MALAYSIAN SOCIETY OF PHARMACOLOGY AND PHYSIOLOGY (MSPP)

UPNM
National Defence University of Malaysia
Kewajipan • Maruah • Integriti

UPNM 30
MENJAU KEGEMILANGAN, KEMPIMPIN MASA HADAPAN

MSPP-ARMy 2026

PROGRAMME BOOK

39th Annual Scientific Meeting

Malaysian Society of Pharmacology & Physiology (MSPP)

In Conjunction With

1st Advances in Research & Clinical Medicine of Today (ARMy)

2-3 September 2026 | Bangi Resort Hotel, Selangor

"BRIDGING LIFE'S MECHANICS & THERAPEUTICS FOR HEALTH SECURITY & RESILIENCE"

Supported by:

BRITISH PHARMACOLOGICAL SOCIETY

SILVER SPONSORS

MEDISHIELD

BIOSYSTEMS CORPORATION

BSC MALAYSIA SDN BHD

BRONZE SPONSORS

TECHMAN

The Engine Behind Life Science Innovation

everlife

NeoScience

Enabling Better Outcomes

MODIEZHAM

Sincere Appreciation To

- TRB Chemedica (Malaysia) Sdn Bhd
- Aspire Biosains PLT

WELCOMING REMARKS DEAN

On behalf of the Faculty of Medicine and Defence Health, National Defence University of Malaysia, it is my great honour to warmly welcome you to the 39th Scientific Meeting of the Malaysian Society of Pharmacology and Physiology (MSPP 2026), to be held on 2–3 September 2026 in Bangi, Malaysia.

We are privileged that NDUM has been invited to serve as the main organiser in collaboration with the Malaysian Society of Pharmacology and Physiology, a respected professional body dedicated to advancing excellence and ethics in pharmacology and physiology, and this partnership reflects our shared commitment to strengthening research, innovation, and collaboration in health sciences.

The conference theme, "Bridging Life's Mechanics & Therapeutics for Health Security and Resilience", underscores the urgent need to integrate physiology and pharmacology to address contemporary healthcare challenges, particularly within health security and defence health sciences, which aligns closely with UPNM's national mandate as Malaysia's defence university.

MSPP 2026 aims to provide a vibrant platform for sharing cutting-edge research, fostering collaboration among military, academic, healthcare, and industry partners, strengthening national and international networks, and supporting professional development for clinicians, academics, and postgraduate students.
Hosting this meeting is also part of our faculty's broader efforts, consistent with NDUM's strategic vision and ongoing initiatives such as strengthening postgraduate programmes, research innovation, and partnerships, to position NDUM as a leading centre in Defence Health Sciences and to contribute meaningfully to national resilience and health security.

We look forward to welcoming academics, military medical officers, Ministry of Health professionals, industry representatives, postgraduate students, and international experts to an engaging scientific exchange that will inspire new ideas, collaborations, and innovations for the benefit of our communities and nation.
I would like to express my sincere appreciation to MSPP, our organising committees, collaborators, sponsors, and participants for their support, and I look forward to welcoming you to Bangi for a productive and memorable MSPP 2026.

Best Regards,

Assoc. Prof. Dr. Mohd Fahmi bin Lukman
Consultant Anaesthesiologist
Acting Dean
Faculty of Medicine and Defence Health,
National Defence University of Malaysia

WELCOMING REMARKS
MSPP PRESIDENT

On behalf of the Malaysian Society of Pharmacology and Physiology (MSPP), it is my great pleasure to welcome you to the 39th Annual Scientific Meeting (MSPP2026), held in conjunction with the 1st ARMY Symposium, hosted by Universiti Pertahanan Nasional Malaysia (UPNM).

With the theme "Bridging Life's Mechanics & Therapeutics for Health Security & Resilience," MSPP2026 reflects our commitment to advancing scientific discovery at the interface of pharmacology, physiology, and clinical medicine. In an era where global health challenges are increasingly complex, interdisciplinary collaboration is not merely beneficial, it is essential.

This joint meeting represents a meaningful partnership between academia, healthcare professionals, researchers, and the Defence Medical Services. By bringing together experts in basic sciences, translational research, and clinical practice, we aim to foster dialogue that strengthens health security, promotes innovation, and builds national resilience. The scientific programme will highlight cutting-edge research and contemporary clinical advances under the umbrella of Advances in Research & Clinical Medicine of Today. Participants can look forward to insightful plenary lectures, symposia sessions, and vibrant abstract presentations that showcase the depth and diversity of our scientific community.

I encourage all delegates, academicians, clinicians, researchers, postgraduate students, and industry partners; to actively engage, network, and cultivate collaborations that extend beyond this meeting. MSPP has remained steadfast in its mission to promote excellence in pharmacology and physiology for nearly four decades. MSPP2026 continues this proud tradition while embracing new partnerships and perspectives.

I warmly invite you to join us on 2–3 September 2026 for what promises to be a dynamic and impactful scientific meeting. We look forward to welcoming you.

Assoc. Prof. Dr. Wan Amir Nizam Wan Ahmad
President
Malaysian Society of Pharmacology and Physiology (MSPP)

WELCOMING REMARKS
MSPP-ARMy CHAIRPERSON

On behalf of the Organising Committee, it is my sincere pleasure to welcome you to the 39th Annual Scientific Meeting of the Malaysian Society of Pharmacology and Physiology (MSPP 2026). This year's meeting is especially meaningful to us as it is held in conjunction with the inaugural Advances in Research and Clinical Medicine of Today (ARMy) Symposium.

The joint meeting reflects a shared commitment to strengthening the interface between fundamental biomedical research, clinical practice, and contemporary health challenges. By bringing these platforms together, we aim to encourage meaningful dialogue across disciplines and institutions.

Guided by the theme, "Bridging Life's Mechanics & Therapeutics for Health Security & Resilience," we have sought to design a programme that reflects both scientific depth and practical relevance. Through keynote addresses, plenary lectures, thematic symposia, free paper sessions, and a pre-conference workshop, we hope to create a setting where ideas are exchanged thoughtfully and collaborations begin naturally.

As Chairperson, I would like to acknowledge the dedication of the organising team and our partners who have worked closely to make this joint meeting possible. Hosting this conference is both a responsibility and a privilege, and we are grateful for the trust placed in us. We warmly welcome you to Bangi this September and look forward to two days of meaningful discussion, collegial exchange, and shared learning.

Warm regards,

Dr. Siti Hajar binti Adam
Organising Chairperson
MSPP-ARMy 2026

KEYNOTE SPEAKER

Bridging Life's Mechanics & Therapeutics for Health Security & Resilience

Lt Gen Dato' (Dr) Zulkeffeli bin Mat Jusoh

Director General of Health Services
Malaysian Armed Forces

Health security is too often imagined as stockpiles, surveillance networks, and supply chains, while the scientists who generate knowledge and the frontline teams who apply it remain worlds apart. Bringing together the 39th MSPP Scientific Meeting and the 1st ARMy Symposium, MSPP-ARMy 2026 confronts this vulnerability head-on: traditional health systems fail when bench discoveries cannot survive extreme environments or translate into field-ready treatments during crises. The keynote argues that closing this gap, not merely generating more data, is the true measure of national resilience.

Framing biology as a physical machine as much as a chemical one, the address pinpoints four systemic weak points that this conference is designed to dismantle: lags in biosecurity response, the limits of human physiology under extreme conditions, bottlenecks in data integration, and the isolation of disciplines that should be working together. To address these, four integrated pillars guide participants toward solutions.

The first, AI-driven healthcare innovation, accelerates drug discovery, precision diagnostics, and real-time surveillance — compressing the research-to-bedside timeline. The second, human health in diverse environments, draws on aviation and military stress research to advance emergency, sports, and rehabilitation medicine. The third, natural products to precision medicine, harnesses Malaysia's rich biodiversity through omics, mRNA technology, and nanotechnology to transform traditional compounds into targeted therapeutics. And the fourth, biosecurity for health resilience, unites civilian, military, and academic networks to strengthen rapid CBRN defence, surveillance, and crisis governance.

The keynote closes with a call to action: researchers, academicians, clinicians, and policymakers must dissolve disciplinary boundaries and build agile systems that move science directly from laboratory to bedside, forging a unified national framework where knowledge becomes resilience under real-world pressure.

DAY 1: WEDNESDAY, 2 SEPTEMBER 2026

Time	SESSION DETAILS
0800-0830	**Registration of Participants and Arrival of VVIPs**
0830-0835	**Singing of the Malaysian National Anthem (Negaraku), UPNM's Official Song (Capai Gemilang) and Recitation of Doa**
0840-0845	**Welcoming Remark & Chairperson** **Assoc. Prof. Dr. Mohd Fahmi Lukman** Acting Dean, Faculty of Medicine and Defence Health, UPNM
0845-0910	**Keynote Address** **Lt Gen Dato' (Dr) Zulkeffeli bin Mat Jusoh** Director General of Health Services, Malaysian Armed Forces (ATM) Theme: Bridging Life's Mechanics and Therapeutics for Health Security and Resilience
0910-0930	**Officiating Address** **Prof. Ts. Dr. Norhana Abdul Halim** Deputy Vice-Chancellor (Academic and International Affairs)
0930-1000	**Official Launching Ceremony of MSPP-ARMy 2026**
	Presentation of Tokens of Appreciation & Photography session
1000-1030	**Tea Break & Poster Viewing**
1030-1115	**PLENARY 1: HUMAN HEALTH IN DIVERSE ENVIRONMENTS** **Physiology of Flight: Adaptation and Resilience of Military Pilots in Hypobaric and High-G Environments** **Col (Dr) Zulkefley bin Mohammad** Head of Aerophysiology Dept, RMAF Institute of Aviation Medicine **Chairperson: Prof. Dr. M Taufik Hidayat Baharuldin (UPNM)** **MELUR (Main Hall)**
1115-1200	**PLENARY 2: AI-DRIVEN HEALTHCARE INNOVATION** **Transforming Patient Care: How AI and Data Science are Shaping the Future of Clinical Decisions and National Health** **Dr. Vivek Jason Jayaraj** Deputy Director, Digital Health Division, Ministry of Health Malaysia **Chairperson: Assoc. Prof. Dr. Roslaini Abd Majid (UPNM)** **MELUR (Main Hall)**

