DECEMBER 2024

THE GREAT TRANSITION
HAEMATOLOGY WORKSHOP

BEHIND THE LENS
OCULAR MICROBIOLOGY WORKSHOP

SPECIAL CASE STUDIES
BIOCHEMISTRY WORKSHOP

BENCHPRESS

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

A.C.N 010 985 403

Inside this Edition

Got News to Share?

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 30 May 2025.

A Note From the Chair

As the year draws to a close, we take pride in having achieved our goal of supporting diverse scientific disciplines through a series of successful events. These included Biochemistry, Haematology, Transfusion, Coagulation, Morphology, Microbiology and Publication workshops as well as a Laboratory Medicine Career Night and an interactive Haematology Trivia Night. Additionally, we celebrated AIMS student achievements with the presentation of prestigious awards.

These accomplishments were made possible by the dedication of our committee members, to whom I extend my deepest gratitude. Their hard work and commitment have been invaluable.

This year, we bid a heartfelt farewell to three valued members: Joseph Rigano, Niki Lee, and Xueting Hong. Joseph, Treasurer since 2020, was instrumental in organising Haematology Discussion Group. Niki, our Secretary since 2020, significantly contributed to Haematology workshops, while Xueting, our Student Representative since 2022, played an active role in Laboratory Medicine Career Nights. We deeply appreciate their contributions and wish them all the best in their future endeavours.

Finally, I was honoured to present this year's AIMS Vic Branch awards at the AGM. Mikayla Kingston received the prestigious Young Scientist Award, and Joanne Clifford was awarded the George Milsom Award. Congratulations to both on your outstanding achievements!

Wishing everyone a joyful Christmas and a Happy New Year. We look forward to bringing you more engaging meetings and educational activities in the year ahead.

Tina Pham
Chair
AIMS VIC Branch

Introducing your new commitee and student Member

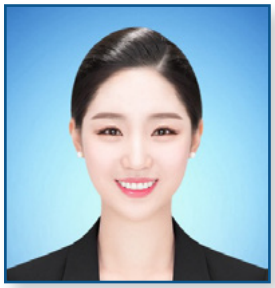
Teresa Abajo (Senior Scientist, Microbiology Department, Alfred Hospital)

My name is Teresa, and I am delighted to be joining the AIMS Vic Branch Committee.

I am a Senior Scientist in the Microbiology Department at the Alfred Hospital, where I have worked for over 20 years. I also demonstrate medical microbiology at my alma mater, RMIT, and this has given me the opportunity to have some contact with the future faces of our profession. I'm happy to say the future is looking pretty bright!

I have recently completed my AIMS Fellowship, and I fully appreciate the difference some education and professional development can make to a career.

The Vic Branch Committee is known for bringing a rich and varied program of events that are well-attended and relevant to the modern scientist. I look forward to helping plan these events and meeting more of the AIMS membership.



Stellar Eunyoung Jun (Student, Master of Laboratory Medicine, RMIT University)

My name is Stellar, and I am currently pursuing a Master of Laboratory Medicine at RMIT University. I completed my bachelor's degree and gained valuable practical experience working as a Medical Laboratory Scientist in Korea. Additionally, I obtained ASCP certifications from the United States, which broadened my global perspective. Now, I am expanding my academic expertise and passion for the field through my studies in Australia.

It is a great honor to serve as the student representative for the AIMS Victorian Branch, which provides a valuable opportunity to connect students with medical laboratory professionals and encourage greater participation in AIMS events and initiatives. I am committed to building networks that bridge academic knowledge and practical application to contribute to the advancement of medical science.

Through this role, I hope to gain a deeper understanding of the development of laboratory science in Australia and how professionals from diverse backgrounds collaborate to drive innovation in the field. I also aim to support RMIT students in engaging more meaningfully with AIMS activities and objectives.

As the student representative for the AIMS Victorian Branch, I will approach this role with an open mind, take responsibility for my contributions, and strive to create positive change within our community.

The Great Transition Haematology Workshop

By Nao Shimada Ramos (Student, Master of Laboratory Medicine, RMIT University)

Attendees enjoying lunch at the workshop.

On Saturday, 4 May 2024, a highly informative scientific workshop on "The Great Transition" in the haematology and transfusion science field was held at Stago headquarters. The event gathered experts and enthusiasts, offering a day filled with interesting presentations and opportunities for networking. Organised by the AIMS Victoria Branch, this workshop provided a platform for exploring the latest advancements in haematology.

The workshop began with a warm welcome from the AIMS Victoria Committee, followed by Robyn Wells's talk, which highlighted the historical evolution of haematology. She captivated the audience by showing early manual testing techniques, emphasising the remarkable progress that led to the automated analysers we rely on today.

Vicky Karlaftis discussed the HAPPI Kids project, which successfully established age-specific reference ranges for haematology, immunology, and biochemistry in children, enhancing the quality of pathology tests for paediatric patients. The project continues to advance high-quality paediatric research.

Kar Men Tee, a graduate from RMIT University, presented her systematic review on antenatal RhIG prophylaxis. Her meta-analysis assessed three different strategies, evaluating their effectiveness and compliance in routine antenatal care practices worldwide.

Alex Stephenson-Brown introduced Stago's SthemE Manager, a data management system essential for labs. The system guarantees intra-run precision by providing accrediting tools that automate quality data collection, processing, and documentation.

After morning tea, Dr Chris Hogan presented on the transition from Prothrombinex VF to Beriplex, which has a higher concentration of factor VII. He covered warfarin in detail, discussing genetic sensitivity, drug interactions, herbs that enhance its anticoagulant effects, and bleeding risks. He emphasised the importance of warfarin reversal, with Beriplex providing an effective solution to manage these risks.

Robyn Wells's second presentation featured CellaVision, a global leader in digital microscopy. She highlighted its benefits, such as the ability to build case libraries, while addressing concerns including low platelet counts and de-skilling in regional areas. CellaVision is flexible and can be used for a range of body fluid samples, though more training with known cases is needed to minimise misclassifications.

