MSPP NEWSLETTER

MALAYSIAN SOCIETY OF PHARMACOLOGY AND PHYSIOLOGY (MSPP)

Malaysian Society of Pharmacology and Physiology *November 2025*

MSPP Editorial Message

Dear Esteemed Members of the MSPP,

Warm greetings to all. As we draw closer to the end of 2025, it is truly inspiring to reflect on our collective journey and achievements as a scientific community committed to advancing the frontiers of pharmacology and physiology. This issue of the MSPP Newsletter captures the essence of that shared dedication — to learn, connect, and grow together.

Over the past months, MSPP has continued to champion academic and professional excellence through a series of impactful initiatives. The MSPP Scientific Meeting once again served as a vibrant platform for the exchange of ideas and discovery, complemented by the Travel Grant Award that supported our outstanding members in sharing their work. The Young Investigator Award and Young Teachers Award–Sharing Sessions celebrated the next generation of scholars and educators who embody the future of our disciplines. The MSPP Refresher Course 2025 and our Webinar Series further strengthened pedagogical innovation and collaboration across institutions, while our Bulletin contributions and membership growth continue to reflect the society's expanding reach and engagement.

Looking ahead, MSPP is proud to prepare for our participation in the Federation of the Asian and Oceanian Physiological Societies (FAOPS) meeting — a milestone that reaffirms Malaysia's active presence on the international stage. We eagerly anticipate new opportunities for collaboration, research, and capacity building that will continue to enrich our scientific landscape.

On behalf of the editorial team, I extend my heartfelt appreciation to the MSPP Exco Members, organising committees, collaborating institutions, contributors, and every member and sponsor who has supported our initiatives throughout the year. Your dedication, energy, and passion have been the driving force behind our success.

May this newsletter serve not only as a record of achievements but also as a source of inspiration to continue strengthening our scientific community together, with purpose and unity.

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Contribute to MSPP Newsletter by sending your articles/write-up to: mspp.secretariat@gmail.com

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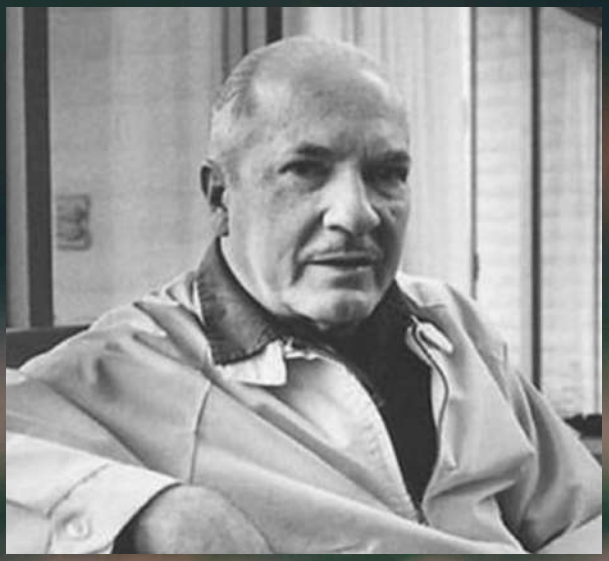

Everything is theoretically impossible, until it is done

~Robert A. Heinlein~

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38TH MSPP ANNUAL SCIENTIFIC MEETING 2025

The 38th Scientific Meeting of the Malaysian Society of Pharmacology and Physiology (MSPP 2025), themed "Shaping Research for Society: Strategic Blueprints for a Healthier Planet," was held from 20–21 August 2025. The main conference was preceded by four pre-conference workshops on 19 August and followed by one post-conference workshop on 22 August 2025.

The event was chaired by Prof. Dr. Renu Agarwal and co-chaired by Dr. Brinnell Caszo, with enthusiastic participation from private and public universities, research institutes across Malaysia, and international delegates from Russia, Scotland, Ireland, China, and India.

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MORE ON 38TH MSPP ANNUAL SCIENTIFIC MEETING 2025

The scientific programme was developed under the leadership of Prof. Dr. Igor Iezhitsa, with pivotal coordination support from Dr. Mona Mohamed Ibrahim Abdalla. The success of the conference was made possible through the unwavering commitment of the organising team: Assoc. Prof. Dr. Anna Krasilnikova, Assoc. Prof. Dr. Heethal Jaiprakash, Assoc. Prof. Dr. Teguh Haryo Sasongko, Dr. Mohammed Irfan Abdul Malick Sahib, Dr. Norah Htet Htet, Dr. Kalerammana Gopalakrishna Prarthana, and Dr. Fatima S. A. Saghir.