DAY 1: WEDNESDAY, 2 SEPTEMBER 2026

1200-1230	**Top 5 Poster Finalists - Rapid-Fire Session** **Moderator:** Dr. Khairul Anwar Zarkasi (UPNM) MELUR (Main Hall)	
1230-1400	**Lunch & Poster Viewing**	
1400-1530	**SYMPOSIUM 1:** **HUMAN HEALTH IN DIVERSE ENVIRONMENTS** **Moderator:** Assoc. Prof. Dr. Roslina Abdul Rahim (UIA) MELUR (Main Hall)	**SYMPOSIUM 2:** **AI-DRIVEN HEALTHCARE INNOVATION** **Moderator:** Assoc. Prof. Dr. Nurul Alimah Abdul Nasir (UiTM) MATAHARI (Parallel Hall)
	Beyond the Clock: Advancing Chronophysiology Towards Personalised Healthcare Prof. Dr. Norsham Juliana Nordin USIM	**Accelerating the Pipeline: How AI is Transforming Drug Discovery** Assoc. Prof. Dr. Jason Loo Siau Ee Taylor's University
	The Neurobiology of Adaptation: Pharmacological and Physiological Strategies for Extreme Stress Prof. Dr. Shaik Farid Abdull Wahab UniSZa	**AI-Driven Early Warning Systems for Infectious Disease Surveillance and Forecasting** Dr. Sarbhan Singh IMR
	Optimisation of Human Performance in Tropical Climates: Physiological Adaptations and Evidence-Based Strategies for Peak Performance Assoc. Prof. Dr. Zulkarnain Jaafar UM	**Clinician-centric Computational Tools: Transforming Biomedical Data into High-Precision Diagnostics** Prof. Dr. Mohd Zulfaezal Che Azemin UIAM
1530-1645	**Free Paper Session: Human Health in Diverse Environments** **Moderator:** Dr. Adila A Hamid (UKM) MELUR (Main Hall)	**Free Paper Session: AI-Driven Healthcare Innovation** **Moderator:** Dr. Marami Mustapa (UPNM) MATAHARI (Parallel Hall)
1645-1730	**2026 MSPP Annual General Meeting (AGM)** MELUR (Main Hall)	

DAY 2: THURSDAY, 3 SEPTEMBER 2026

TIME	SESSION DETAILS	
0800-0830	**Registration**	
0830-0915	**PLENARY 3: NATURAL PRODUCTS TO PRECISION THERAPEUTICS** **Pharmacology as the Engine of Precision Therapeutics for Biodiversity** **Dr. Ami Fazlin Syed Mohamed** Director of Institute for Medical Research (IMR), National Institutes of Health (NIH) **Chairperson: Assoc. Prof. Dr. Nani Nordin (UPNM)** **MELUR (Main Hall)**	
0915-1000	**PLENARY 4: BIOSECURITY FOR HEALTH RESILIENCE** **Bridging Health Concerns & Biotherapeutics Towards National Health Security** **Lt Col Prof. Dr. Victor Feizal bin Knight Victor Ernest @ Abd Shatar (Rtd)** Executive Director of Sultan Ibrahim Centre of Excellence (PaKSI), National Defence University (UPNM) **Chairperson: Ts. Dr. Nik Noorul Shakira Mohamed Shakrin (UPNM)** **MELUR (Main Hall)**	
1000-1030	**Tea Break & Poster Viewing**	
1030-1230	**Free Paper Session: Natural Products to Precision Therapeutics** **Moderator: Dr. Nur Lisa Zaharan (UPNM)** **MELUR (Main Hall)**	**Free Paper Session: Biosecurity for Health Resilience** **Moderator: Dr. Asma Assa'edah Mahmud (UPNM)** **MATAHARI (Parallel Hall)**
1230-1415	**Lunch & Poster Viewing**	

DAY 2: THURSDAY, 3 SEPTEMBER 2026

1400-1530	**SYMPOSIUM 3:** **NATURAL PRODUCTS TO PRECISION THERAPEUTICS** **Moderator:** Assoc. Prof. Dr. Dharmani Devi Murugan (UM) MELUR (Main Hall)	**SYMPOSIUM 4:** **BIOSECURITY FOR HEALTH RESILIENCE** **Moderator:** Dr. Sarah Iziani Ramli (UPNM) MATAHARI (Parallel Hall)
	Decoding Life's Mechanics: Vascular Resilience and Natural Bioactives Assoc. Prof. Dr. Wan Amir Nizam Wan Ahmad USM - MSPP President	**From Protocols to Preparedness: Operationalising a Biorisk Management Framework for Malaysia's Public Health Network** Dr. Rosvinder Singh CPRC, MOH
	Genomic Medicine for Health System Resilience: Precision Diagnostics and Pharmacogenomics in Clinical Practice Prof. Dr. Teh Lay Kek UiTM	**Medical CBRNe Preparedness: Transitioning Reactive Emergency Care into Resilient Healthcare Systems** Dr. Hazlina Mohamad Noh Hospital Selayang, MOH
	Dual-Targeted Inhalable Immunoliposomes for Precision Pulmonary Therapy Against SARS-COV-2 Prof. Dr. Mohd Cairul Iqbal Mohd Amin UKM	**Beyond One-Size-Fits-All: Towards Personalised Breast Cancer Vaccines via Biomimetic Cancer Cell Membrane Nanotechnology** Assoc. Prof. Dr. Fazren bin Azmi UKM
1530-1600	**MSPP's Young Investigator Award** **Chairperson:** Assoc. Prof. Ts Dr Izuddin Fahmy Abu (UniKL)	
1600 -1630	**Prize Giving & Closing Ceremony** British Pharmacological Society–sponsored Oral & Poster Presentation Awards **Chairpersons:** Dr. Siti Hajar Adam, Chair of MSPP-ARMy 2026	

Plenary Abstracts

PLENARY SPEAKER 1

Physiology of Flight: Adaptation and Resilience of Military Pilots in Hypobaric and High-G Environments

Zulkefley Mohammad

Institute of Aviation Medicine, Royal Malaysian Air Force,
Subang Air Base, 40000 Shah Alam, Selangor Darul Ehsan

drzulk.mohammad@gmail.com

Abstract:
Military pilots routinely operate in environments that impose significant physiological stress, notably hypobaric conditions at altitude and high positive Gz during tactical maneuvers, which challenge oxygen delivery, cerebral perfusion, cognitive function, and overall operational effectiveness. This presentation aims to synthesize current evidence on physiological adaptations and resilience mechanisms that support safe and effective pilot performance in hypobaric and high-G environments and to summarize practical countermeasures. Methods comprised a narrative review and synthesis of aerophysiology literature, operational reports, and training studies addressing hypoxia, hypobaria, and G-induced impairment, with emphasis on physiological responses, individual susceptibility factors, and validated mitigation strategies. Findings indicate that reduced atmospheric pressure and hypoxia impair oxygen transport, neurocognitive function, and situational awareness, while positive Gz induces cardiovascular redistribution that can compromise cerebral perfusion and vision; common recognition signs include visual disturbances, slowed cognition, and behavioral change, and resilience is modulated by physical fitness, fatigue, hydration, stress, and interindividual variability. Evidence-based countermeasures include altitude-chamber exposure, recurrent aerophysiological training, anti-G straining maneuvers (AGSM), anti-G protective equipment, and psychological preparedness with decision-making training, and combined physiological and behavioral interventions enhance tolerance, expedite recognition and recovery, and improve operational safety. As conclusion, integrating physiological understanding with targeted training and equipment markedly strengthens aircrew adaptation and resilience to hypobaric and high-G stressors, and continued implementation of evidence-based, individualized readiness strategies is essential to optimize performance and mission survivability.

Keywords: altitude chamber; anti-G straining maneuvers; G-forces; hypobaric hypoxia; military pilot

PLENARY SPEAKER 2

Transforming Patient Care: How AI and Data Science are Shaping the Future of Clinical Decisions and National Health

Vivek Jason

Digital Health Division,
Ministry of Health Malaysia, Putrajaya, Malaysia

vivekjason.j@moh.gov.my

Abstract:
Artificial intelligence (AI) and data science are increasingly reshaping healthcare by enabling more timely, consistent, and data-informed decision-making across clinical and population health settings. Applications include predictive analytics, machine learning, natural language processing, and generative AI to support risk stratification, diagnostic and treatment decisions, workflow optimisation, disease surveillance, resource allocation, and health-system planning. The potential value of these technologies extends beyond individual patient care to national health systems, where integrated data and advanced analytics can strengthen situational awareness, improve service efficiency, and support more proactive responses to emerging health needs. However, effective adoption requires robust digital foundations, including high-quality and interoperable data, appropriate governance, privacy and security safeguards, transparency, and meaningful human oversight. AI should therefore be positioned as an augmentative capability that supports rather than replaces clinical expertise and public health judgement. Sustainable implementation also requires alignment with real-world workflows, clear accountability, continuous evaluation, and evidence of measurable benefit. Progress from isolated pilots to scalable national adoption will depend on building trustworthy systems that deliver practical value for patients, healthcare professionals, organisations, and health systems while maintaining safety, equity, and public confidence.

Keywords: artificial intelligence; clinical decision-making; data science; digital health; population health

PLENARY SPEAKER 3

Pharmacology as the Engine of Precision Therapeutics for Biodiversity

Siti Hajar Muhamad Rosli[1], Terence Tan Yew Chin[1], Ami Fazlin Syed Mohamed[2]*

[1]Herbal Medicine Research Centre, Institute for Medical Research, Malaysia, National Institutes of Health Complexes, Shah Alam, Selangor, Malaysia
[2]Director's Office, Institute for Medical Research, Malaysia, National Institutes of Health Complexes, Shah Alam, Selangor, Malaysia

*Correspondence: ami@moh.gov.my

Abstract:
Biodiversity has given medicine many of its most valuable molecules. Yet countless promising discoveries remain confined to laboratories, never progressing into treatments that benefit patients. Pharmacology is what makes that transition possible. It connects biological discovery with mechanism, exposure, dose, safety, efficacy and the variability that shapes individual treatment response. This plenary lecture will examine how pharmacology can drive discoveries from diverse ecosystems across the translational continuum. Natural products, microbial metabolites and other biologically active compounds offer distinctive chemical structures and new possibilities for treating infectious diseases, cancer, metabolic disorders and emerging health threats. Finding an active compound, however, is only the first step. Its therapeutic potential must be defined through rigorous characterization of its target, mechanism of action, exposure–response relationship, toxicity and clinically relevant dosing. Advances in pharmacometrics, systems pharmacology, multi-omics, artificial intelligence and biomarker science are making these decisions more precise. They can help identify patients most likely to benefit, explain variability in response, optimize combination therapies and reduce the likelihood of costly late-stage failure. Scientific innovation alone is not enough. Progress also depends on reproducible research, well-characterized biological resources, sustainable access, equitable benefit sharing and regulatory pathways that recognize the complexity of natural products. For countries rich in biological resources, the opportunity is substantial. By combining biodiversity science with quantitative and translational pharmacology, health systems can build stronger, more diverse therapeutic pipelines. Biodiversity becomes a meaningful health asset only when pharmacology turns biological promise into sound evidence, better decisions and safe, effective and equitable medicines.

