

Institute of Medical Molecular Biotechnology Newsletter



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IMMB International Webinar Series 05/2025: Integrating Machine Learning with Physical Modeling: Advancing Predictive Science Through Data-Driven Innovation. On 23rd April 2025, IMMB welcomed **Mr. Joseph R. Casale**, a Fulbright Student Scholar from the Rochester Institute of Technology, New York, USA, as the featured speaker for the fifth session of the IMMB International Webinar Series. In his talk, titled **Modeling and Machine Learning for Physical Problems**, Mr. Casale explored how machine learning techniques can be seamlessly integrated with traditional physical models to tackle complex scientific challenges. He underscored the importance of embedding appropriate constraints within machine learning frameworks to ensure consistency with physical laws - an approach that significantly enhances both the reliability and interpretability of predictive models. The presentation shed light on the evolving landscape of scientific modeling, illustrating how machine learning extends modelling capabilities beyond static datasets. By incorporating predictive elements, researchers can gain deeper insights into system behaviours and improve model adaptability to real-world conditions. The webinar drew 32 attendees, including students, academics, and researchers. It concluded with a dynamic and engaging Q&A session, during which Mr. Casale shared further insights into the practical applications of his work. IMMB extends its heartfelt thanks to Mr. Casale for delivering a thought-provoking and informative presentation, which made a valuable contribution to the centre's ongoing dialogue on computational modelling and data-driven science.



IMMB International Webinar Series 06/2025. Innovative Applications of Local Waste Materials for Environmental Sustainability: Insights from Dr. Daisuke Tanikawa. On 2nd May 2025, IMMB had the honor of welcoming **Associate Professor Dr. Daisuke Tanikawa** from the Department of Civil and Environmental Engineering, National Institute of Technology (KOSEN), Kure College, Japan. In his lecture titled **Effective Utilization of Local Wastes for Sustainable Technologies**, Dr. Tanikawa shared his cutting-edge research on innovative strategies for waste mitigation using locally sourced materials. A key focus of his talk was the application of oyster shells in industrial waste management, particularly within rubber processing facilities. In this system, oyster shells serve as a substrate for the growth of beneficial bacteria that facilitate the breakdown of industrial waste. Moreover, as the shells degrade, they release calcium ions that help regulate pH levels in waste streams, thereby enhancing the environmental compatibility of the treatment process. Dr. Tanikawa also shared a second case study from his research, highlighting the use of oyster shells in aquaponic systems. Here, the shells act as a sustainable and efficient source of calcium, promoting healthy plant growth. He emphasized the potential of oyster shells as a cost-effective, locally abundant resource with significant promise for both industrial and agricultural applications. The session attracted around 40 attendees, including faculty members, researchers, and students. It concluded with a lively and insightful Q&A session, reflecting strong interest in sustainable environmental technologies. IMMB sincerely thanks Dr. Tanikawa for his informative and thought-provoking presentation, which contributed significantly to the center's ongoing commitment in sustainability-focused research.

IMMB Research Talk IRT 06/2025: Understanding Antimicrobial Resistance in Indigenous Populations: Ecological and Cultural Perspectives from Malaysia. On 14th May 2025, IMMB hosted **Dr. Polly Yap**, a Postdoctoral Researcher at Monash University Malaysia. Her presentation, **"Exploring Antimicrobial Resistance in Marginalised Populations: Insights from Indigenous Communities in Malaysia,"** addressed a timely and critical issue in global public health. Dr. Yap's research delves into the emergence of antimicrobial resistance (AMR) within Indigenous communities in Malaysia, with a particular focus on the interplay between traditional lifestyles and natural environments. Her fieldwork involved immersive engagement with several Indigenous settlements, where she collected microbial and ecological data to better understand the presence and transmission of resistant microorganisms. During her talk, Dr. Yap emphasized how long-standing environmental exposures and traditional health practices may contribute to the development of unique antimicrobial characteristics within these communities. She advocated for a more inclusive and interdisciplinary research approach—one that integrates ecological, cultural, and biomedical perspectives to more effectively address AMR challenges, especially in underrepresented populations. The session was attended by approximately 24 participants and concluded with a lively discussion, reflecting strong interest in the intersection of microbiology, community health, and environmental science. IMMB extends its heartfelt appreciation to Dr. Polly Yap for her insightful and thought-provoking presentation, which brought much-needed attention to this underexplored yet vital area of research.