The conference programme offered a vibrant blend of expertise, discovery, and collaboration. Two impactful keynote lectures set the tone for the meeting. Prof. Asma Ismail (IMU), in her lecture "Shaping Research for Society: Strategic Blueprints for a Healthier Planet," underscored the need for transdisciplinary partnerships and equitable access to research and innovation.

Prof. Abu Bakar Abdul Majeed (UiTM) presented "From Neural Pathways to Patient Care – De-Ageing: Fact or Fiction?", sharing key findings from the national MOHE "AGELESS" programme on gut microbiota, ageing, and cognition.'

The conference also featured three plenary lectures across major focus areas in pharmacology and physiology. Prof. Shaun Lee (Monash University Malaysia) discussed real-world data and pharmacoeconomic strategies to improve healthcare equity. Prof. Igor Iezhitsa (IMU) gave an insightful overview of the Alzheimer's therapeutic landscape in "Mapping the Journey: From Molecular Targets to Alzheimer's Therapeutic Pipeline." Prof. Harbinder Jeet Singh (UiTM) delivered a comprehensive session on metabolic disorders exploring the interplay between obesity, cardiovascular disease, diabetes and leptin.

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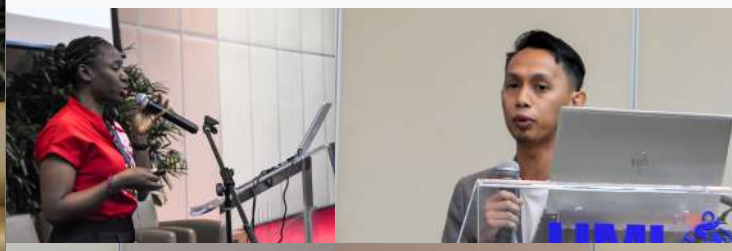
MORE ON 38TH MSPP ANNUAL SCIENTIFIC MEETING 2025

The four thematic symposia reflected the breadth of pharmacological research. Symposium 1 on Neuroplasticity, Neuromodulation and Neuroprotection featured talks by Prof. Anna Peresypkina (Belgorod State University) on 3-hydroxypyridine derivatives for retinal protection, Assoc. Prof. Kheng Seang Lim (UM) on pharmacogenomics and personalised epilepsy therapy, and Prof. Muzaimi Mustapha (USM) on the brain reward circuit in neurodegeneration. Symposium 2, Integrating Traditional Medicine into Modern Healthcare, included Prof. Ibrahim Jantan (UKM) on β-unsaturated carbonyl compounds and immunopharmacology, Assoc Prof Dr. Nurul Alimah Abdul Nasir (UiTM) on tocotrienols in ocular diseases, and Prof. Christophe Wiart (UMS) on medicinal plants of Sabah and their ethnopharmacological value.

Symposium 3, Antimicrobial Breakthroughs and the Microbiome, highlighted Dr. Ai Huey Tan (UM) on the gut–brain connection in Parkinson's disease, Dr. Hui-Min Neoh (UKM) on antimicrobial resistance in nosocomial infections, and Prof. Yeong Yeh Lee (USM) on gut microbiota in precision gastroenterology. Symposium 4, Drug Repurposing – Emerging Approaches to Identify Potential Therapeutics, featured Prof. Renu Agarwal (IMU) on repurposing statins for neurodegenerative diseases and Dr. Annie Chai (Cancer Research Malaysia) on pharmacogenomics-based drug repurposing in head and neck cancers.

The Free Oral Communication sessions presented high-impact findings in natural products, neuropharmacology, ocular drug discovery, gut microbiota, and cognitive health. Highlights included studies on statin-mediated neuroprotection, modulation of the retinal renin–angiotensin system, and novel agents such as RU-615 for steroid-induced ocular hypertension. Enthusiastic participation from students and researchers was rewarded by Young Investigator Award (YIA) as well as best oral and poster presentations.