Keywords: biodiversity; natural product; pharmacology; therapeutics; translational research

PLENARY SPEAKER 4

Bridging Health Concerns and Biotherapeutics towards National Health Security

Victor Feizal Abd Shatar

Executive Director, Sultan Ibrahim Centre for Research and Innovation Excellence (PaKSI)
National Defence University od Malaysia

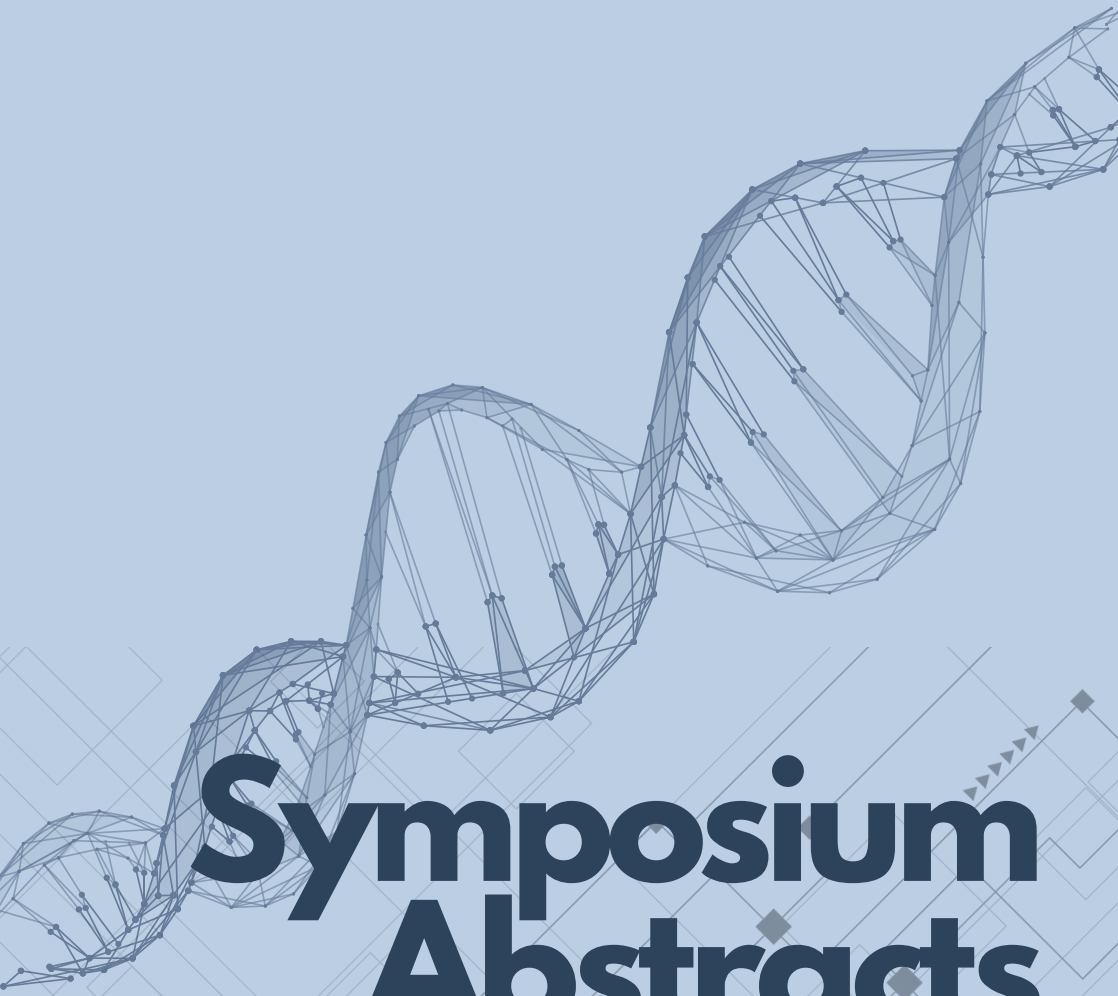
victor.feizal@upnm.edu.my

Abstract:

Emerging biological threats, antimicrobial resistance, and global supply chain disruptions pose severe risks to national health security. This presentation outlines a comprehensive strategy to transition from reactive emergency management to proactive national defence by establishing advanced biotherapeutics as core national infrastructure. By integrating health threat intelligence with agile biotherapeutic manufacturing, nation-states can bridge public health vulnerabilities and achieve strategic self-reliance. Central to this framework is the adoption of next-generation platform technologies which include mRNA therapies, monoclonal antibodies, and recombinant proteins that permit rapid, modular, and scalable countermeasure development. To effectively translate innovation into implementation, regulatory modernisation through adaptive clinical trials, expedited authorisation pathways, and domestic technology transfer is needed. Ensuring infrastructure resilience requires localised, flexible biomanufacturing facilities, secured input supply chains, active surge capacity, and robust cold-chain logistics. Furthermore, a unified One Health early warning network linking real-time genomic surveillance directly to rapid drug design pipelines ensures the availability of immediate response capabilities. Sustaining this ecosystem necessitates strategic policy frameworks, public-private partnerships, dual-use commercial models to maintain inter-pandemic readiness, and continuous workforce development across bioinformatics and bioprocess engineering. A phased strategic roadmap, spanning short-term regulatory and surveillance alignment, medium-term infrastructure expansion, and long-term biotherapeutic self-reliance is needed to provide a actionable path to converting systemic health vulnerabilities into enduring national security strength.

Keywords: biotherapeutics; health security; emerging biological threats; surge capacity; genomic surveillance

MSPP-ARMy2026



Symposium Abstracts

SYMPOSIUM 1

Translating Chronophysiology into Personalised Healthcare

Norsham Juliana

Physiology Unit, Department of Medical Science, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, 71800 Nilai, Negeri Sembilan, Malaysia

njuliana@usim.edu.my

Abstract:
Healthcare is personalised by 'what' we measure, yet overlooks 'when' physiology is measured and when care is delivered. Chronophysiology addresses this missing dimension by examining how circadian and ultradian rhythms shape sleep, hormonal regulation, nutrition, cognition, metabolism and resilience. This presentation translates findings from a Malaysian research programme into a framework for time-informed, person-centred healthcare. The programme brings together data from approximately 1,600 Malaysians, including women, young adults, shift workers from government agencies, industry, private healthcare and public healthcare, and patients living with advanced disease. Evidence is generated through surveys, qualitative inquiry, chronotype and chrononutrition assessments, repeated measurements across work shifts, wearable monitoring, and circadian biomarkers, including cortisol and melatonin. Across these populations, health risk is influenced not only by what people do, but by whether sleep, eating, activity, work demands, and physiological responses occur at biologically appropriate times. Studies among shift workers reveal disrupted sleep, social jetlag, irregular meal timing, night eating and difficulties sustaining healthy behaviours. Related findings link circadian disruption with altered cortisol regulation, psychosocial well-being, cardiovascular risk and reproductive health. Among our adult populations, chronotype and sleep behaviours are associated with mental well-being, eating behaviours, and adiposity traits, reinforcing the need for tailored approaches rather than uniform recommendations. Translating these insights into healthcare means moving beyond measurements towards rhythm-aware screening, interpretation and intervention. Integrating the biological timing with behavioural, occupational and clinical contexts, chronophysiology can support more precise prevention, monitoring, and care at the right biological time.

Keywords: chronophysiology; circadian rhythm; personalised healthcare; chronotype; shift work

SYMPOSIUM 1

The Neurobiology of Adaptation: Pharmacological and Physiological Strategies for Extreme Stress

Shaik Farid Abdull Wahab[1,2]

[1]Faculty of Medicine, Universiti Sultan Zainal Abidin, Kampus Kota, Jalan Sultan Mahmud, 21300 Kuala Nerus, Terengganu, Malaysia
[2]Hospital Sultan Zainal Abidin, Universiti Sultan Zainal Abidin, Kampus Gong Badak, 21300 Kuala Nerus, Terengganu, Malaysia

shaikfarid@unisza.edu.my

Abstract:
Extreme stress is an inevitable component of emergency medicine, critical care, disaster response, and other high-risk professions. While acute stress activates adaptive physiological mechanisms essential for survival, prolonged or repeated exposure can overwhelm these systems, resulting in impaired cognition, emotional dysregulation, burnout, and long-term health consequences. Advances in neuroscience have transformed our understanding of how the brain and body respond to extreme stress, highlighting the dynamic interplay between the autonomic nervous system, hypothalamic–pituitary–adrenal (HPA) axis, neuroendocrine signalling, and neuroplasticity in determining an individual's capacity to adapt and recover. This presentation explores the neurobiological mechanisms that underpin human adaptation to extreme stress. Complementing these interventions, physiological strategies such as controlled breathing, sleep optimisation, physical conditioning, nutrition, heart rate variability biofeedback, and mindfulness will be examined for their roles in enhancing autonomic regulation, promoting neuroplasticity, and accelerating recovery. Drawing upon current evidence from emergency medicine, intensive care, military medicine, occupational health, and human performance science, this session provides a translational perspective that bridges fundamental neuroscience with practical clinical application. Participants will gain a deeper understanding of stress adaptation as a modifiable biological process and leave with evidence-informed strategies to enhance resilience, improve decision-making under pressure, and support both patient care and healthcare workforce wellbeing in demanding environments.

Keywords: adaptation; emergency; extreme stress; neurobiology

SYMPOSIUM 1

Optimisation of Human Performance in Tropical Climates: Physiological Adaptations and Evidence-Based Strategies for Peak Performance

Zulkarnain Jaafar

Faculty of Sports and Exercise Science, Universiti Malaya, 50603 Kuala Lumpur, Malaysia

zulkarnainj@um.edu.my

Abstract:
As major sporting events are increasingly hosted in tropical environments, athletes face the extreme physiological challenge of high ambient temperature (30-40°C+) combined with relative humidity exceeding 70-90%, where saturated air limits evaporative cooling and renders the body's primary thermoregulatory mechanism ineffective. This environmental double threat accelerates cardiovascular drift, induces central nervous system fatigue, and causes rapid dehydration collectively reducing power output and increasing perceived exertion by 6-10% in unacclimatized athletes. This 30-minute presentation delivers a comprehensive, evidence-based framework for optimizing human performance in hot and humid conditions, bridging the gap between laboratory research and practical application. Beginning with an analysis of the physiological challenge, including the critical core temperature threshold of 40°C and its impact on CNS function, the presentation introduces new 2026 research on Heat Shock Protein 70 (HSP70) response, revealing that 57% of this cellular repair mechanism is explained by V̇02max, exercise duration, and intensity demonstrating that aerobic fitness directly enhances cellular resilience to thermal stress. Key strategies covered include the non-negotiable 10-14 day heat acclimatization period, detailing plasma volume expansion and sweat dilution for electrolyte conservation; comparative efficacy of pre-cooling techniques with ice slurry ingestion as the gold standard versus per-cooling methods; the mathematics of hydration addressing the inevitable gap between sweat rates of 2-3 L/hr and gut absorption capacity of ~1 L/hr, with protocols for sodium pre-loading and electrolyte management; and metabolic adjustments recognizing increased carbohydrate utilization in heat, supported by even-pace or negative-split pacing strategies to delay core temperature rise.