Mary Comande and Hayleigh Wallace explored molecular testing in transfusion medicine, focusing on the value of genotyping and sequencing, as well as their limitations. They discussed the Microarray BeadChip kit and NIPA, technologies performed by Lifeblood. Through several case studies, they demonstrated the effectiveness of these methods and emphasised the importance of integrating them into routine practice.

Sunil Abraham presented his study on Stago's point-of-care system, qLabs FIB, which measures functional fibrinogen levels from a single drop of citrated whole blood. Using the STA RMAX as the reference analyser, he compared its fibrinogen results with those obtained from STA RMAX.

After enjoying a variety of foods and sweets during lunch, Vanessa Kalcovski presented her RMIT University project comparing CellaVision with conventional microscopy for evaluating malaria samples. She discussed misclassification issues

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with CellaVision, such as mistaking infected RBCs for nucleated RBCs or artefacts, and its inability to detect low parasitaemia. While the technology shows promise, she emphasised that traditional light microscopy remains the gold standard for malaria detection.

James Ng and Rebecca Gazelle introduced their work on "remote" training programmes for staff in regional laboratories. They offer weekly training on cases ranging from basic to advanced, with two assessments in blood bank and morphology. This virtual approach helps educate staff in regions where complex cases are rare, though challenges like time management remain.

Michelle McBean spoke about gene panel testing in blood cancer patients, highlighting its significance, advantages, and clinical utility. Using MPN cases as examples, she demonstrated how NGS contributes to diagnosis, classification, prognosis, and therapy options. Gene panel testing is now the standard of care in haematological malignancies, as appropriate patient management depends critically on gene variations.

Steven Schischka concluded the event with a range of insightful stories on troubleshooting and problem-solving in haematology and coagulation laboratories. He covered practical solutions such as using quick troubleshooting guides, remote computer access, and managing multiple fridges and sample tubes. His presentation provided a broad yet valuable perspective on improving lab efficiency and handling challenges.

The scientific workshop was a tremendous success, offering attendees invaluable insights into the evolving landscape of haematology. Special thanks to all the presenters for their informative talks and contributions. A heartfelt thank you also goes out to the AIMS Victoria Committee for their dedication and hard work in preparing such a wonderful event. Last but not least, gratitude to Stago for providing such a beautiful venue, complete with excellent facilities, networking spaces, and delicious catering that included a delightful morning tea and lunch.

Top (L-R) – Robyn Wells, Vicky Karlaftis, Kar Men Tee, Alex Stephenson-Brown
Middle (L-R) – Dr Chris Hogan, Mary Comande & Hayleigh Wallace, Sunil Abraham, Vanessa Kalcovski
Bottom (L-R) – James Ng & Rebecca Gazelle, Michelle McBean, Steven Schischka

How to Publish/Present workshop

By Patricia Szczurek (Quality Officer/Medical Scientist, Austin Health Pathology)

Top (L-R) – Dr. Emmanuel J. Favaloro, Robyn Wells | Bottom (L-R) – Sarah Just, Patricia Szczurek

On 8 May 2024, the AIMS Victorian Branch hosted an insightful evening dedicated to the topic of publishing and poster presentations. The event featured two highly esteemed guest speakers: Robyn Wells, Editor of the Australian Journal of Medical Science (AJMS), and Dr. Emmanuel J. Favaloro, a prolific author and editor, whose expertise in publishing journal articles is well-recognised.

Robyn and Emmanuel shared their wealth of knowledge, providing a behind-the-scenes look at what scientific journals are looking for in submissions. They offered practical advice on transforming everyday lab projects, case studies, and scientific findings into well-structured abstracts, articles, and posters that resonate with conference audiences and meet the rigorous standards of publishing. Their presentations focused on demystifying the publication process, helping attendees understand how to highlight the most important aspects of their work to create compelling submissions.

The feedback from the evening was overwhelmingly positive. Attendees appreciated the detailed guidance on writing abstracts and creating effective posters, finding the tips and strategies invaluable for enhancing their professional presentations. The session concluded with a panel discussion, where Robyn and Emmanuel were joined by AIMS CEO Sarah Just. The panel addressed a wide range of questions from the audience, further enriching the experience by providing personalised insights into the challenges and nuances of publishing.

For those who couldn't attend, the recording of this event is available for AIMS members on the website at www.aims.org.au.

Biochemistry Workshop

By Pramod Subedi (Lecturer, Department of Biochemistry and Chemistry, La Trobe University)

(L-R) – Jack Openlanio, Sanders Sebastien, Michael Theophilos, John Abcede, Banu Pritchard, Linlin Chen, Pramod Subedi.

On 20 June 2024, the Victoria branch of the Australian Institute of Medical Scientists (AIMS) hosted an insightful workshop titled “Biochemistry Discussion Group Workshop: Special Case Studies” at the Castle Hotel in North Melbourne. This event brought together a diverse group of 39 attendees, comprising laboratory students and professionals from diagnostic laboratories across Victoria. The workshop focused on special biochemistry cases encountered in various pathology labs, offering a platform for knowledge exchange and professional development.

The workshop featured presentations from four distinguished scientists and pathology registrars, each discussing a unique and challenging case study from their respective pathology labs.

- Linlin Chen from Northern Health presented on the utility of baseline serum cortisol levels in predicting the outcome of short synacthen tests.
- John Gabriel Abcede, also from Northern Health, followed with an intriguing case of unexplained hypoglycemia.
- Dr Michael Theophilos from Austin Health discussed a near-fatal case of liver disease resulting from mushroom poisoning.
- Sanders Sebastien from St Vincent’s Hospital concluded the presentations with a case study involving unusually low uric acid levels.

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Each session was followed by an interactive Q&A segment, providing attendees with the opportunity to ask questions, share perspectives, and engage in meaningful discussions with the speakers. This exchange of ideas fostered a dynamic and enriching environment, enabling participants to deepen their understanding of the complex biochemistry cases presented.