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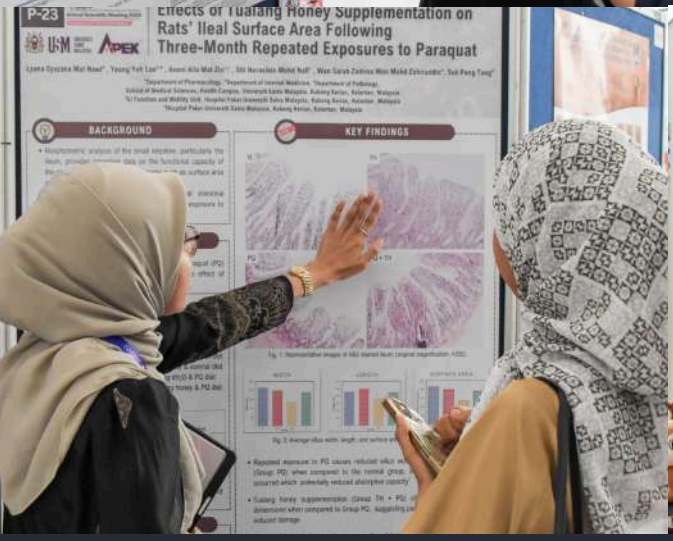
MORE ON 38TH MSPP ANNUAL SCIENTIFIC MEETING 2025

The 38th MSPP Scientific Meeting demonstrated the IMU University and MSPP's commitment to nurturing a strong research ecosystem. It successfully gathered leading experts, early-career researchers, and students to exchange ideas, build collaborations, and inspire innovation.

In closing, MSPP 2025 was more than a scientific meeting. It was a catalyst for future research partnerships, a platform for young scientists, and a collective step toward a healthier, more sustainable world. We look forward to the next MSPP meeting as we continue advancing science, strengthening collaboration, and shaping research for society.

By: Prof. Dr. Renu Agarwal, Dr. Brinell Caszo
Prof. Dr. Igor Iezhitsa, Dr. Mona Mohamed Ibrahim Abdalla



38TH MSPP ANNUAL SCIENTIFIC MEETING 2025 PHOTO GALLERY

MSPP 2025 TRAVEL GRANT AWARD: *Supporting Excellence in Research Presentation*

The MSPP continues its commitment to nurturing scientific excellence and professional development through the MSPP 2025 Travel Grant Award. This award provides financial support of RM 1000 to selected members who have been accepted as oral presenters at the 38th MSPP Annual Scientific Meeting. The initiative aims to encourage high-quality scientific communication, foster collaboration among researchers, and promote greater participation within Malaysia's vibrant pharmacology and physiology community.

In conjunction with the 38th MSPP Annual Scientific Meeting, two deserving recipients were selected for their outstanding abstracts and personal statements.

The award in the Student Category was presented to Miss Nor Adila Zulkifli from Universiti Teknologi MARA, while the Early-Career Lecturer Category was awarded to Dr. Shahidee Zainal Abidin from Universiti Malaysia Terengganu. Both recipients exemplify the spirit of scientific curiosity, dedication, and academic excellence that the Society strives to cultivate among its members.

The MSPP Travel Grant Award not only provides financial assistance but also serves as a platform for young scientists and early-career academics to engage with peers, exchange knowledge, and establish valuable professional networks. By recognising the efforts of members who actively contribute to the advancement of pharmacological and physiological sciences, MSPP reinforces its mission to strengthen the nation's research capacity and visibility in these fields.

MSPP extends its heartfelt congratulations to Miss Nor Adila Zulkifli and Dr. Shahidee Zainal Abidin for their achievements. Their success reflects the Society's ongoing effort to empower the next generation of Malaysian researchers and inspire excellence in scientific discovery.

Assoc. Prof. Dr. Azizah Ugusman
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MSPP YOUNG INVESTIGATOR AWARD 2025

MSPP Young Investigator Award (YIA) 2025. The Malaysian Society of Pharmacology and Physiology (MSPP) proudly announces Dr. Farah Hanan Fathihah Jaffar from the Department of Physiology, Faculty of Medicine, Universiti Kebangsaan Malaysia, as the Winner of the MSPP Young Investigator Award (YIA) 2025.