Keywords: athletic performance; cooling; electrolyte balance; heat acclimatization; thermoregulation

SYMPOSIUM 2

Clinician-Centric Computational Tools: Transforming Biomedical Data into High-Precision Diagnostics

Mohd Zulfaezal Che Azemin

Integrated Omics Research Group, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia

zulfaezal@iium.edu.my

Abstract:
Computational tools can transform complex biomedical data into clinically meaningful measurements, yet many algorithms remain limited by operator dependence, weak biological validation, inadequate attention to image quality, and poor integration into clinical workflows. This invited review examines the development of clinician-centric computational methods across retinal imaging, ocular surface assessment, chest radiography, and structural magnetic resonance imaging. The objective is to demonstrate how robust quantitative biomarker extraction can progress from methodological development to clinically interpretable prediction and deployable diagnostic support. Relevant studies conducted between 2011 and 2026 were synthesised, beginning with a segmentation-independent fractal analysis method for retinal vasculature and extending to zone-specific vascular measurements, automated pterygium grading, deep-learning-based chest X-ray classification, diabetic retinopathy screening, high-resolution retinal vessel segmentation, questionnaire-based dry-eye prediction, and regional brain MRI radiomics. Across these studies, computational approaches improved measurement repeatability, reduced dependence on subjective grading, and identified clinically or biologically relevant patterns. Retinal vascular complexity was associated with ageing and stroke risk, while deep-learning models for referable diabetic retinopathy achieved sensitivities exceeding 97%. A clinician-oriented high-resolution retinal imaging system demonstrated improved glaucoma classification compared with an established automated pipeline and achieved favourable usability scores. In structural MRI, volume-of-interest fractal and radiomic analyses enabled regional characterisation of brain morphology associated with intensive scripture memorisation. Collectively, these findings show that high-precision diagnostics require more than algorithmic accuracy; they depend on reliable data acquisition, anatomically meaningful features, clinician-defined reference standards, interpretability, validation, and usability. This body of work provides a translational framework for developing computational tools that augment clinical judgement across biomedical data modalities.

Keywords: artificial intelligence; biomedical imaging; clinical decision support; fractal analysis; radiomics

SYMPOSIUM 2

Accelerating the Pipeline: How AI is Transforming Drug Discovery

Jason S.E. Loo

School of Pharmacy, Faculty of Health and Medical Sciences, Taylor's University, No. 1, Jalan Taylor's, 47500 Subang Jaya, Selangor, Malaysia

jasonsiauee.loo@taylors.edu.my

Abstract:
Artificial intelligence (AI) has seen unprecedented expansion in application and scope in recent years, driven by advances in GPU and cloud computing technologies. The pharmaceutical industry and drug discovery have similarly seen an unprecedented shift in how computational tools are used to accelerate various aspects of the drug discovery process, from protein structure prediction to drug optimization and antibody design. AI-based approaches, which learn patterns from existing data, were traditionally considered distinct from molecular simulation methods, which are grounded in foundational principles of physics. In this talk, we explore the increasingly blurred boundary between these two paradigms, highlighting how AI is also enhancing physics-based simulations, and how this may represent the most promising path towards expanding computational drug discovery. To demonstrate the impact of AI-enhanced simulations, we use the example of one of our recent works, in which we trained a deep learning collective variable to effectively drive funnel metadynamics simulations aimed at identifying the previously ambiguous binding site of quercetin on calcineurin. In contrast, we also highlight the limitations of AI-driven approaches, where benchmarking of machine learning-based docking revealed strong performance for well-studied targets such as kinases, but considerably weaker performance for sparse, underrepresented targets such as Golgi alpha-mannosidase II. We conclude with a broader survey of other emerging hybrid approaches and reflect on how AI can meaningfully accelerate drug discovery but will continue to require meaningful and well-curated data from experimentalists.

Keywords: Artificial intelligence; simulations; metadynamics; drug discovery; calcineurin

SYMPOSIUM 2

AI-Driven Early Warning Systems for Infectious Disease Surveillance and Forecasting

Sarbhan Singh*, Nuur Hafizah Md. Iderus, Sumarni Mohd Ghazali, Lonny Chen Rong Qi Ahmad, Nur'ain Mohd Ghazali, Mohd Nadzmi Md Nadzri, Asrul Anuar, Mohd Kamarulariffin Kamarudin, Teh Chien Huey, Chew Cheng Hoon, Lim Mei Cheng, Mohd Azahadi Omar

Institute for Medical Research (IMR),
National Institutes of Health (NIH),
Ministry of Health Malaysia, Setia Alam, 40170 Malaysia

*Correspondence: lssarbhan@moh.gov.my

Abstract:
Early warning systems are essential for the timely detection, monitoring and prediction of infectious disease threats to support effective public health action. With increasing availability and complexity of health-related data, artificial intelligence (AI) offers opportunities to enhance traditional epidemiological approaches for infectious disease surveillance and forecasting. This work explores the role of AI-driven early warning systems through experiences from COVID-19 and dengue modelling in Malaysia. During the COVID-19 pandemic, traditional models including time-series, compartmental, serial interval and situational matrix approaches were used to forecast case trends, epidemic peaks, intervention effects and disease transmissibility, providing evidence to guide public health decision-making. For dengue, where disease dynamics and data sources are more complex, modelling approaches have expanded to include bipartite network models, probabilistic ensemble models, machine learning and deep learning. These approaches enable the integration of epidemiological, environmental, entomological and virological data to improve hotspot detection and disease forecasting at different spatial and temporal scales. The experience from both diseases demonstrates that AI should not replace traditional epidemiological models, but rather complement and strengthen them. Integrating traditional and AI-driven modelling approaches can provide a more comprehensive early warning framework, generating stronger and more timely evidence for infectious disease surveillance, forecasting and public health decision-making.

Keywords: artificial intelligence; early warning systems; infectious disease forecasting; infectious disease surveillance; predictive modelling

SYMPOSIUM 3

Genomic Medicine for Health System Resilience: Precision Diagnostics and Pharmacogenomics in Clinical Practice

Teh Lay Kek

Faculty of Pharmacy, UiTM Puncak Alam Campus, 42300 Bandar Puncak Alam, Selangor, Malaysia

tehlaykek@uitm.edu.my

Abstract:
Advances in omics technologies, particularly genomics and metabolomics, are reshaping modern healthcare by enabling precise diagnosis and individualized therapeutic strategies. In Malaysia and other genetically diverse populations, the integration of next-generation sequencing (NGS) into clinical practice has improved diagnostic yield for rare diseases while providing clinically actionable insights for pharmacogenomics (PGx). The application of multi-omics approaches in clinical settings is demonstrated using NGS for rare disease diagnostics and pharmacogenomic profiling, complemented by metabolomics to enhance functional interpretation of genetic variants. Real-world implementation through collaborations with industry partners such as Zakesy Biotech highlights both the opportunities and practical challenges of translating omics technologies into routine care. Population-level data indicate a high prevalence of actionable pharmacogenomic variants, supporting the need for a structured and scalable implementation strategy. For nationwide rollout, a tiered approach is proposed: targeted genotyping panels for pharmacogenomics to ensure cost-effective clinical deployment, while NGS and array-based platforms remain essential for research, discovery, and comprehensive rare disease diagnostics. In addition, array-based testing offers a cost-effective solution for wellness and population screening applications. Findings from studies assessing awareness and perception of genomic medicine and direct-to-consumer (DTC) genetic testing among the general public and healthcare practitioners reveal important knowledge gaps and highlight the need for education, governance, and clinical guidelines. The integration of omics-driven diagnostics into healthcare systems requires coordinated strategies encompassing clinical workflows, infrastructure, cost considerations, and policy development. A pragmatic framework for implementation supports improved patient outcomes, optimized therapeutic decision-making, and long-term sustainability, contributing to a more resilient and responsive healthcare system.

Keywords: clinical implementation framework; next-generation sequencing; pharmacogenomics; rare disease diagnosis; precision medicine

SYMPOSIUM 3

Dual-targeted Inhalable Immunoliposomes for Precision Pulmonary Therapy Against SARS-CoV-2

Mohd Cairul Iqbal Mohd Amin

Faculty of Pharmacy, Universiti Kebangsaan Malaysia,
56000 Cheras, Kuala Lumpur, Malaysia

mciamin@ukm.edu.my

Abstract:
In response to the continuing global burden of SARS-CoV-2 infection, we developed an aerosolized immunoliposome platform for targeted pulmonary antiviral delivery. Repurposed antiviral agents, including favipiravir and remdesivir, were encapsulated within biodegradable phospholipid-based liposomes and surface-functionalized with monoclonal antibodies or nanobodies, including bevacizumab and Ty1, to enable selective recognition of viral and inflammatory targets. This dual-targeted strategy was designed to enhance lung-specific deposition, improve localized drug retention, and reduce off-target systemic exposure. Formulated for inhalation-based administration, the immunoliposomes demonstrated favorable technical characteristics and promising antiviral activity, supporting their potential for effective intervention in both acute and persistent SARS- CoV-2 infection. These findings highlight the translational potential of aerosolized immunoliposomes as a versatile nanotherapeutic platform for current and emerging respiratory viral diseases.