The success of the workshop was further supported by the generous sponsorship of Livingstone, a 100% Australian-owned company and a leading manufacturer of consumables and supplier to key industries, including healthcare and laboratories. During the dinner break, Banu Pritchard, National Development Manager at Livingstone, delivered a brief presentation highlighting the company's commitment to supporting the pathology community. Banu expressed Livingstone's pride in being associated with AIMS events and their eagerness to continue this partnership in the future.

Beyond the formal presentations, the workshop offered ample networking opportunities. Attendees mingled with their peers and the speakers both before and after the sessions, forging valuable connections and furthering discussions initiated during the presentations.

To conclude the event, certificates and 2 CPD points were awarded to all attendees, acknowledging the workshop's educational significance and practical applicability. This recognition underscored the event's value in enhancing professional knowledge and skills in the field of biochemistry.

Biochemistry Discussion Group

Event attendees actively participating, exchanging ideas, and gaining valuable insights from the speakers.

AIMS Vic Branch Morphology Workshop

By Kar Men Tee (Graduate, RMIT University)

In June, I had the privilege of attending AIMS Vic Branch Morphology Workshops at Melbourne Pathology. This event, sponsored by Abacus and hosted by industry experts, provided hands-on experience in morphology. It brought together students and young and experienced scientists in medical laboratory science. The workshop was separated into two days to cater to different levels of expertise.

On the first day, we deep-dived into the essentials of haematology, and was favoured by many students and young scientists. Before looking at the microscope, we discussed the general strategies for examining blood films. We began by revisiting red cell, white cell, and platelet nomenclature and identification, a fundamental yet crucial aspect of haematology. We also looked at artefacts and explored both non-malignant and malignant cases. For experienced scientists, this day was an excellent refresher to reinforce the foundational knowledge underpinning morphological examinations in the laboratory. For students like myself, it was a great opportunity to solidify the understanding we acquired from university. Mastering these basics set a strong foundation for the more challenging cases on the next day.

On the second day, we approached intermediate to advanced topics, including malaria, paediatric haematology, and malignant lymphoid and myeloid cases. One of the highlights of the day was undoubtedly the rare and complicated cases challenging everyone in the room. For example, rare cases of Plasmodium knowlesi, leukaemia, lymphoma and myeloma. We also explored each acute myeloid leukaemia (AML) type and its diagnostic criteria. One of the challenges was to identify Auer rods in myeloid progenitor cells using an x40 objective. The workshop provided updated information based on the latest World Health Organisation classification of haematolymphoid/myeloid tumours. The discussions following each case were genuinely eye-opening, with many experienced scientists sharing their unique encounters within the laboratory.

Each day, we examined 20 cases, first individually assessing blood films prepared by the fantastic organising team and then writing down our possible diagnoses before coming together for group discussions.
We discussed key blood film features combined with full blood examination (FBE) results, the reasons behind each feature, and any further testing to facilitate the final diagnosis. A special shout-out to all the demonstrators who supported us and provided invaluable tips and guidance throughout the workshop. At the end of each day, there was a Menti quiz to assess our learning with prizes to win! This was my first experience participating in such an intense event, and I was challenged by the cases presented, especially on the second day. I highly recommend attending the next morphology event to deepen your diagnostic skills. Are you up for a little challenge?

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Behind the Lens: Ocular Microbiology Workshop

By Anupama Anurenj (Medical Scientist, Northern Pathology Victoria)

On Saturday, 3 August, the AIMS/ASM joint workshop was held at Peter Doherty Institute Auditorium in Melbourne. The focus of the workshop was on the intricate world of ocular microbiology. The event drew 84 attendees, who were greeted with a warm reception, ample networking opportunities, and a delightful spread of refreshments before engaging in a day of enlightening discussions and case studies. I was thrilled to win the prize for an ASM sponsored attendance at the ASM/AIMS "Behind the Lens: Ocular Microbiology" event.

Dr. Harsha Sheorey engaging introduction set the stage for an in-depth exploration of ocular structure and their respective infections. His remarks provided a valuable overview of the role of microbiology in ophthalmology and outlined the day's agenda.

Dr. Helen Riad then took the floor to discuss specimen collection. She highlighted the challenges of obtaining adequate tissue and volume from ocular samples, which can significantly impact diagnostic accuracy and treatment decisions. Dr Riad offered practical tips and best practices for overcoming these challenges effectively.

Dr. Harry Birrell and Dr. Sugapriya Ravichandran presented a series of intriguing endophthalmitis cases, including a notable case of disseminated infection with ocular involvement in an immunocompromised patient. Their discussion addressed various clinical presentations, diagnostic hurdles, and treatment strategies, providing a comprehensive look into this severe ocular infection through real-world examples.

Dr. Vanessa Leung and Dr. Helen Riad next focused on corneal infections. They examined the pathogens responsible for corneal diseases, discussed diagnostic approaches, and explored treatment options, offering a thorough overview of corneal infection management.

Chandra Kant (Medical scientist, St Vincent's Pathology) then addressed the bacteriology aspects of ocular infections. His talk highlighted major bacterial pathogens, their identification, and the significant impact of bacterial infections on ocular health.

Acute Retinal Necrosis (ARN) and toxoplasmosis, was discussed by Dr. Vivian Kuang covering clinical features, diagnostic methods, and treatment options for these challenging retinal conditions.

Dr. Darren Jardine (Principal scientist, St Vincent's Pathology) provided valuable insights into virology and molecular diagnostics, focusing on the latest advancements in molecular techniques and their application in diagnosing viral ocular diseases, reflecting the ongoing evolution in molecular diagnostic practices.

Josh Griffin (Medical scientist, St Vincent's Pathology) presented on the mycology aspects of ocular infections. His talk offered a comprehensive view of fungal pathogens, including their identification and treatment strategies, which are crucial for managing fungal infections of the eye.

We then had an insightful and comprehensive comparison given by Dr. Victoria Madigan who compared antimicrobial lab testing standards: CLSI versus EUCAST. Dr. Madigan's discussion provided a deeper understanding of these guidelines and their implications for managing ocular infections effectively.