The award was presented during the 38th MSPP Scientific Meeting 2025, held from 20–21 August 2025 at IMU University, Kuala Lumpur, Malaysia. The MSPP Young Investigator Award is an annual recognition established by the Society to honour outstanding young researchers who demonstrate excellence, originality, and promise in the disciplines of pharmacology and physiology.

It aims to encourage early-career scientists to pursue high-impact research that contributes meaningfully to scientific knowledge and human health.

Dr. Farah Hanan's winning presentation, titled "Wireless Technology: The Invisible Threat? Assessing the Reproductive Toxicity of 5G Wireless Technologies in a Rodent Model," addressed growing public concerns about the biological effects of modern communication technologies. Her study provided experimental evidence on the reproductive outcomes associated with 5G exposure, reflecting her dedication to advancing research that bridges science, technology, and health.

MSPP warmly congratulates Dr. Farah Hanan Fathihah Jaffar on this remarkable achievement and commends her commitment to excellence in research.

By : Assoc. Prof. Ts. Dr. Azlini Binti Ismail
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MSPP REFRESHER COURSE 2025

The MSPP Refresher Course 2025 was successfully held on 9 July 2025 at the DoME Seminar Room, Faculty of Medicine, Universiti Teknologi MARA (UiTM), Sungai Buloh Campus. Jointly organised by the Malaysian Society of Pharmacology and Physiology (MSPP) and the Department of Pharmacology, Faculty of Medicine, UiTM, the event served as an enriching platform for educators to share best practices, exchange ideas, and strengthen collaborations in medical education.

Guided by its core objectives:

1. To foster a dynamic platform for the exchange of profound insights and expertise in pharmacology and physiology teaching, and
2. To promote excellence in teaching among young MSPP members,
3. The course reflected MSPP's enduring commitment to nurturing future educators and advancing the standards of medical education in Malaysia.

A total of 37 participants attended the one-day programme, comprising academicians and researchers from both local and international institutions. The course featured two eminent speakers: Prof. Dr. Cheng Hwee Ming, Professor of Physiology, Faculty of Medicine, Universiti Malaya, and Prof. Dr. Nafeeza Mohd Ismail, Professor of Pharmacology, Faculty of Medicine, UiTM. Both delivered inspiring sessions that explored innovative teaching methods and effective learning approaches, perfectly aligned with the evolving landscape of higher education.

MORE ON MSPP REFRESHER COURSE 2025

The workshop had a significant impact on the academic community. It enhanced the quality of pharmacology and physiology teaching in alignment with national and institutional goals for educational excellence. It also created valuable networking opportunities among universities, fostering knowledge exchange and paving the way for future collaborative research initiatives. Notably, the event elevated the visibility of the Department of Pharmacology, Faculty of Medicine, UiTM, as it successfully drew participants from both within Malaysia and abroad.

The MSPP Refresher Course 2025 stands as a testament to MSPP's dedication to cultivating a culture of excellence, collaboration, and continuous learning — uniting educators and researchers in the shared pursuit of advancing biomedical science and education.

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MSPP WEBINAR SERIES 2025

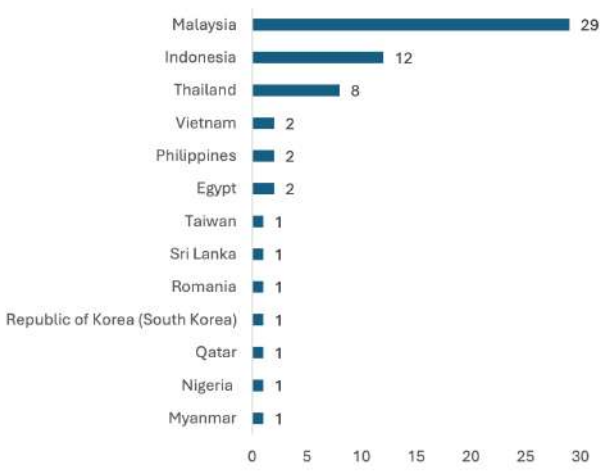
The distinguished speaker was Prof. Dr. Patricia A. Halpin from the University of New Hampshire, USA. She was the recipient of 2025 prestigious Claude Bernard Distinguished Lectureship of the Teaching of Physiology Section Award, thus, she brought her wealth of experience and passion for innovative teaching to the virtual stage. In her engaging presentation, Prof. Halpin demonstrated how physiology education can be transformed into a dynamic, interactive, and cinematic experience.