Keywords: COVID-19; immunoliposomes; nanomedicine; repurposed drug; SARS-CoV-2

SYMPOSIUM 3

Decoding Life's Mechanics: Vascular Resilience and Natural Bioactives

Liyana Nursyahirah Johari[1], Wan Edrina Farisha Wan Rosalman[1], Liza Noordin[2], Wan Amir Nizam Wan Ahmad[1]*

[1]Biomedicine Programme, [2]Department of Physiology, School of Health Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia

*Correspondence: wanamir@usm.my

Abstract:
Cardiovascular disease remains a leading global health challenge, with conventional therapeutic approaches primarily targeting symptom control rather than restoring the intrinsic adaptive capacity of the vascular system. There is an emerging concept of vascular resilience, defined as the ability of blood vessels to maintain structural integrity and physiological function despite internal and external stressors. The conceptual shift is from treating vascular pathology to promoting vascular resilience, integrating endothelial function, vascular smooth muscle regulation, extracellular matrix integrity, and immune homeostasis as interconnected determinants of vascular health. The therapeutic potential lies in natural bioactive compounds that exert pleiotropic pharmacological actions through antioxidant, anti-inflammatory, endothelial-protective, and vascular remodelling pathways. Representative bioactive compounds, including quercetin, curcumin, and cyanidins, can simultaneously modulate multiple molecular targets involved in vascular dysfunction. Malaysia's rich biodiversity is an underexplored reservoir for vascular therapeutics and proposes a translational roadmap encompassing bioactive discovery, standardisation, preclinical validation, mechanistic investigation, clinical evaluation, and precision medicine implementation. The example is a translational framework based on the research group's work, a standardised natural bioactive intervention derived from Etlingera elatior to enhance vascular function and resilience. Guided by a bench-to-bedside approach, the study integrated phytochemical standardisation, extract preparation, efficacy evaluation, and mechanistic investigations using experimental hypertension models. Standardisation protocols ensured batch-to-batch consistency of the bioactive extract before pharmacological evaluation. The intervention demonstrated significant improvements in vascular function, including normalisation of blood pressure, restoration of vascular responsiveness, preservation of endothelial integrity, and attenuation of pathological vascular remodelling.

Keywords: bioactive compounds; cardiovascular disease; endothelial function; translational pharmacology; vascular resilience

SYMPOSIUM 4

Beyond One-Size-Fits-All: Towards Personalised Breast Cancer Vaccines via Biomimetic Cancer Cell Membrane Nanotechnology

Fazren Azmi

Faculty of Pharmacy, Universiti Kebangsaan Malaysia, 56000 Cheras, Kuala Lumpur, Malaysia

fazren.azmi@ukm.edu.my

Abstract:
Breast cancer remains a leading cause of cancer-related mortality among women, with HER2/neu as a key immunotherapeutic target. Here, we present a biomimetic nanovaccine that integrates shared tumour-associated antigen (TAA) peptides with a personalised antigenic landscape. A multi-epitope immunogen comprising cytotoxic T lymphocyte (GP2) and B-cell (P4) epitopes derived from HER2/neu, conjugated to KLH (a carrier protein), was encapsulated in liposomal nanoparticles and camouflaged with cancer cell membranes. This biomimetic coating provides a patient-relevant repertoire of tumour-specific antigens, enabling personalised immune priming. In a HER2/neu-positive TUBO tumour-bearing mouse model, the nanovaccine elicited strong humoral and cellular immune responses, delayed tumour growth, and improved survival in both prophylactic and therapeutic settings, with a favourable safety profile. Furthermore, combination with CAR-T therapy demonstrated synergistic anti-tumour efficacy, highlighting the potential of this platform for next-generation personalised cancer immunotherapy.

Keywords: biomimetic; breast cancer; cancer vaccines; nanoparticles

SYMPOSIUM 4

From Protocols to Preparedness: Operationalising a Biorisk Management Framework for Malaysia's Public Health Network

Rosvinder Singh

Public Health Emergency Preparedness Sector, Disease Control Division,
Ministry of Health Malaysia

dr.rosvinder@moh.gov.my

Abstract:
Malaysia's public health system faces increasingly complex biological risks arising from emerging infectious diseases, laboratory expansion, rapid technological advances, and the movement of biological materials across sectors. While biosafety and biosecurity policies provide important safeguards, implementation can remain fragmented across institutions, with variable governance, competency, risk assessment, incident reporting, and emergency preparedness. This paper proposes an operational biorisk management framework and preparedness in public health practice at Ministry of Health Malaysia. The lecture is structured around five operational domains: governance and accountability; risk assessment and control; workforce competency and safety culture; surveillance, incident management, and emergency response; and continuous monitoring and improvement. A policy-to-practice implementation approach is used to align these domains with institutional responsibilities, workforce requirements, communication pathways, and performance indicators across laboratories, healthcare facilities, public health agencies, and relevant partner organisations. The framework emphasises risk-based decision-making, clear lines of responsibility, standardised competency development, routine exercises, interoperable reporting mechanisms, and periodic performance review. Operationalising biorisk management in this manner is expected to reduce implementation gaps, strengthen institutional readiness, and improve coordination during biological incidents. The framework provides a practical basis for integrating biosafety, biosecurity, and preparedness within Malaysia's public health system and may support future national guidance, capacity-building initiatives, and evaluation of biorisk management performance.

Keywords: biorisk management; biosafety; biosecurity; Malaysia; public health preparedness

SYMPOSIUM 4

Medical CBRNe Preparedness: Transitioning Reactive Emergency Care into Resilient Healthcare Systems

Hazlina Mohamad Noh

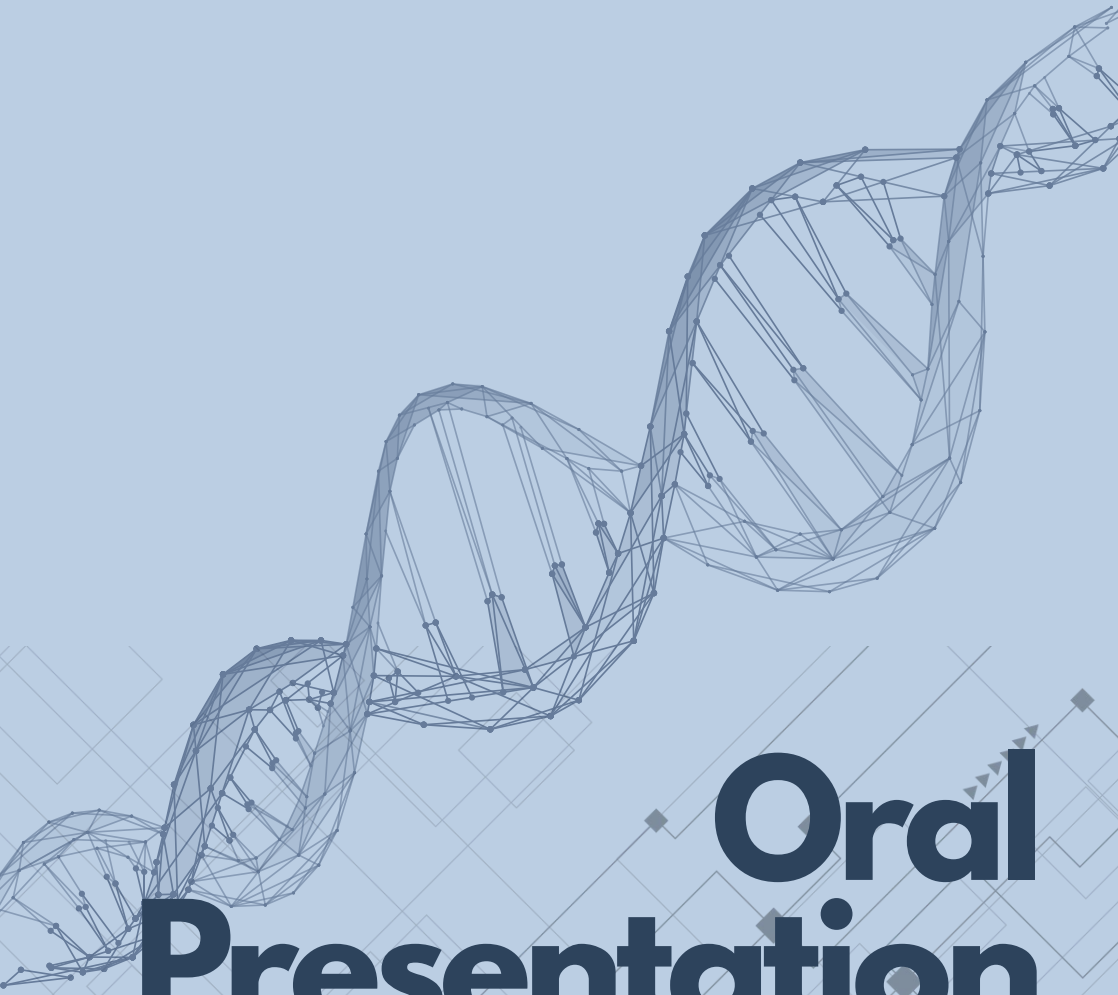
Emergency Department, Hospital Selayang, Lebuhraya Selayang-Kepong, 68100 Batu Caves, Selangor, Malaysia

hazlina.noh@moh.gov.my

Abstract:
Chemical, Biological, Radiological, Nuclear and Explosive (CBRNe) incidents are complex and high-consequence emergencies that can rapidly overwhelm healthcare systems. Beyond the immediate management of casualties, these incidents may result in contamination, healthcare worker exposure, increased demand for specialised care, disruption of essential services, and significant operational challenges. Therefore, healthcare preparedness must extend beyond a reactive response towards a comprehensive and resilient approach. This presentation explores the transition from reactive emergency care to proactive medical CBRNe preparedness, focusing on the development of healthcare systems that are capable of anticipating threats, responding effectively, adapting to evolving circumstances, and maintaining essential services during and after a CBRNe incident. Key elements of preparedness include hazard and risk assessment, emergency planning, early recognition and notification, command and control, appropriate personal protective equipment (PPE), patient triage, decontamination, clinical management, surge capacity, resource management, and continuity of healthcare services. The presentation also highlights the importance of establishing and maintaining capable Medical Emergency Response Teams (MERTs) supported by multidisciplinary and multi-agency coordination. Preparedness cannot be achieved through policies alone. Regular simulation exercises, tabletop exercises, practical drills, competency-based training, and structured after-action reviews are essential to identify operational gaps and continuously strengthen response capabilities. By shifting from a predominantly reactive model towards proactive, coordinated, adaptive, and sustainable preparedness, healthcare systems can better protect patients and healthcare workers, reduce morbidity and mortality, maintain critical healthcare services, and strengthen overall resilience against CBRNe threats.