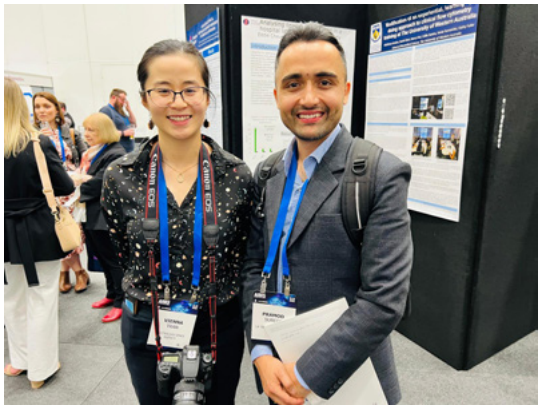
Dr. Penelope Allen and Dr. Michael Lai presented protocols for handling endophthalmitis, corneal infections, and lacrimal disorders at RVEEH. Their practical guidance on treatment and patient management strategies brought the days of in-depth learning to a close.

Patricia Szczurek (AIMS organising committee) from Austin Health closed the meeting with heartfelt thanks to all the speakers, attendees and organisers. Her closing remarks celebrated the day's rich discussions and the collaborative spirit that made the event a success.

AIMS National Meeting

By Pramod Subedi (Lecturer, Department of Biochemistry and Chemistry, La Trobe University)

The Australian Institute of Medical and Clinical Scientists (AIMS) National Meeting, held on 21-23 August 2024, brought together professionals from across the field of laboratory medicine, providing an invaluable platform for knowledge exchange and networking. Attendees had the opportunity to engage with fresh perspectives and innovative ideas shaping the future of medical and clinical sciences in Australia and beyond.



(L-R) Dr. Vienna Tran with Dr Pramod Subedi at the AIMS National Scientific Meeting 2024.

One of the standout sessions for me was a plenary talk titled "Lab to Launch" by Dr. Vienna Tran, a Resident Medical Officer and researcher in space medicine. Dr. Tran captivated the audience by addressing the unique challenges encountered in space exploration, particularly focusing on microgravity's effects on human health. She discussed the intricate details of the neuro-ocular syndrome, musculoskeletal degradation, and space radiation, all of which present considerable hurdles for long-term space missions.

A particularly intriguing aspect of her presentation was the discussion of pathogen virulence in space. Dr. Tran highlighted how microgravity alters pathogen behavior, potentially increasing virulence, which could present new risks for astronauts. Equally fascinating was her exploration of how protein crystals grow more efficiently in space. This insight into microgravity's potential to aid in crystallography could have far-reaching applications, not only for space-based research but also for developing therapies on Earth.

Dr. Tran's vision for diagnostics over a distance was perhaps the most inspiring takeaway from the talk. This innovative concept proposes the delivery of expert medical and pathology advice remotely, allowing healthcare professionals to support patients in space as well as in remote and rural areas on Earth. With the rapid advancement of telemedicine, this approach could revolutionise how healthcare is delivered, especially in isolated regions.

The presentation raised an important question: could diagnostics over a distance be the next major breakthrough, both in space exploration and in medical science on Earth? Only time will tell, but the potential impact is immense, offering hope for improved healthcare access globally.

Overall, the AIMS National Meeting was a dynamic and thought-provoking event that offered a glimpse into the future of laboratory medicine and healthcare innovation. Thank you AIMS for the support in providing the ECR Travel Award.

2024 AIMS (VIC) Award Winners (1/2)

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 winners for 2024:

AIMS VIC Branch Chair, Tina Pham (left) with 2024 Young Scientist Award winner, Mikayla Kingston (right).

Young Scientist Award – Mikayla Kingston (Medical Scientist, Microbiology at Northern Health)

This year, the award is presented to Mikayla Kingston, a dedicated member of both AIMS and ASM. Since 2022, she has served as a committee member for the ASM Vic Branch and has chaired sessions at the ASM National Meeting (ClinCon) in both 2022 and 2023.

Mikayla has made significant contributions to the AIMS Vic Branch Benchpress, writing articles of interest for the microbiology community. She has also played a key role in organising joint AIMS/ ASM meetings, including events such as "Urine Red Cell Morphology" and "Behind the Lens: Ocular Microbiology." Additionally, she coordinates the annual ASM News from the Hospitals event, a crucial platform for knowledge-sharing across Melbourne's healthcare institutions.

Her commitment to professional development is evident through her APACE certification, which she has maintained since 2016. She has also completed an internal auditing course, presented at CPD sessions, and held a leadership role as Vice President of the in-house CPD committee from 2019 to 2024.

In research, Mikayla contributed as a third author to the 2018 paper, *Comparison of Two Methods for the Detection of Carbapenemase-Producing Organisms*.

2024 AIMS (VIC) Award winners (2/2)

AIMS VIC Branch Chair, Tina Pham (left) with 2024 George Milsom Award winner, Joanne Clifford (right).

George Milsom Memorial Award – Joanne Clifford (Senior Scientist, Special Coagulation at Monash Health)

This year, the award goes to Joanne Clifford. Joanne is the Senior Scientist in Special Coagulation at Monash Health, a leading diagnostic laboratory specialising in comprehensive haemostasis and thrombosis testing. Her work enables swift and thorough investigation of complex coagulation cases across all age groups and includes reference testing for ADAMTS13 and HITS.

She played a key role in validating Monash's ADAMTS13 activity by ELISA and contributed to the recent validation of the AcuStar ADAMTS13 method. Her findings were published in "A multicentre laboratory assessment of a new chemiluminescent assay for ADAMTS13 activity" (JTH 2021) and presented at the AIMS National Scientific Meeting.

During the COVID pandemic, Joanne investigated over 400 patients with Vaccine-Induced Thrombotic Thrombocytopenia (VITT) as Monash became the Victorian reference laboratory for this testing. She triaged and performed PF4 ELISAs, trained staff in ELISA techniques, and collaborated nationally to explore alternative testing methods, resulting in the publication "Assessment of immunological anti-platelet factor 4 antibodies for VITT in a large Australian cohort" (JTH 2022).