She introduced creative strategies such as storytelling, multimedia integration, active learning techniques, and real-life case scenarios to make complex physiological concepts more accessible and memorable.

The event drew participants from around the world, including representatives from Malaysia, Spain, the United States, Thailand, Indonesia, and several other countries.

On Thursday, 7 August 2025, the Malaysian Society of Pharmacology and Physiology (MSPP) successfully organised an international webinar titled "Beyond the Books, Interactive Learning in Physiology Education: Learn Physiology Like a Blockbuster Experience!". The session was conducted via Zoom and Microsoft Teams, drawing close to 100 participants from diverse backgrounds, including educators, students, and healthcare professionals.

Global Participants



MORE ON WEBINAR SERIES

The webinar not only enriched participants' understanding of effective physiology teaching methods but also reinforced MSPP's commitment to promoting excellence in pharmacology and physiology education.

MSPP extends its sincere appreciation to Prof. Dr. Patricia A. Halpin for her invaluable contribution and to all participants for making this event a resounding success. The Society looks forward to hosting more such impactful sessions in the future.

By: Assoc. Prof. Dr. Norsham Juliana binti Nordin, njuliana@usim.edu.my

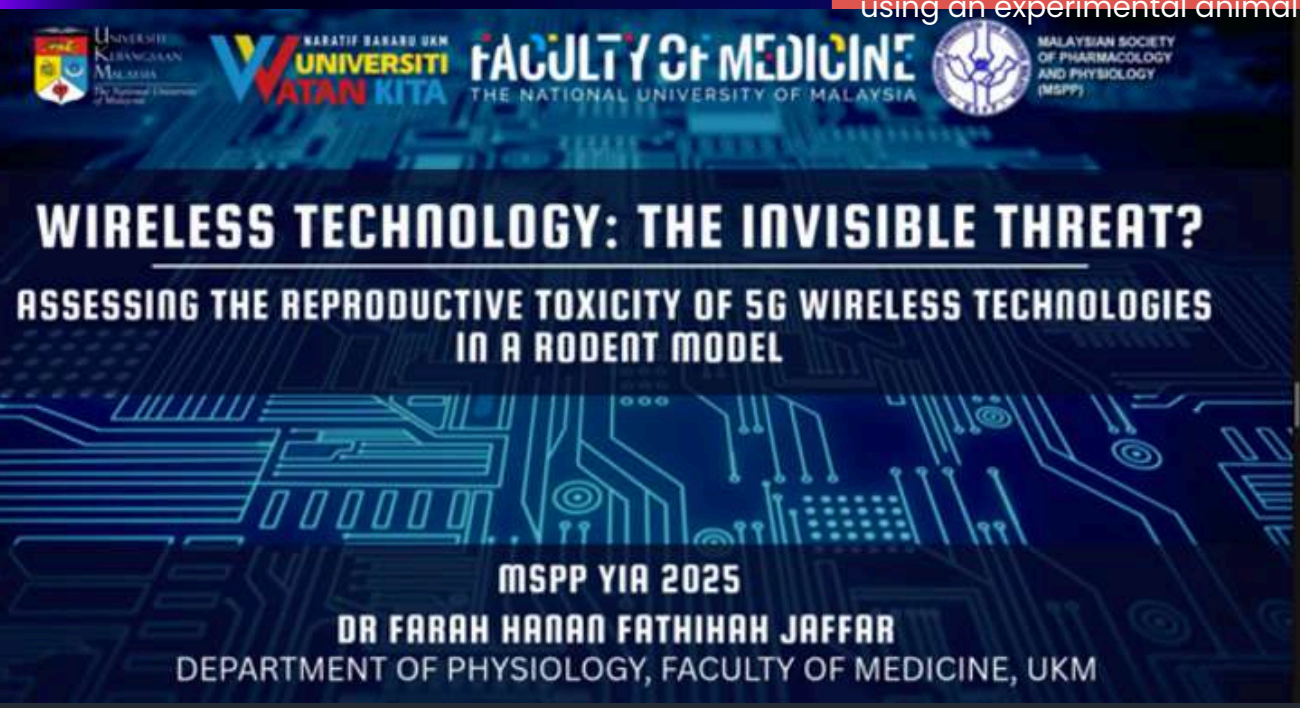
MSPP SHARING SESSION 2025

Sharing Session with the MSPP Young Investigator Award 2025 Winner

The MSPP Webinar Series is an initiative by the Malaysian Society of Pharmacology and Physiology (MSPP) to promote scientific exchange and continuous learning among its members. Through this platform, MSPP invites distinguished researchers and award recipients to share their expertise, experiences, and recent research findings with the wider pharmacology and physiology community.