Keywords: CBRNe preparedness; healthcare resilience; Medical Emergency Response Teams (MERTs); multi-agency coordination

MSPP-ARMy2026



Oral Presentation

DAY 1 · HUMAN HEALTH IN DIVERSE ENVIRONMENTS
Moderator: Dr. Adila A Hamid (UKM)
Wednesday, 2 Sept 2026 · 1530–1645 · MELUR

ID	Time	Title of Presentation
005	1530–1540	**Clinical Outcomes of Non-Contact Pulsed Electromagnetic Field Therapy in Diabetic Foot Ulcers: A Case Series** Dr. Muhammad Azwan Ibrahim (UPNM)
003	1540–1550	**Unmasking Black Dot Syndrome: Preserving Cell Culture Integrity for Reliable Drug Discovery and Therapeutics** Ms.Tuan Nur Ain Nazurah (UPNM)
023	1550–1600	**Circulating miR-21 Levels and Essential Hypertension: A Systematic Review and Meta-Analysis** Ms. Norizam Salamt (UPNM)
042	1600–1610	**Metabolic Syndrome as a Risk Factor of Working Memory Impairment: A Systematic Review and Meta-Analysis of Longitudinal Studies** Ms. Rubythra Dewi Rajo (UPNM)
043	1610–1620	**Systematic Review and Meta-Analysis of Apoptotic Markers in High-Fat Diet-Induced Metabolic Syndrome Animal Models** Dr. Nurul Syakira Zawawi (UPNM)
026	1620–1630	**Hyperbaric Oxygen Therapy in Management of Toxic Optic Neuropathy Secondary to Alcohol Intoxication** Dr. Anita Devi (Universitas Hang Tuah Indonesia)

DAY 1 · AI-DRIVEN HEALTHCARE INNOVATION
Moderator: Dr. Marami Mustapa (UPNM)
Wednesday, 2 Sept 2026 · 1530–1645 · MATAHARI

ID	Time	Title of Presentation
016	1530–1540	**FLARe-UTI: An Augmented Reality Innovation for Learning Urinary Tract Infection** Dr. Nurul Hayati Mohamad Zainal (UPM)
019	1540–1550	**Effectiveness of Instructor-led VR-Assisted Sessions Versus Prosected Cadaveric Models for System-Based Anatomy Practical Sessions Among First-Year Medical Students at UPNM** Dr. Mohamad Ali Abdul Rahiman (UPNM)
038	1550–1600	**Exploring Student Engagement and Perceived Understanding Through an AI-Enhanced Interactive Web Application in Pharmacology Small Group Discussions** Dr. Nur Khadijah Muhamad Jamil (UniSZA)
053	1600–1610	**National Culture and Individual AI Readiness: A Cross-National Study of Medical Students in Indonesia and Malaysia** Dr. Archie Reiniatie (UPNM)
028	1610–1620	**Emulating Randomised Trials from Disease Registries: Propensity Score Methods vs Conventional Regression for Acute Coronary Syndrome Pharmacotherapy** Dr. Siti Zaleha Suki (UiTM)
022	1620–1630	**Network Pharmacology Elucidation of Wound Healing Mechanisms of Standardised Synacinn™ Polyherbal Extract** Dr. Nur 'Ainun Mokhtar (UiTM)

DAY 2 · NATURAL PRODUCTS TO PRECISION THERAPEUTICS
Moderator: Dr. Nur Lisa Zaharan (UPNM)
Wednesday, 3 Sept 2026 · 1030–1230 · MELUR

ID	Time	Title of Presentation
021	1030–1040	Gamma-Oryzanol Attenuates Diabetic Cardiomyopathy by Suppressing Oxidative Stress and Inflammation in a Type 2 Diabetic Rat Model Mr. Mustapha Ismail Radda (USM)
025	1040–1050	Hydroxytyrosol Modulates Anabolic and Catabolic Pathways in Human Osteoarthritis Chondrocytes Dr. Wafa Ali Batarfi (UKM)
032	1050–1100	Effects of Trans-resveratrol on ECM Remodelling in Dexamethasone-treated HTMCs via Renin-Angiotensin System (RAS) Dr. Nurul Syakira Suhaimi (UiTM)
034	1100–1110	Trans-3-Hydroxycinnamic Acid Attenuates Metabolic Dysfunction, Cardiac Inflammation, and Myocardial Fibrotic Remodeling in High-Fat High-Fructose Diet-Induced Metabolic Disease Rats Ms. Amirah Suhaila A Aziz (UniSZA)
035	1110–1120	Trans-3-hydroxycinnamic Acid Attenuates Fibrogenesis via TGF-β/Smad3 Pathway Modulation in Metabolic Dysfunction-associated Steatotic Liver Disease (MASLD) Rats Ms. Balqis Alessa Idris (UniSZA)
036	1120–1130	Anti-Cancer Effects of Curcumin Diarylpentanoid Analogue (1,5-bis(4-hydroxy-3-methoxyphenyl)-1,4-pentadiene-3-one, MS13) on Gastric Cancer Cells with KRAS Mutation Dr. Faizatul Isyraqiah (Monash)

DAY 2 · NATURAL PRODUCTS TO PRECISION THERAPEUTICS
Moderator: Dr. Nur Lisa Zaharan (UPNM)
Wednesday, 3 Sept 2026 · 1030–1230 · MELUR

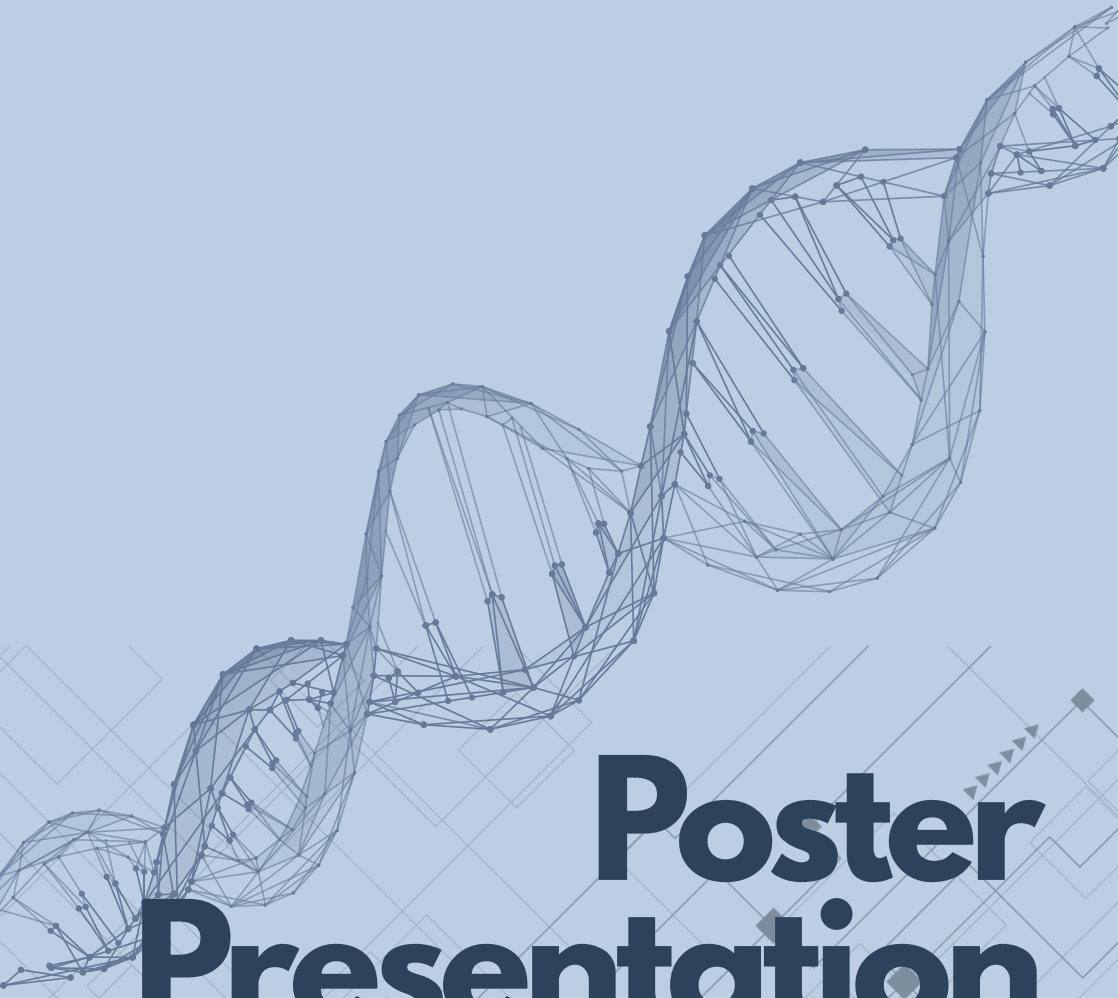
ID	Time	Title of Presentation
091	1130–1140	**Comparative Transcriptomic Analysis of Curcumin and the Diarylpentanoid Analogue MS13 in Chronic Myeloid Leukemia K562 Cells** Dr. Kok Lun Pang (Monash)
052	1140–1150	**Therapeutic Efficacy of Methanolic Extract of Abelmoschus esculentus in Complete Freund's Adjuvant-Induced Rheumatoid Arthritis: Attenuation of Inflammation and Arthritic Biomarkers** Ms. Veshalini Kasiraja (UniSZA)
054	1150–1200	**Rocaglamide Sensitizes Nasopharyngeal Carcinoma to Standard Chemotherapy: A Randomized and Investigator-blinded Preclinical Trial in Middle-aged NSG Mice** Dr. Sivananthan Manoharan (IMR)
092	1200–1210	**Early Harvest Extra Virgin Olive Oil Modulates Metabolic Disturbances, Oxidative Status, and Hepatic Alterations in High-Fat Diet-Induced Metabolic Syndrome** Ms. Nurul Lyana Ridzuan (UniSZA)
095	1210–1220	**Nanoformulated Fisetin Ameliorates Oxidative Stress-Induced Neuroinflammation Through Regulation of Nrf2 and NLRP3 Signalling** Ms. Siti Zaidathul Iman Zolkiffly (UiTM)

DAY 2 · BIOSECURITY FOR HEALTH RESILIENCE
Free Paper Session 2
Moderator: Dr. Asma Assa'edah Mahmud (UPNM)
Wednesday, 3 Sept 2026 · 1030–1230 · MATAHARI

ID	Time	Title of Presentation
004	1030–1040	Adjunctive Non-Contact Pulsed Electromagnetic Field Therapy for a Chronic Diabetic Thigh Wound: A Case Report Dr. Muhammad Azwan Ibrahim (UPNM)
080	1040–1050	Evaluating the Impact of a Short-Course CBRNE Preparedness Workshop on Healthcare Responders in Malaysia: Quasi-experimental pretest–post-test study Dr. Sarah Iziani Ramli (UPNM)
018	1050–1100	Global Patterns of Sugar-Sweetened Beverage Consumption After Tax Implementation Across Income Groups Dr. Mohd Kamarulariffin Kamarudin (IMR)
079	1100–1110	Strengthening Regional Health Security: The ASEAN Drug Security and Self-Reliance (ADSSR) Initiative and Public Health Emergency Preparedness Ms. Pui Lim Chan (MOH)
077	1110–1120	Safeguarding Digital Medicines: Ethical and Regulatory Challenges in Malaysian e-Pharmacy Services Ms. Wan Nur Danyyatun Safiyah Abdul Rafi' (KPJUC)