A regular presenter at scientific meetings, Joanne has contributed to discussions on Congenital TTP, Autoimmune HIT, and VITT ELISA testing, among others. She has also worked with Haemostasis and Thrombosis Fellows on projects evaluating universal calibrators for anti-Xa testing.

RMIT/AIMS Awards Night

By Jack Opelanio (Student, Master of Laboratory Medicine, RMIT University)

The RMIT awards night happened on the 30 September 2024 in RMIT, Bundoora campus during careers night. It was a distinguished event celebrating the exceptional accomplishments of alumni of BP147 students and MC158 students. This occasion honored their outstanding contributions across various branches of laboratory medicine, emphasising the roles of these emerging professionals in healthcare systems.

Four awards were presented to BP147 graduates, recognising their expertise in specialised fields. Emma Warner, who received the Anatomical Pathology award for her great understanding of disease processes through tissue analysis. Vanessa Kalcovski received an award in Hematology for her expertise in analysing complexities in blood. In Transfusion Medicine, Rayanna Nunes earned recognition for her ability to address critical challenges in decisions in blood banking and transfusion practices. And lastly, the award for Clinical Biochemistry was given to Nguyen Doan for her dedication and precision in biochemical principles.

Among the MC158 graduate students, two were recognised for their hard work and contributions to laboratory medicine. Suzan Yew was honored with the Professional Practice award, reflecting her leadership and commitment to maintaining excellence in clinical laboratory operations during her placement. While Wei-Che Chang was celebrated for his remarkable Research Project, which offered new and interesting topic that engaged professionals to innovate the approach in solving challenges in healthcare.

Moreover, the awards ceremony was a night that highlighted the dedication, perseverance, and skills of these young professionals. Other scientists were also invited to share their personal experiences on how to secure a job in a hospital setting and students use that as their guide and inspiration after their university journey.

The RMIT Awards Night was truly a memorable occasion, building networks from different hospitals around Victoria, honoring the next generation of leaders in laboratory medicine and celebrating the invaluable contributions of the future of healthcare

Emma Warner, Anatomical Pathology Awardee

Vanessa Kalcovski, Hematology Awardee

Nguyen Doan, Biochemistry Awardee

Wei-Che Chang, Research Project Awardee

RMIT/AIMS Careers Night

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

RMIT students attending the RMIT Student Career Night.

RMIT University hosted its Student Career Night on 30 September 2024, a fantastic opportunity for students to explore scientific career paths and connect with industry professionals.

The event featured a wide range of speakers from various fields, including anatomical pathology microbiology, haematology, immunology and application specialist.

Students had the chance to learn about different job roles, graduate opportunities, interview and career tips and network with the speakers.

We look forward to seeing these bright young minds take their next steps into their careers and contribute to the scientific community across Australia.

L-R: Vanessa Kalcovski, Emma Warner, Samantha Winalatissa, Boris Zhang, Claire Gregory, Rashelle Farah, Nguyen Doan, Wei-Che Chang, Enoch Woo, Denise Jackson.

Parasitology & Tropical Medicine S.I.G.

By Patricia Szczurek (Quality Officer/Medical Scientist, Austin Health Pathology)

On October 24, enthusiastic parasitologists gathered at the Doherty Institute for an evening of socialising and networking over Chandra's famous curries, followed by presentations on intriguing parasite cases from across Victoria.

The first speaker was Clare Shugg from the Royal Melbourne Hospital. Her presentation provided an excellent refresher on malaria, highlighting its ongoing global significance. Clare discussed detection methods, the hospital's new testing protocol, and shared a case study featuring fluctuating results from the Alethia platform (LAMP - loop-mediated isothermal amplification). She reminded us that no test is perfect and underscored the importance of understanding the assays we use, especially the causes of false positives and negatives.

Emma Lee, also from the Royal Melbourne Hospital, presented the cleverly titled case study "Something Fishy." The lab received a worm passed in stool from a recent traveller who exhibited febrile gastrointestinal symptoms. After sharing images of the long worm and its eggs, Emma identified the culprit as Diphyllobothriidae, a pseudophyllid cestode, primarily transmitted through the ingestion of undercooked fish.

Dr. Alex Rolf from Dorevitch followed with a case of a 54-year-old woman referred to the infectious diseases clinic with multiloculated cystic areas within liver segments 3 and 6/7. The patient, a Vietnamese immigrant who arrived in Australia 12 years ago and last visited Vietnam six years prior, worked as a mushroom picker with no pets and an otherwise unremarkable medical history. Dr. Rolf described the initial investigations and treatment plan, though unfortunately, the patient was lost to follow-up. Three years later, she was re-referred with suspicions of an ongoing liver parasitic infection. An OCP (ova, cysts, and parasites) investigation revealed an egg from Fasciola spp., a trematode transmitted via a snail vector through contaminated plants. It was likely the patient acquired this infection in Vietnam, as outbreaks in Australia are rare due to agricultural practices, smaller industry, and a larger population.

The final speaker, parasitology expert Dr. Harsha Sheorey, presented a highly informative talk on parasitic infections of the eye. He outlined when to suspect parasitic infections, described various parasites capable of infecting the eye, and highlighted the specific areas each one can affect. Dr. Sheorey detailed Acanthamoeba species, a soil amoeba that infects the cornea, discussing both culture and microscopic identification methods. He also presented challenging case studies that kept the audience engaged, concluding with "lab critters" such as Demodex spp. (the eyelash mite), Phthirus pubis (the crab louse), and Sarcoptes scabiei (the scabies mite), leaving the attendees feeling a bit itchy!

News from the Hospitals 2024

By Patricia Szczurek (Quality Officer/Medical Scientist, Austin Health Pathology)

The ASM held their bi-annual "News from the Hospitals" event on 7 November at The Royal Melbourne Hospital. This hybrid meeting allowed delegates to attend in person for networking and dinner or join online via MS Teams.