In conjunction with her recent recognition, MSPP hosted a webinar sharing session featuring Dr. Farah Hanan Fathihah Jaffar, Winner of the MSPP Young Investigator Award (YIA) 2025.

The session, titled "Wireless Technology: The Invisible Threat? Assessing the Reproductive Toxicity of 5G Wireless Technologies in a Rodent Model," highlighted Dr. Farah Hanan's award-winning research, which explores the potential reproductive effects of 5G exposure using an experimental animal model.



MORE ON MSPP WEBINAR SERIES 2025

Held on 4 November 2025 (Tuesday) via Zoom, the session was moderated by Assoc. Prof. Ts. Dr. Azlini Ismail, and attended by participants from both public and private universities, encouraging active discussion and exchange of ideas among researchers.

Once again, MSPP extends its sincere appreciation to Dr. Farah Hanan Fathihah Jaffar for sharing her expertise and to all attendees for their active participation, which made the session lively and engaging.

The Society warmly welcomes suggestions and ideas for future MSPP Webinar Series topics or speakers. Members who wish to contribute or collaborate in upcoming sessions are encouraged to get in touch with Assoc. Prof. Dr . Azlini at dr_azlini@iium.edu.my.

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RESEARCH CORNER

Redefining Drug Discovery through Computational Insight

The Long Road of Traditional Drug Discovery

For decades, discovering a new drug has been a painstaking process. It begins with screening thousands of compounds, followed by cycles of testing, chemical modifications, toxicity evaluation, and multiple trial phases. This journey can take more than a decade, cost billions, and still end in failure when a drug candidate shows poor efficacy or unacceptable side effects. The scale of effort highlights a major challenge in pharmacological research and the need for more predictive approaches to identify promising molecules early on.

Bioinformatics: Redefining the Discovery Pipeline

Bioinformatics has revolutionised drug discovery by allowing researchers to predict drug–target interactions before experimental testing. Methods such as molecular docking, molecular dynamics, and cheminformatics enable rapid in silico screening of extensive chemical libraries, pinpointing compounds with strong predicted binding affinities and favourable pharmacological profiles.

From Simulation to Success: The Case of Imatinib

Molecular docking predicts how a small molecule binds to a protein's active or binding site, helping to estimate the strength and orientation of the interaction, while molecular dynamics tests the stability of this interaction under physiological conditions. Together, these methods offer deeper insight into the behaviour and stability of drug candidates within biological systems.

The impact of this computational approach is well illustrated in successful drug discovery efforts. It reduces time, cost, and experimental redundancy, increasing the chances of success in later development stages.

A notable example is the development of imatinib (Gleevec) for chronic myeloid leukaemia (CML). Genomic studies first identified the BCR-ABL fusion gene that produces the oncogenic tyrosine kinase driving CML. Molecular docking was then used to virtually screen compounds, and molecular dynamics simulations verified the binding of imatinib, guiding the design of this highly selective kinase inhibitor that transformed CML treatment from chemotherapy to targeted therapy (Jørgensen, 2019; Konda et al., 2023).