QR CODE FOR ABSTRACT BOOK

MSPP-ARMy2026



Poster Presentation

Human Health in Diverse Environments	
ID	**Title of Presentation**
001	**Academic Stress and Its Associated Factors Among Preclinical Students of a Malaysian Military-Based Medical Programme** Dr. Khairul Anwar Zarkasi (UPNM)
010	**Breaking Point to Breakthrough: Restoring Protected Casualty Evacuation Under Fire Through Rapid Armoured Ambulance Innovation** Maj. (Dr) Ahmad Mustaqim (MALBATT / UNIFIL)
011	**Forging Health Operational and Logistical Resilience in a Mandate-Strained Conflict Zone – A Strategic Evaluation of Malaysia's Final Peacekeeping Battalion in Lebanon** Maj. (Dr) Ahmad Mustaqim (MALBATT / UNIFIL)
015	**Differential Effects of Microwave and Millimetre-Wave Frequencies in 5G Communication Technology on the Testosterone-to-Estradiol Ratio and Mounting Behaviour in Male Rats** Dr. Farah Hanan Fathihah Jaffar (UKM)
017	**Subacute 2,3-Benzofuran Exposure Induces Hypospermatogenesis and Testicular Damage in Male Rats** Assoc. Prof.Dr. Siti Fatimah Ibrahim (UKM)
020	**The Prevalence and Factors Associated with Depression, Anxiety, and Stress Among Patients Attending a Private Primary Care Centre in Kuantan** Dr. Nur Zuliani Ramli (UiTM)
031	**ATAD1 Deficiency Promotes Hepatic Steatosis via SIRT1-Mediated Suppression of the mTORC1-PLIN3 Lipophagy Axis** Dr. Chien Huang (NTU Taiwan)
037	**Prevalence and Comparison of Anxiety and Depression by Cumulative Sea Service Duration Among Indonesian Seafarers: A Study Protocol** Dr. Rahayu Eviriyanti (Univ. Hang Tuah, Indonesia)
044	**Paediatric Fulminant Myocarditis Masquerading as Acute Gastroenteritis: A Case Report** Dr. Mohd Faizul Amer (UPNM)

Human Health in Diverse Environments	
ID	**Title of Presentation**
045	Transforming Stress into Resilience: Psychological Effects of COVID-19 on Defence University Students and Their Coping Mechanisms Dr. Maizatullifah Miskan (UPNM)
048	Bridging Life's Mechanics and Health Security: A Sixty-Year Bibliometric Trajectory of Environmental Health Research in Military Medicine Dr. Afiqah Syamimi Masrani (UPNM)
049	Toxic Epidermal Necrolysis Mimicking Kawasaki Disease in a 6-Year-Old Girl: A Diagnostic Challenge in a Febrile Mucocutaneous Syndrome Dr. Pei Pei Lim (UPNM)
060	TAK1 Inhibition Attenuates TGF-β1-Induced Activation of the NF-κB Signalling Pathway in Human Bronchial Epithelial Cells Ms. Raja Zarith Fatiah Raja Malek Ridhuan (UPNM)
062	Resolving Pre-Analytical Interference in Cold Autoimmune Haemolytic Anaemia Through Patient Pre-Warming: A Case Report Dr. Siti Nadirah Ab Rahim (UPNM)
063	Mind the Gap: Perceived Barriers to E-Waste Recycling among Adults in Putrajaya Dr. Nur Adnin Ahmad Zaidi (UPNM)
064	Association between Chrononutrition and Glycaemic Status in Women with Gestational Diabetes Mellitus: A Preliminary Case-Control Study Dr. Zubaidah Hasain (UPNM)
066	Estimation of Low-Density Lipoprotein Cholesterol (LDL-C) and LDL-C Treatment-Target Classification: A Comparison of Friedewald and Sampson Equations AP Dr. Nani Nordin (UPNM)
070	Partial Visual Recovery Following Hyperbaric Oxygen Therapy in Delayed-Presentation Central Retinal Artery Occlusion in Military Personnel: A Case Report Dr. Aina Malindri Dasrilsyah (UPNM)
072	Factors Associated with Knowledge, Attitudes, and Contraceptive Practice Among Malaysian Married Men in Urban Primary Care: A Cross-Sectional Study Dr. Aida Jaffar (UPNM)

Human Health in Diverse Environments	
ID	**Title of Presentation**
074	Asymptomatic Hypoglycaemia Despite Elevated HbA1c in an Older Adult: A Case Report Dr. Maizatullifah Miskan (UPNM)
075	Enhancing the Reliability of HbA1c Measurement in Patients with Chronic Kidney Disease: A Clinical Evaluation of an Enzymatic Assay Dr. Wan Farhana Azwanee Wan Omar (UPNM)
081	Bridging the Conceptual–Implementation Gap in Disaster Health Needs Assessment: An Institutional Case Study of Fire and Rescue Command Leadership in Malaysia Dr. Aida Jaffar (UPNM)
083	The Effect of Sciatic Nerve Transection on Calretinin-Expressing Inhibitory Islet Interneurons in the Mouse Spinal Dorsal Horn Dr. Marami Mustapa (UPNM)
085	Modelling Shift-Dependent Meal-Timing Consistency and Meal-Latency Among Healthcare Shift Workers Dr. Siti Hanisah Mohd Fuad (USIM)
086	Apparently Healthy, Yet High Risk: Hidden Cardiometabolic Burden and Early Outcomes in Young-Onset ST-Elevation Myocardial Infarction Dr. Irma Liyana Mushaddik (MOH)
099	Severe Paediatric Leptospirosis with Common Neurological Manifestations: A Case Series from Northern Malaysia Ms. Alia Shateerah Abdul Rahim (IMR)
100	Blood Gas Profiles Across Escalating Respiratory Support in Malaysian Patients with Severe Leptospirosis Ms Ilham Sufiana Md Zain (IMR)
101	Case Series of Severe Leptospirosis with Multiorgan Involvement in Two Orang Asli Patients Ms. Wan Alif Syazwani Wan Alias (IMR)

AI-driven Healthcare Innovation	
ID	**Title of Presentation**
007	Navigating Digital Healthcare Innovation in Hospital Systems: A Systematic Review of System-Level Challenges and Strategic Responses Dr. Lotfi Anuar (UTM)
008	Advancing Digital Healthcare Innovation: A Systematic Review of Predictive Analytics and Ethical Governance in Patient Outcomes Dr. Lotfi Anuar (UTM)
014	From COVID-19 Challenges to Digital Innovation: Digitalization of HAI Bundle Care Using the HCAI Shield Application Ms Rehab Ismaeil (IIUM)
058	Beyond the Classroom: A Systematic Thematic Analysis of Medical Students' Reflections in an Anti-Drug Abuse Community Outreach Program Dr. Nur Lisa Zaharan (UPNM)
065	The Role of GSK-3 in HeLa Cervical Cancer Cells: A Scoping Review of In Vitro Studies Dr. Nur Aishah Che Roos (UPNM)
069	The KEPT App: A Theory-Driven mHealth Intervention for Antenatal Pelvic Floor Muscle Training Dr. Aida Jaffar (UPNM)
088	Machine Learning for Pharmaceutical Demand Forecasting: A Narrative Review of Forecasting Evolution and Data-Driven Model Selection Mr Fairul Ezwan Fahrurazi (USM)
089	Digital Access as a Behavioural Insights Component in MyMediSAFE Implementation for Safe Medicine Disposal in Malaysia Mr Mohd Shahiri Abd Ghapar (MOH)

Natural Products to Precision Therapeutics	
ID	**Title of Presentation**
009	Standardised Tinospora crispa Extract Reduces Atherosclerotic Plaque and Demonstrates Favourable Safety Profile in Preclinical Studies Assoc. Prof. Dr. Hasnah Bahari (UPM)
013	Anti-Angiogenic Effect of Persicaria minor Aqueous Extract in TNF-α-Induced HUVECs: An Integrated Network Pharmacology, Molecular Docking and In Vitro Study Dr. Adila A. Hamid (UKM)
029	Bee Bread Attenuates Hepatic Steatosis and Insulin Resistance in MASLD Through Activation of AMPK Signaling Dr. Zaida Zakaria (USM)
030	Effects of Ifenprodil on Mobility Performance, Spinal Nociceptive Signalling, and Memory Function in Complete Freund's Adjuvant-Induced Chronic Polyarthritis Rats Dr. Ain' Sabreena Mohd Noh (USM)
039	Bee Bread Ameliorates Cardiometabolic Parameters Through Modulation of Myocardial Fatty Acid Synthase Expression in Obese Rats Dr. Zaidatul Akmal Othman (UniSZA)
040	Palm Tocotrienol-Rich Fraction Supplementation Counteract the Lipotoxicity Effect of High-Fat Diet on Oocyte Quality Assoc. Prof. Dr. Nuraliza Abdul Satar (UiTM)
041	Effects of Early-Harvest Extra Virgin Olive Oil Supplementation on Serum Leptin and Adiponectin in High-Fat Diet-Induced Obese Rats Ms Nur Afiqah Mardhiah Zulkarnain (UniSZA)
046	Antihypertensive and Vasculoprotective Effects of Etlingera elatior (Kantan) Flower Aqueous Extract in a Hypertension Rat Model Assoc. Prof.Dr. Wan Amir Nizam Wan Ahmad (USM)
047	Hepatoprotective Effects of Etlingera elatior Flower (Bunga Kantan) Extract in a High-Fat, High-Cholesterol Diet-Induced NAFLD Rat Model Dr. Liza Noordin (USM)
051	From Andrographolide to Precision Oncology Therapeutics: A Web of Science-indexed Bibliometric Mapping and Network Analysis Dr. Aisyah Jaafar (UiTM)

Natural Products to Precision Therapeutics	
ID	**Title of Presentation**
055	**Marantodes pumilum Selenium Nanoparticle-Fortified Nanocellulose Hydrogel Exhibits Biocompatibility, Selective Antibacterial Activity, and Controlled Particle Release for Diabetic Wound Care Applications** Dr. Siti Hajar Adam (UPNM)
056	**Response Surface Optimization of Marantodes pumilum-mediated Selenium Nanoparticles Biosynthesis for Sustainable Biomedical Applications** Mr Anas Ahzaruddin Ahamad Tarmizi (UPNM)
068	**Anti-Inflammatory and Metabolic Modulatory Effects of Andrographis paniculata Extract in an HFD/DMH-Induced Colorectal Cancer Sprague-Dawley Rats** Ms Khairul Kamilah Abdul Kadir (FRIM / UPM)
071	**Computational Analysis of the Anti-Apoptotic Mechanisms of 2,6-Dimethoxy-1,4-Benzoquinone** Ms Shazwina Shazrul Kahar (UiTM)
078	**Navigating Pharmacokinetic Collision: Extended Intravenous Artesunate Monotherapy for Submicroscopic Plasmodium knowlesi in a Patient on Rifampicin-Based Tuberculosis Therapy** Ms Zarena Zainul Abidin (MOH)
082	**Comparative Evaluation of Pro-Apoptotic and Anti-Proliferative Mechanisms of Nisin ZP and Doxorubicin in Osteosarcoma** Dr. Muhammad Fairuz Azmi (UiTM)
090	**Elucidating the Extrinsic and Intrinsic Apoptotic Pathways Induced by 2,6-Dimethoxy-1,4-Benzoquinone (DMBQ) in Colorectal Cancer Cells: An In Vitro Study** Ms Alia Sofia Aqwa Azmi (UiTM)