The evening began with a presentation from the event sponsor, BD. Representatives Patricia Aguilar and Kareena Pascua discussed best practices in blood culture collection, introducing the UltraTouch Push Button Blood Culture Set, which may help streamline the blood collection process on hospital wards. They emphasised best practices in sample collection, including the importance of collecting two sets from different sites at the correct volume for optimal detection of bacteraemia.

Next, Dr. Katherine Huang and Hicran Sosur from The Royal Melbourne Hospital presented "Maritime Misadventure," the case of a 74-year-old man who fell onto a rocky surface and coral at a boat ramp north of Broome, sustaining a wound on his left iliac region. The wound initially healed, but five months later, he developed vertebral osteomyelitis and worsening back pain. Initial microbiological investigations revealed no pathogen and the patient underwent six weeks of antibiotics, but symptoms returned shortly after. Further testing, including extended cultures for Mycobacteria, eventually identified Mycobacterium avium complex after four weeks of incubation. Most attendees, however, were tricked into suspecting Mycobacterium marinum in the interactive quiz.

Sachier Bosser and Dr. Jessica Murray from The Royal Melbourne Hospital presented "A Wee Fever," a case involving a 67-year-old woman who returned from Bali with symptoms including fatigue, fever, a pruritic rash, and swollen hands and feet. Dr. Murray described the investigative process that initially raised suspicion of Dengue, while Sachier provided background on the virus itself—its structure, infection mechanisms, replication, and laboratory tests available. They concluded by highlighting the critical importance of distinguishing between Dengue and Zika, as Dengue can lead to Dengue shock syndrome, while Zika is especially dangerous in pregnancy.

Amonjot Shergil from Monash Health then presented "The Unsettling Mirage," a case study of a 31-year-old woman who returned from Brazil with abnormal vital signs, elevated WCC, neutrophils, lymphocytes, and CRP, and a chest CT showing atypical infection/hemorrhage. Blood cultures flagged positive for Gram-negative cocco-bacilli, which MALDI-TOF MS identified as Francisella philomiragia after just eight hours. Amonjot discussed the differences between Francisella philomiragia and Francisella tularensis, which is a potential bioterrorism agent and significant for lab-acquired infection risk. Francisella philomiragia, an opportunistic pathogen usually found in brackish waters, was likely acquired by the patient at Iguazu Falls, where she may have ingested contaminated water.

Dr. Kwee Chin (KC) Liew from Australian Clinical Labs presented "Red Angry Baby," a case involving a 37-year-old pregnant woman at 37+5 weeks gestation who developed a fever and mild rash. She delivered at 38+3 weeks, and the newborn showed petechiae, poor condition, and elevated liver function tests. Neurological symptoms led to a CSF collection, and sequencing eventually identified Human parechovirus (HPeV), a Picornaviridae family RNA virus known to cause severe neonatal meningoencephalitis with potential neurodevelopmental impacts. The findings suggested in-utero transmission.

The final speaker, Bonney Tan from Monash Health, presented "The Closed Mouth That Caught a Fly," a case about a 3-year-old girl with a six-month history of a crusted nodule on her lower lip. Recently returned from Pakistan, she was seen by dermatology at Monash, where leishmaniasis was suspected. Histology showed Donovan bodies, and PCR confirmed Leishmania tropica. Bonney discussed the epidemiology, symptoms, and available tests for leishmaniasis, noting its rarity in Australia but relevance among travellers. She also shared a second case of visceral leishmaniasis in a 72-year-old man from Greece.

We look forward to the next News from the Hospitals in May 2025!

A Day in the Life of an Immunology Department

By Andrew Harrison (Senior Scientist, Immunology Laboratory, The Royal Children's Hospital)

Back (L-R): Dr Sharon Choo, Jessica Sammut, Dr Laine Hosking, Andrew Harrison, Calista Dinh, Rashelle Farah, Yi-Hui Lin, Sinead Flynn, Rosi Gribben
Front (L-R): Chris Czajko, Dr Gabby Graves, Sheree Polton
Absent: Didem Dogru, Dr Steph Richards.

Can you describe your staff team and their educational pathways?

The Immunology Laboratory at The Royal Children's Hospital has a team of 9 medical scientists, with a mix of full-time, part-time, and casual scientists. The laboratory is supported by an immunopathology registrar and three immunopathologists.

The staff have followed various educational pathways. One person completed a Diploma in Laboratory Technology before doing their Bachelor of Biomedical Science at RMIT. Most staff have a Bachelor of Biomedical Science / Bachelor of Applied Science in Medical Laboratory Science (depending on how long ago they did their degree) or a Bachelor of Science with a variety of majors - Biochemistry, Haematology, Transfusion / Transplantation, Genetics, Molecular Biology, Anatomy and Physiology, and Immunology. One person had completed their Master of Laboratory Medicine. Another is currently enrolled in the RCPA Faculty of Science Fellowship training program in Immunopathology. Four of the team completed their laboratory placements at the RCH Immunology laboratory before securing ongoing employment once they graduated.

What is the role of a medical scientist in the Immunology Laboratory?

The medical scientists perform a comprehensive range of laboratory tests including:

- Diagnostic tests for primary immunodeficiency diseases including immunophenotyping and functional testing of lymphocytes and neutrophils.

Continues on next page...

...continued from previous page.

- Tests for inflammatory conditions eg Haemophagocytic Lymphohistiocytosis (HLH) and macrophage activation syndrome (MAS).
- Functional assessment of the complement system
- Measurement of specific IgG responses to Tetanus and Pneumococcal vaccines to assess the immune systems' ability to mount an immune response.
- Allergy tests, including total IgE and allergen-specific IgE.
- Diagnostic assays for investigation of autoimmune conditions such as Coeliac Disease, SLE, antiphospholipid syndrome, autoimmune thyroid disease, and type 1 diabetes.