ACTIVITIES, INITIATIVES & INVOLVEMENT



Elabscience Visits IMMB: Strengthening Research Ties. On 22nd April 2025, the Institute of Medical Molecular Biotechnology (IMMB) had the pleasure of hosting **Mr. Ocean Guo, Senior Director of Sales & Marketing and Principal Representative of Elabscience**, during a special visit organized by **Prima Nexus Sdn. Bhd.**, distributor of Elabscience products in Malaysia. This visit served as a gesture of appreciation to IMMB for its vital contributions to medical molecular research and for the enduring trust placed in Elabscience products over the years. The visit began with a cordial meet-and-greet session with the IMMB Director, followed by a guided tour of the institute's state-of-the-art laboratories, offering Mr. Guo a firsthand look at ongoing research initiatives. A highlight of the day was a comprehensive technical talk by **Dr. Sundas Rana Qureshi, Business Development Manager at Elabscience**, who shared valuable insights on ELISA, IHC, Western Blot, and Cell Culture. Her session fostered engaging discussions and knowledge sharing among attendees. The event also featured a fun-filled lucky draw and quiz session, with exciting prizes sponsored by Elabscience. A networking lunch, generously provided by Prima Nexus, concluded the day on a high note. IMMB extends sincere thanks to Elabscience and Prima Nexus for their continued collaboration and support.



Outstanding research excellence recognized at ICRSMEA2025. IMMB proudly celebrates the outstanding accomplishments of our postgraduate students at **The 2nd International Conference on Reproductive Science & Medicine and Embryology and Andrology (ICRSMEA) 2025**, held from 24th – 25th April 2025 at the **Asia-Europe Institute, Universiti Malaya**. This highly regarded scientific gathering brought together global experts and emerging scientists to explore the latest reproductive health and molecular biotechnology developments. Three of our postgraduate students stood out among the high-performing delegates and earned recognition for their exceptional scientific contributions. **Mohamad Wafriy Che Ismail** clinched the **Gold Award for Best Oral Presentation** with his research titled **"Oxidative Stress Alters Mitochondrial Fusion in 2-cell Embryos of Ovalbumin-induced Allergic Asthma Murine Model,"** under the supervision of **Prof. Dr. Nor Ashikin Mohamed Noor Khan** co-supervision of **Assoc. Prof. Dr. Yuhaniza Shafinie Kamsani**, **Assoc. Prof. Dr. Suhaila Abd Muid** and **Dr. Mimi Sophia Sarbandi**. **Aqila Akmal Mohammad Kamal** earned the **Silver Award for Best Poster** for her project **"Increased Apoptosis in Mouse Embryos After Maternal Exposure to Bisphenol A Below the NOAEL,"** supervised by **Prof. Dr. Nor Ashikin Mohamed Noor Khan** and co-supervised by **Assoc. Prof. Dr. Yuhaniza** and **Dr. Fathiah Abdullah**. Meanwhile, **Nur Hafidz bin Ahamad Faudzi** secured the **Bronze Award for Best Poster** with his study on **tocotrienol's effect on oxidative stress in asthma-induced pregnancy models**, supervised by **Assoc. Prof. Dr. Yuhaniza Shafinie Kamsani** and co-supervised by **Prof. Dr. Nor Ashikin Mohamed Noor Khan**, and **Dr. Amirah Abdul Rahman**. These achievements reflect IMMB's strong research culture, quality supervision, and commitment to scientific excellence. Congratulations to all — you have made IMMB proud!



Fond Farewell to Madam Norita Salim and Mr. Azhar Ahmad. On 30th April 2025, IMMB and **The Medical Postgraduate Students Association (MediPA)** hosted a heartfelt farewell party in honor of **Madam Norita Salim** and **Mr. Azhar Ahmad**, marking their promotion to deputy science officer and departure from new postings. The gathering brought together colleagues and postgraduate students to celebrate their achievements and express gratitude for their years of dedicated service at IMMB. Madam Norita Salim and Mr. Azhar Ahmad significantly contributed to IMMB's research and academic excellence. Their steadfast commitment, professionalism, and collaborative spirit have driven various scientific and operational initiatives within the institute. Their presence has left a meaningful legacy, and the IMMB members will greatly miss them. Following their well-earned promotions, Madam Norita Salim will report for duty at the **Institute of Science (IOS), UiTM Shah Alam**, while En. Azhar Ahmad will begin his new role at the **Integrative Pharmacogenomics Institute (iPROMISE), UiTM Puncak Alam**. Both will officially assume their positions on 2nd May 2025. IMMB extends its warmest congratulations and sincere appreciation to both officers. We are proud of their accomplishments and confident they will continue to contribute on their new roles. The institute looks forward to maintaining strong ties and exploring future collaborations. We wish them all the best in the exciting journeys ahead.