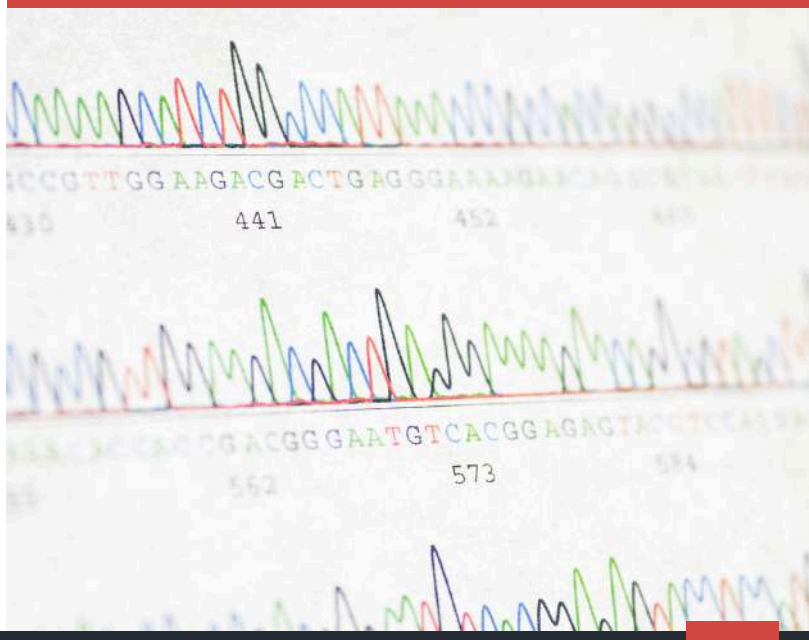
Drug Repurposing and New Therapeutic Indications

Beyond de novo drug discovery, bioinformatics significantly accelerates the repurposing of existing drugs for new therapeutic uses. Paclitaxel, a chemotherapy drug derived from the bark of the Pacific yew tree (Taxus brevifolia), was first approved for ovarian cancer and was later redesigned through computational modelling. Docking studies and pharmacokinetic profiling led to the formulation of a safer, more effective albumin-bound form, Nab-paclitaxel (Abraxane), now also approved by the United States Food and Drug Administration (US FDA) for breast and lung cancers (Chaurasia et al., 2023; Mangilit et al., 2024; Paal et al., 2007; Sati et al., 2024; Suwannasom et al., 2023).

A Turning Point: Bioinformatics and COVID-19 Drug Discovery

The urgency of the COVID-19 outbreak accelerated the use of bioinformatics in antiviral drug discovery. Computational techniques like virtual screening modelled key viral components for SARS-CoV-2 replication, such as the RNA-dependent RNA polymerase (RdRp) and the main protease (Mpro) (Balkrishna et al., 2021; Piplani et al., 2022). Early research using computational tools showed the strong binding of remdesivir to the RdRP target (Elfiky, 2020), guided the clinical fast-tracking and subsequent designation of remdesivir (Veklury) as the first fully US FDA-approved COVID-19 antiviral in October 2020 (U.S. Food and Drug Administration, 2020).

On the other hand, the Mpro target was subjected to rational drug design, guiding the development of nirmatrelvir, a highly specific Mpro inhibitor, combined with the CYP3A inhibitor ritonavir to form Paxlovid (Owen et al., 2021). The resulting development speed led to receiving Emergency Use Authorisation (EUA) in December 2021 (U.S. Food and Drug Administration, 2021), fundamentally validating computational methods as a high-speed pipeline for critical drug development. More recent approaches, combining molecular docking with artificial intelligence, have identified additional candidates, such as paritaprevir and vinblastine derivatives, demonstrating how computational insights can guide real-world drug repurposing (Aqeel et al., 2025; Negru et al., 2022).



The Future: Smarter, Faster, More Predictive

The integration of bioinformatics has turned drug discovery into a more innovative science, driven by prediction rather than trial and error. For pharmacologists, it represents a shift towards data-guided precision, bridging the gap between molecular understanding and therapeutic success.

With each new algorithm and simulation, bioinformatics continues to shorten the path from molecule to medicine, reshaping the future of pharmacological research. For today's pharmacologists, bioinformatics represents more than a tool; it is a catalyst, turning discovery into design and bringing tomorrow's medicines closer to reality.

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MSPP NEWSLETTER

Malaysian Society of Pharmacology and Physiology *November 2025*

FEATURE ARTICLE

Mission Impossible: The Final Reckoning (Physiologist's Perspective)

I've always been a fan of Tom Cruise and his adrenaline pumping movies. Like many others, I had eagerly anticipated the grand finale of the Mission Impossible series. So yes, on its very first day, there I was, an early bird at the cinema, watching it with my partner in crime, my beloved husband.

"But this isn't a movie review. I'm no film critic".
What truly captivated me wasn't just the action, but the physiological elements subtly (or sometimes dramatically) portrayed in the film. As a physiology lecturer, how could I not get excited?