They are involved in all aspects of running a diagnostic laboratory including sample registration, reagent ordering, stock management, quality control, quality assurance, instrument maintenance, document control, flow cytometry analysis, result reporting, managing send away tests, and the development of new tests and methods.

There is a strong focus on education, learning and professional development which is important as our knowledge of the immune system and its function continues to expand. As part of this, scientists attend weekly departmental education meetings and all must prepare and present a talk to the lab and clinical teams during the year usually focused on one of our tests to educate the team on the methodology and diagnostic utility of the test.

What is special about working in Immunology that sets it apart from medical scientists working in other disciplines?

Working in Immunology is unique in many ways! As outlined above, we offer variety of test types allowing scientists to develop a wide skill set including in automation, immunofluorescence, flow cytometry and complex Immune function tests. With scientists being trained in these different methodologies and analysers from when they start, and the sharing of tasks between everyone, two days in the Immunology lab are rarely the same!

Many of our immune function tests has been developed and validated in-house to identify specific defects in the immune system. Drawing on up to date research and methodologies from around the world, new tests are developed, as well as improvement of current tests, as the clinical need arises. Some of our specialised tests aren't offered anywhere else in Victoria or Australia so we get samples sent to us from all over the country.

We have a close working relationship with the Allergy and Immunology Clinical team. Scientists attend weekly clinical case discussions as well as clinical trainees visiting the lab to go through some of our tests in detail. This is one of the most rewarding aspects of working in the Immunology lab at RCH, providing an immense sense of achievement and worth to see the impact our testing has on the lives of our patients. The relationship is also beneficial for clinicians, allowing them to gain an in-depth understanding of some of the tests they might be ordering and what the results mean.

All of this whilst having life-friendly working hours without weekend or evening shifts!

Victorian Faces of the *Fellowship* – Teresa Abajo

My Fellowship journey started in 2020. I returned to full time employment after 20 years of working part time while raising a family. I could see there were gaps in my knowledge, and I had a need to fill those gaps because I, quite simply, love having and sharing knowledge.

I considered the Fellowship because it was self-paced and I wouldn't have to rearrange my life to attend classes. This is a real advantage for busy people with families and many competing responsibilities, but it also meant that I, and I alone, was responsible for keeping me on track. Turns out that I wasn't great with this, and when the first exam results came out and I hadn't passed, I realised more was required of me.

I committed to hitting the books harder, delving deeper into the areas of the topic I didn't know about (even the bits that put me to sleep!). I learned to talk to myself more kindly and adopt a more encouraging mantra – I can do hard things. I reminded myself that I had chosen to be examined on the hardest topics first. These are areas I had either never worked in, or hadn't worked in for many years, so it was naturally going to be a very steep, uphill journey. I also experienced the loss of my mother during this time, but amid the grief I heard her gentle words of encouragement.

The second time I sat the exam I felt I was a little better prepared. While far from confident that I would pass, it felt different than the first exam. The meagre knowledge I had acquired had more depth. When I opened the email that informed me I had passed, it was a massive relief. I loved the feeling of achievement and I recommitted to completing the entire program.

Teresa Abajo
Senior Scientist, Microbiology Department
Alfred Hospital

The next few years flew by. More than once, as I struggled to juggle work and family commitments, I would question my decision to take on a Fellowship. It certainly felt worth it in the end – in May 2024 I received the email that said – "you have successfully completed all the modules necessary for the conferring of the award of the Fellowship of the Australian Institute of Medical and Clinical Scientists."

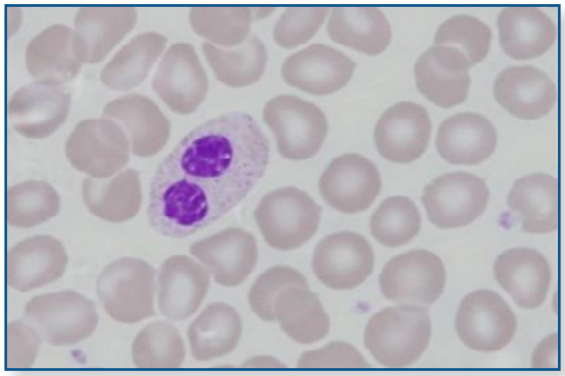
I don't consider myself gifted at all – honestly it was commitment and dedication that earned me this award. I need to acknowledge my family, who forgave me every time I couldn't attend an event because I was studying; my mentor Claire Gregory who gave me excellent advice especially in the very early days; and my workplace who allowed me to take the time off my duties to study and attend exams.

The Fellowship is one of the hardest things I have ever attempted. It is something I value highly because I know what I had to put in to achieve it. If you're considering taking on a Fellowship, remember that with commitment and dedication, you too can do hard things.

[Answers on page 25]

Morphology Quiz

1. This morphological feature is characteristic of which inherited disorder that affects neutrophil nucleus segmentation?



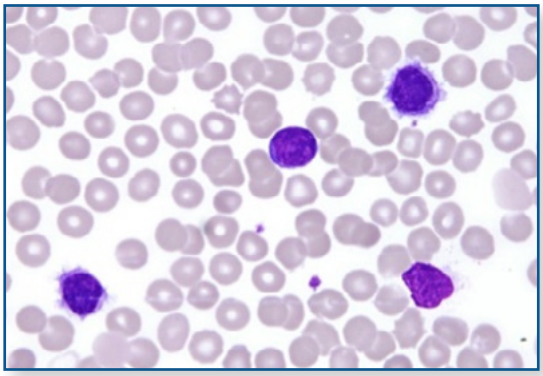
A) Megaloblastic Anaemia

B) Pelger-Huët Anomaly

C) Chronic Myelogenous Leukaemia

D) α Thalassemia

2. The image shows abnormal lymphocytes with irregular cytoplasmic projections. These cells are typically seen in which rare type of chronic leukaemia?