Natural Products to Precision Therapeutics

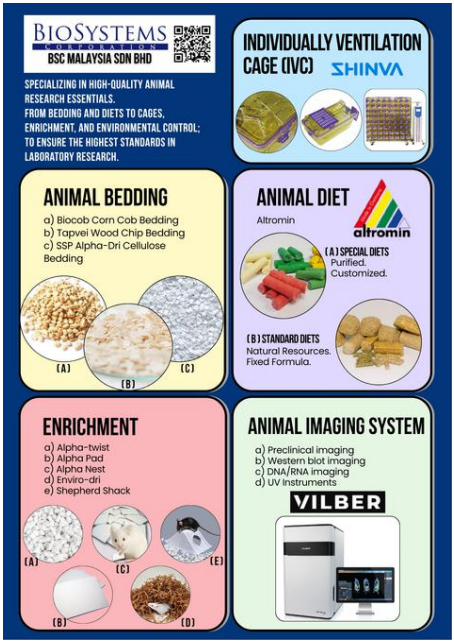
ID	Title of Presentation
093	**Genetic Susceptibility to Bortezomib-Induced Peripheral Neuropathy in Asian Patients with Multiple Myeloma** Dr. Sujatha Suthandiram (IMR)
096	**Astaxanthin as a Precision Therapeutic for Neurological Diseases: A Systematic Review of Antioxidant and Neuroprotective Mechanisms** Dr. Siti Norsyafika Kamarudin (UiTM)
097	**Methodological Characteristics of Long-Term High-Fat Diet-Induced Obesity Models in Rats: A Systematic Review** Dr. Norasikin Ab Azis (UiTM)
102	**Neuroprotective Effects of Philanthotoxin-102 Against NMDA-Induced Retinal Excitotoxicity: Behavioural, Histological and In Silico Evidence** Assoc. Prof.Ts Dr. Izuddin Fahmy Abu (UniKL)

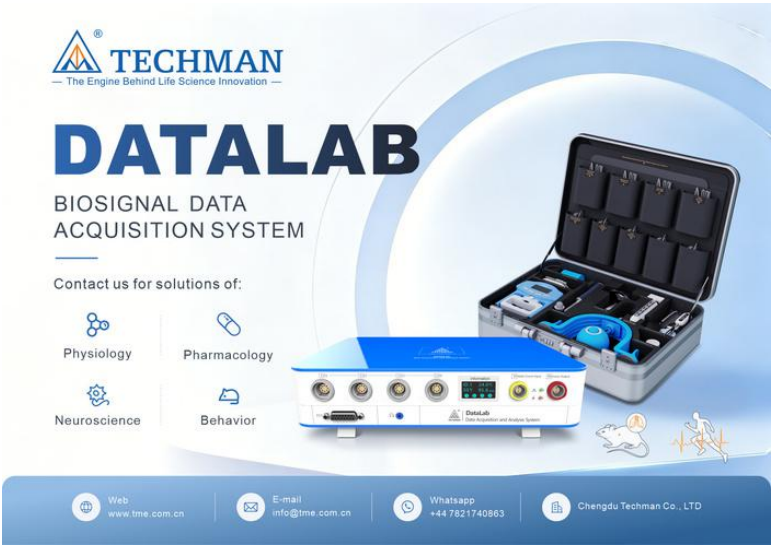
Biosecurity for Health Resilience	
ID	**Title of Presentation**
024	Acanthamoeba spp. as an Environmental Reservoir for Opportunistic Pathogens in Hospital Infrastructure: A Scoping Review Dr. Mohammad Wisman Abdul Hamid (UPNM)
057	Chemiluminescent Multiplex Serological Profiling of Insecticide-Treated Uniforms and Spatial Repellents Against Mosquito Bites and Malaria Exposure Among Malaysian Army Personnel Ts. Dr. Nik Noorul Shakira Mohamed Shakrin (UPNM)
059	Impact of an Interactive Anti-Substance Abuse Program on the Knowledge, Attitude and Perception Regarding Illicit Drugs Among Military School Students Dr. Azli Shahril Othman (UPNM)
061	Advancing Healthcare Resilience and Health Security: A Clinical Pathway Framework for Menstrual Insecurity Dr. Siti Athirah Zafirah Abdul Rashid (UPNM)
067	Effectiveness, Acceptability, and Safety of Insecticide-Treated Army Uniforms Among Malaysian Armed Forces: A Field Evaluation Wan Farizatul Shima Wan Ahmad Fakuradzi (UPNM)
076	Evaluating Healthcare Agency Preparedness and Medical Emergency Response in a National Field Training Exercise in Melaka, Malaysia: The EXCOMSEC 2024 Experience Dr. Hidayatul Fariha Sulaiman (UPNM)
089	Positioning as the First Mechanical Step of Emergency Front-of-Neck Access in the Field Hospital: A Translational Appraisal of the IComPBag Inflatable Positioning Device Dr. Azura Sharena Yahaya (UPNM)

QR CODE FOR ABSTRACT BOOK

SPONSORS


MGI
PRECISION SEQUENCING
FOR DEFENSE READINESS
Defending the Future with Precision Genomics
MGI delivers advanced sequencing solutions to strengthen military healthcare, biodefense, and mission readiness — ensuring accuracy, speed, and actionable intelligence for the armed forces.
OUR COMMITMENT
We stand with the armed forces to deliver trusted sequencing solutions that safeguard health, advance research, and ensure readiness in every mission.
APPLICATIONS
Battlefield Human Identification
Biothreat Detection & Source Attribution
Trace DNA & Microbiome Analysis
Personalized Medicine & Troop Healthcare
Military Genomics Research Collaborations
everlife
NeoScience
info@neoscience.com.my
+603 7610 0388
www.neoscience.com.my
C110, Level 1, Block C,Kelana Square, Jalan SS7/26,Kelana Jaya, 47301 Petaling Jaya, Selangor, Malaysia.


BIOSYSTEMS
CORPORATION
BSC MALAYSIA SDN BHD
SPECIALIZING IN HIGH-QUALITY ANIMAL RESEARCH ESSENTIALS.
FROM BEDDING AND DIETS TO CAGES, ENRICHMENT, AND ENVIRONMENTAL CONTROL; TO ENSURE THE HIGHEST STANDARDS IN LABORATORY RESEARCH.
INDIVIDUALLY VENTILATION CAGE (IVC)
SHINVA
ANIMAL BEDDING
a) Biocob Corn Cob Bedding
b) Tapvei Wood Chip Bedding
c) SSP Alpha-Dri Cellulose Bedding
(A)
(B)
(C)
ANIMAL DIET
Altromin
altromin
(A) SPECIAL DIETS
Purified.
Customized.
(B) STANDARD DIETS
Natural Resources.
Fixed Formula.
ENRICHMENT
a) Alpha-twist
b) Alpha Pad
c) Alpha Nest
d) Enviro-dri
e) Shepherd Shack
(A)
(C)
(E)
(B)
(D)
ANIMAL IMAGING SYSTEM
a) Preclinical imaging
b) Western blot imaging
c) DNA/RNA imaging
d) UV Instruments
VILBER


TECHMAN
— The Engine Behind Life Science Innovation —
DATALAB
BIOSIGNAL DATA ACQUISITION SYSTEM
Contact us for solutions of:
Physiology
Pharmacology
Neuroscience
Behavior
Web
www.tme.com.cn
E-mail
info@tme.com.cn
Whatsapp
+44 7821740863
Chengdu Techman Co., LTD

BRITISH PHARMACOLOGICAL SOCIETY

Become a BPS member

www.bps.ac.uk/membership

SCAN ME

Undergraduates join FREE! | Early Career membership just £30 per year!*

*Please check website for eligibility criteria.

- Discounted rates for events, webinars and training workshops
- Career development opportunities and resources
- Access to world-leading, community-led journals, plus discounted publishing rates
- Access to funding via study awards, prizes, grants and bursaries
- Networking opportunities online and in person
- Support from Society staff, fellow members around the world, online resources and more

Upcoming events

www.bps.ac.uk/events

BRITISH PHARMACOLOGICAL SOCIETY

Exclusive booking discounts available to BPS members, plus offers for students and early career professionals.

20th World Congress of Basic & Clinical Pharmacology (WCP2026)
12 - 17 July 2026
(BPS sessions & networking event at ASPET & IUPHAR conference)

Covalent Modulation in Drug Discovery
7 - 8 October 2026
(BPS, AstraZeneca & GSK)
Cambridge, UK

President's Lecture
21 October 2026
University of Strathclyde

From Bench to Beyond: Exploring Career Pathways in Pharmacology
21 October 2026
University of Strathclyde

Pharmacology 2026
8 - 10 December 2026
(BPS Annual Meeting)
Manchester, UK

More events to be announced!

Visit our website, join our mailing list and follow us on social media to hear the latest about upcoming events.

11th

31st July - 3rd August

KUALA LUMPUR

FAOPS2027

THE MARVELS OF LIFE AND BEYOND

CALL FOR ABSTRACTS

THE 11TH FEDERATION OF THE ASIAN & OCEANIAN PHYSIOLOGICAL SOCIETIES CONGRESS

in conjunction with the 40th Annual Scientific Meeting of the Malaysian Society of Pharmacology and Physiology

KEY DATES

ABSTRACT SUBMISSION OPENS

1 JULY – 31 DECEMBER 2026

YOUNG SCIENTIST TRAVEL GRANT APPLICATION

1 JULY – 31 DECEMBER 2026

SUBMIT YOUR ABSTRACT TODAY!

HOSTED BY

www.faops2027.com

abstract@faops2027.com

MALAYSIAN SOCIETY OF PHARMACOLOGY AND PHYSIOLOGY (MSPP)

UPNM
National Defence University of Malaysia
Kewajipan • Maruah • Integriti

Supported by:

BRITISH PHARMACOLOGICAL SOCIETY

MSPP-ARMy 2026 Organizing Comittee
Faculty of Medicine & Defence Health, UPNM
www.mspparmy2026.my