One scene stood out involving a hyperbaric environment, a deep sea mission where Ethan Hunt was given a specialised suit for diving. Interestingly through the movie they generously educate everyone on the impact of deep sea diving.

That moment instantly triggered my inner lecturer mode. Yet, the most jaw-dropping part was when Hunt had to discard his suit during ascent due to unforeseen circumstances. Now here's where real-life physiology would throw a flag!

The Physiology of Hyperbaric Diving: What Really Happens Under Pressure?

In deep-sea environments, pressure increases significantly with depth. The body, which is normally under 1 atmosphere (atm) of pressure at sea level, can experience 4 atm or more at depths over 30 meters. This hyperbaric environment causes inert gases (especially nitrogen) in the air we breathe to become more soluble in body tissues.

Now here's the physiological plot twist:

	Nitrogen Narcosis	Oxygen Toxicity
Cause	Increased partial pressure of nitrogen at depth leads to an anaesthetic effect (narcotic-like state).	Increased partial pressure of oxygen causes damage to cells, particularly in the central nervous system and lungs
Symptoms	Impaired judgment, cognitive function, and motor skills, often described as feeling intoxicated or euphoric, similar to the effects of nitrous oxide or alcohol. ** Imagine like being drunk underwater*	Able to manifest as central nervous system effects such as seizures, or pulmonary effects eg; chest pain, coughing, and difficulty breathing.
Why is it dangerous?	Divers might misread instruments, forget to check oxygen levels, or ascend too quickly, thus, leading to decompression sickness.	Symptoms may range from mild to severe, more severe effect may lead to unconsciousness or fatality.

Still, despite the scientific flaws, the film thrilled me, not just for its action sequences, but for making me see physiology come alive on the big screen. Imagine how exciting lectures would be if every lesson ended with a Hollywood twist!

To my students, if you watched the film, let's discuss: which parts of the movie defy physiological laws? Which scenes made you think, "Wait, that's not how the body works!" Let's turn entertainment into education.

After all, life just like the human body; it thrives on balance. Whether under pressure in the deep sea, or flying high above the clouds, we seek to maintain homeostasis. Even in the most extreme circumstances, our body fights to restore equilibrium. Let that be a reminder in our daily lives: when everything feels out of control, trust that you have within you the power to restore your own balance.

Mission Possible: Stay grounded, stay centered, and never stop learning.

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MSPP UPCOMING EVENT

Save the Date: FAOPS Congress 2027 – The Marvels of Life and Beyond

Get ready for one of the most anticipated scientific gatherings in Asia!

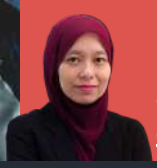
MSPP is proud to host the 11th Federation of the Asian and Oceanian Physiological Societies (FAOPS) Congress, which will take place from 31st July to 3rd August 2027 at the Kuala Lumpur Convention Centre (KLCC), Malaysia.

Held in conjunction with the 40th Annual Scientific Meeting of MSPP, FAOPS Congress 2027 promises to be an inspiring convergence of leading researchers, educators, and clinicians exploring "The Marvels of Life and Beyond."

This prestigious congress will feature cutting-edge keynote lectures, thematic symposia, and an industry exhibition showcasing the latest innovations in physiology, pharmacology, and biomedical sciences.

Stay tuned for abstract submission and registration details, and mark your calendars to be part of this milestone event uniting the region's scientific community!

Visit our official website for updates: www.faops2027.com



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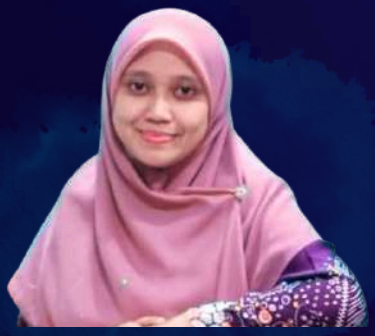
MSPP MEMBERSHIP

MSPP is now 268 members strong, with 186 annual members and 82 Life Members.

We wish to congratulate our newest Life Members of MSPP

Prof. Dr. Suzanah Binti Abdul Rahman
International Islamic University Malaysia (IIUM)

Prof. Madya. Dr. Mohd. Helmy Mokhtar
Universiti Kebangsaan Malaysia (UKM)



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