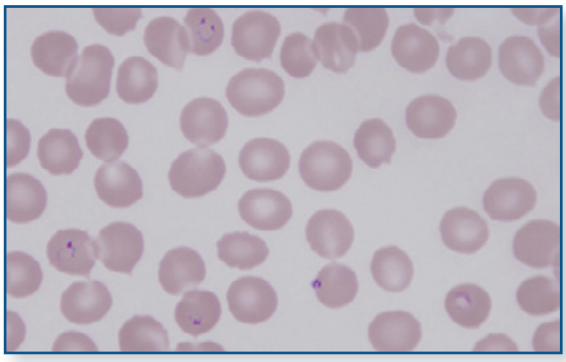
A) Multiple Myeloma

B) Acute Myeloid Leukaemia (AML)

C) Hairy Cell Leukaemia

D) Mantle Cell Lymphoma

3. The image reveals red blood cells infected with small ring-shaped parasites. This is a hallmark of which species of malaria known for causing severe infections?



A) Plasmodium vivax

B) Plasmodium ovale

C) Plasmodium malariae

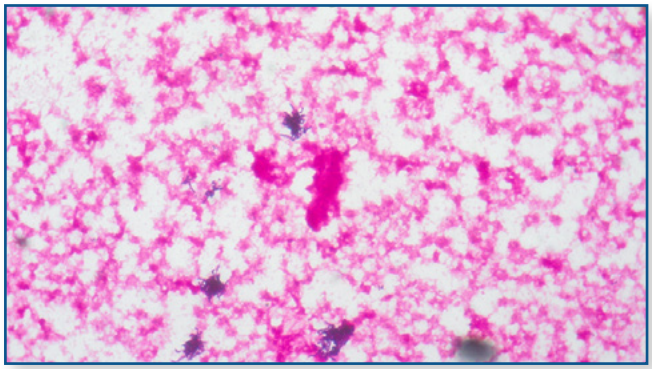
D) Plasmodium falciparum

All images by Jane Moon.

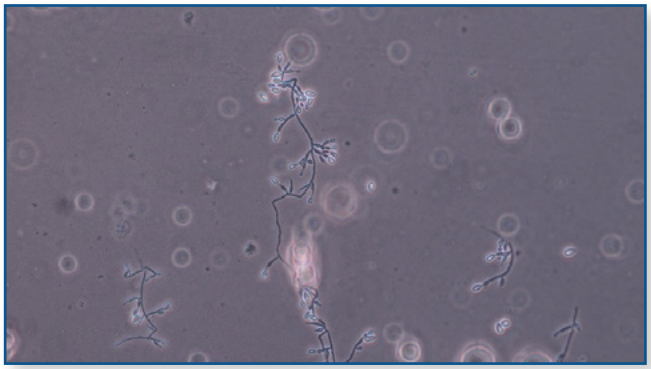
Blood Culture Gram Stain Quiz

[Answers on page 25]

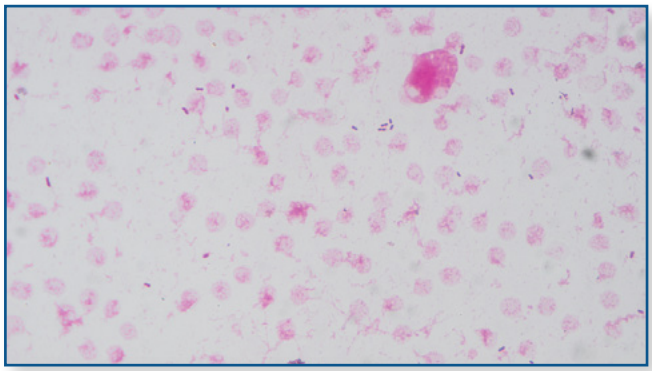
1. This is a Gram stain (x100 oil immersion) from an anaerobic bottle which flagged positive after 4 days incubation. What would you report? What organism do you think grew?



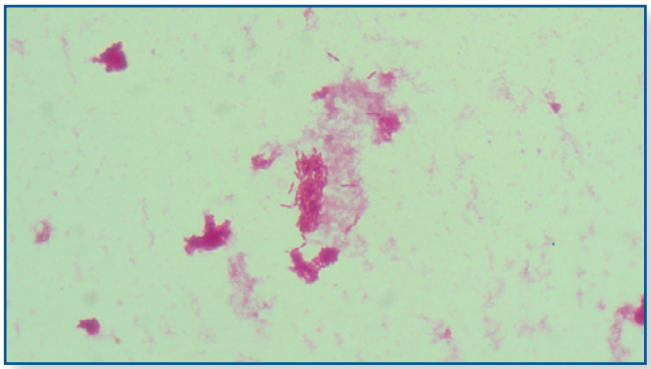
2. This is a wet preparation (x40 phase) from an aerobic bottle which flagged positive at 2 days incubation. What would you report? What organism do you think grew?



3. This is a Gram stain (x100 oil immersion) from an aerobic bottle which flagged positive after 18 hours incubation. The Gram-positive bacteria seen resemble which organism?



4. This is a Gram stain (x100 oil immersion) from an anaerobic bottle which flagged positive after 21 hours incubation. The aerobic bottle was No Growth after 5 days incubation. What could this organism be?



All images by Austin Pathology (Microbiology Department).

GET YOURSELF 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.
- Potential advantage in the recruitment process.

New applications for certification and renewals are processed by the professional bodies providing CPD. Please contact your relevant association for details.

If you encounter any problems or have any questions, please email: office@cmls.org.au.

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 Scientist 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**

Quiz Answers

Morphology Quiz

1. B) Pelger-Huët Anomaly
2. C) Hairy Cell Leukaemia
3. D) Plasmodium falciparum

Blood Culture Gram Stain Quiz

1. Gram positive bacilli – *Cutibacterium acnes*
2. Filamentous fungus – *Lomentospora prolificans*
3. *Streptococcus pneumoniae*
4. *Enterocloster (Clostridium) clostridioforme* – This Gram positive organism is known to stain as Gram negative.

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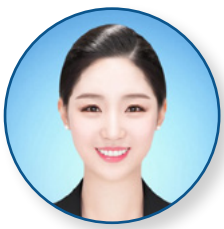

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