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Joins Campus-Wide Effort for Energy Management Gold Standard Certification. IMMB has been selected as the pilot building for the **Energy Management Gold Standard (EMGS) – 1 Star** certification at **UiTM Sungai Buloh Campus**. This effort is part of the **ASEAN Energy Management Scheme (AEMAS)**. It is coordinated by the **Malaysian Green Technology and Climate Change Corporation (MGTC)**, aiming to recognize institutions that demonstrate structured and sustainable energy management practices. Since early 2025, IMMB has actively participated in energy-saving initiatives supported by the **Facilities Management Division**, which provides monthly electricity consumption reports to increase awareness and accountability. This data-driven approach allows IMMB to take informed actions in reducing energy use and enhancing operational efficiency. IMMB's involvement reflects its strong commitment to environmental sustainability and supports UiTM's vision of becoming a model for energy-conscious academic institutions across the region.



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Strengthening capacity with a new team member. On 2nd May 2025, the Institute of Medical Molecular Biotechnology (IMMB) welcomed **Madam Zaleha Afandi** as our new **Deputy Science Officer**. Before joining IMMB, she served at the **Institute of Science, Universiti Teknologi MARA (UiTM) Shah Alam**, where she built a strong foundation in research support and scientific operations. Madam Zaleha brings a wealth of experience, dedication, and a collaborative spirit that aligns well with IMMB's commitment to advancing excellence in medical molecular biotechnology. Her appointment is a valuable addition to our growing team, and her expertise will play a vital role in supporting research activities, laboratory management, and institutional development. We are confident her contributions will help elevate the institute's standing as a scientific innovation and collaboration center. The IMMB members extends its warmest welcome to Madam Zaleha and looks forward to working together to achieve greater research impact in the future.



Image of Month: The Four-Leaf Clover: A Symbol of Hope in Embryo Development. Under the detailed observation of the time-lapse imaging system, a culture dish unveiled a remarkable sight: an embryo progressing toward the blastocyst stage. This preimplantation phase, captured with precision, represents a critical moment before the embryo embeds itself into the uterus to begin its development into a fetus. Notably, one specific 4-cell embryo exhibited a striking resemblance to a four-leaf clover—a cherished symbol of good fortune. This rare and distinctive formation embodies hope for the embryo's successful journey toward becoming a healthy fetus. (Image courtesy of Aqila Akmal binti Mohammad Kamal, PhD student under supervision of Prof. Dr. Nor Ashikin Mohamed Noor Khan).

Celebrating Dedication: Supervisor Appreciation Day 2025. On 16th May 2025, the **Medical Postgraduate Association (MediPA)** proudly hosted **Supervisor Appreciation Day** at the Student Lounge from 10:00 a.m. to 12:00 p.m. The event honored our respected supervisors' dedication, mentorship, and unwavering support, bringing together lecturers, students, researchers, and staff in a joyful gathering. The event's director, Ms. Nur Firzanah, opened the event with a heartfelt speech, expressing deep gratitude to mentors who have guided countless in a research journeys. The celebration featured a vibrant potluck, with lecturers and students sharing homemade dishes that fostered a warm and communal atmosphere. Laughter and friendly competition filled the room during an interactive Quizizz game, where participants vied for top rankings. A light-hearted voting session followed, recognizing lecturers in fun and thoughtful categories and highlighting their unique traits. One of the most memorable moments was the gift presentation—each attending lecturer received a bouquet and curated gifts as tokens of appreciation. The celebration concluded with a cake-cutting ceremony and a touching sing-along by the students. Supervisor Appreciation Day 2025 was a meaningful tribute to the mentors who shaped the future of medicine and research—a day of gratitude, celebration, and heartfelt connection.



"The best of minds are those that understand themselves and help others to understand – Al-Farabi"