committee member. I look forward to promoting events and encouraging other students to further advance their careers prior to and after graduation.

Beyond my studies and professional placement, you can catch me trying out a new recipe or reading. I also enjoy spending time outdoors as a means of rejuvenation.

Xueting Hong (Masters of Laboratory Medicine, RMIT Melbourne)

My name is Xueting Hong and I am an international student. I completed my bachelor's degree in Pharmaceutical Sciences at Tsinghua University. Now I am studying LaboratoryMedicine at RMIT University.

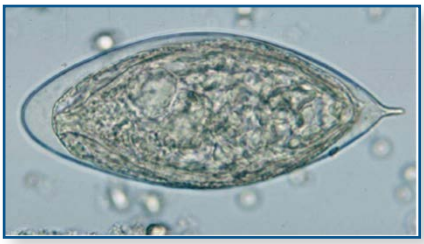
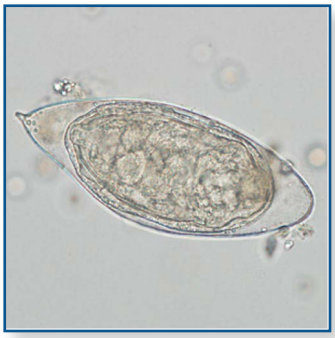
I want to become a medical scientist and support others, but I barely have experience in clinical practice. Many of my classmates share the same feeling as mine. It is an honour for me to join the AIMS committee as a student representative.

I would like to speak for our postgraduate students and international students. I am also more than willing to make the opportunities provided by AIMS known among our students. I sincerely hope that I can make a difference so that our students would feel less disoriented when trying to start careers.

[Answers on page 16]

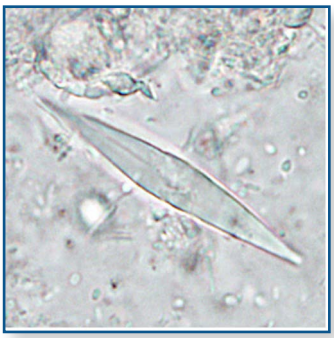
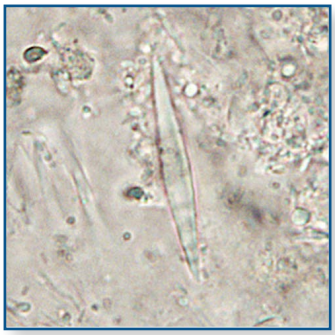
TEST YOURSELF

1. What are the following eggs (showing the characteristic terminal spine) found in a urine specimen?

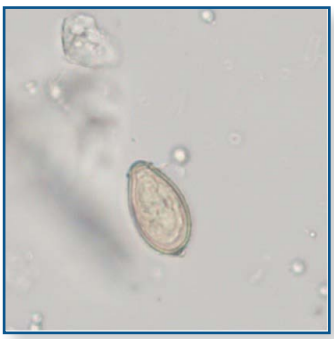
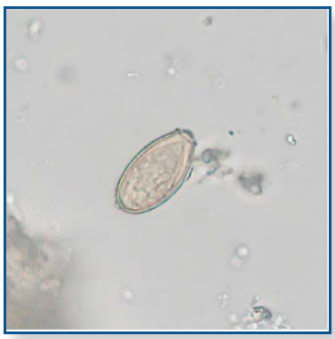



   A. Schistosoma haematobium
   B. Schistosoma japonicum
   C. Schistosoma mansoni

2. The following images are of_____. These are the breakdown products of _____.

3. A return traveller from China presents with non-specific abdominal pain and intermittent diarrhoea. The following were detected in a wet preparation (400x) of his stool specimen. What are they? This eggs of this parasite is practically indistinguishable morphologically from _____.

   A. Fasciola hepatica
   B. Clonorchis sinensis
   C. Diphyllobothrium latum

All images from Centers for Disease Control and Prevention.

Visit the website http://www.accmlsw.org.au/apply to apply. If you encounter any problems or have any questions, please email office@accmlsw.org.au.

GET YOURSELF CERTIFIED!

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competent ✓
certified ✓

The Australian Council for Certification of the Medical Laboratory Scientific Workforce (CMLS) is a newly created not for profit company established to administer the voluntary certification scheme for clinical scientists, medical scientists and technical officers.

WHY BECOME CERTIFIED?

Your status as a certified medical laboratory professional is a public guarantee that you are qualified, competent and continuing your professional development.

- Recognition of scientific qualifications
- Certification aligned with competency development and assessment processes
- Acknowledgement of participation in continuing educational activities
- Increased professional credibility and prestige in the industry
- Support of industry standards
- Demonstrated commitment to superior professionalism
- Advantage in the recruitment process

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Apace

Australasian Professional Acknowledgement Continuing Education (APACE) is a voluntary programme that recognises professional activities which contribute to professional growth.

WHY BECOME CERTIFIED?

- Participation in CPD activities demonstrates a commitment to ongoing continuing education and professional development.
- APACE provides formal recognition of activities that may have been pursued on personal basis without recognition – records for a professional development portfolio.
- An APACE Certificate enhances professional profile and is a bonus on a resume.
- Recognition of participation in activities provides encouragement to maintain, improve and extend knowledge and skills for scientific and professional duties.
- CPD is about extending your knowledge and keeping up with, or ahead of, current developments and practices.
- CPD participation ensures a competent workforce and enhanced quality of service for increased confidence of service users.

The programme is open to members of AIMS, AACB, ASM, THANZ, ANZSBT and FSA. APACE participants can lodge applications and activities using the online diary www.apace.org.au.

"As an overseas-trained laboratory professional with a few years of working experience in an Australian laboratory, I felt the need to uplift my professional standing within the industry. Getting certified is one way for me to achieve this and gain more professional credibility. Working in the clinical laboratory means that the majority of the clinical decisions are based upon the results that I as a Medical Scientists produce. With that, I believe it is a personal obligation for me to assure the public that I am capable in my field of work and this certification is a proof my competence. Being part of this also means I am obliged to participate in CPD activities which is important in our field to stay knowledgeable and keep up to date with the latest developments."

John Abcede, CMLS, MAIMS
Medical Scientist
Northern Health

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Answers to quiz on page 11:
Packed red cells

Answers to quiz on page 14:
1. *A*
2. *Charcot-Leyden crystals, Eosinophils*
3. *B, Opisthorchis viverrini1*

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