

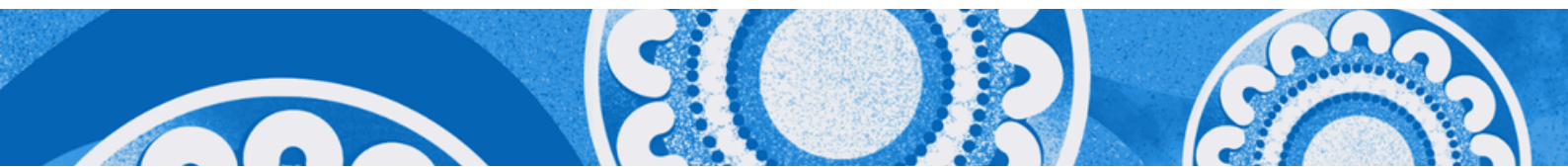


# **Indo - Pacific Future Leaders in AMR Student Symposium 2025**

25th February 2025



**Centre to Impact AMR**  
Antimicrobial Resistance | Sustainable Solutions





# INDO-PACIFIC Student Symposium 2025



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# 2025 SYMPOSIUM ORGANISING COMMITTEE



**Afif Jati**



**Charles  
Nunez**



**Deshani  
Gamage**



**Genevieve  
Samuel**



**Jiahui Li**



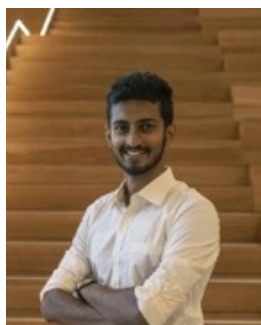
**Kalani  
Paranagama**



**Ravali  
Theegala**



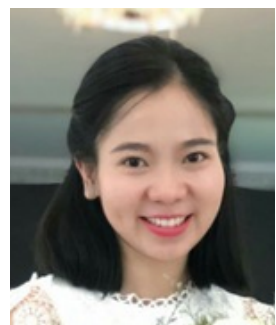
**Sabrina  
Suhani**



**Sahampath  
Hettiarachchi**



**Samriddhi  
Thakur**



**To Nguyen  
Thi Nguyen**



**Veronica  
Lay**

# INDO PACIFIC FUTURE LEADERS IN AMR STUDENT SYMPOSIUM 2025

## Symposium Schedule

Welcome Address	8:00 AM
Keynote Session: Prof. Mark Blaskovich	8:15 AM
Session 1: Innovative technologies & interventions	9:15 AM
Morning Break	11:00 AM
Session 2: Environmental, Economic & Social Impacts of AMR	11:15 AM
Lunch Break & Networking	12:00 PM
Keynote Session: Prof. Trevor Lithgow	1:00 PM
Session 3: Regional AMR Challenges & Solutions	2:00 PM
Afternoon Break	3:45 PM
Lightning Talks	4:00 PM
Break	5:00 PM
Prizes & Closing Remarks	5:10 PM
Networking Session	5:30 PM

\*\*ALL TIMES ARE IN AEDT

# KEYNOTE SESSION: PROF MARK BLASKOVICH

Chair: Sahampath Hettiarachchi



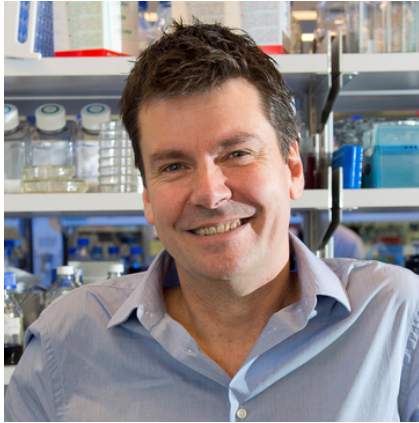
**CEA·StAR**  
Centre for Environmental and Agricultural  
Solutions to Antimicrobial Resistance

## How do we combat AMR? Global Collaborations for a Global Problem

This talk will explore the current state of the antibiotic pipeline and its evolution over the past decade, and provide an overview of approaches to discovering new antibiotics. Two global initiatives will be presented. The first is a crowdsourcing approach designed to uncover novel chemical structures with antimicrobial activity – the Community for Open Antimicrobial Drug Discovery, which has tested over 350,000 compounds from 300+ collaborators. A parallel program is collecting highly-resistant clinical isolates from low-and middle income countries, to help ensure new antibiotics work against pathogens emerging from regions with high levels of endemic resistance.

# KEYNOTE SESSION: PROF TREVOR LITHGOW

Chair: Sabrina Suhani



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## Genomics and Microbiology: Starting to understand how AMR phenotypes arise in our environment.

The global crises of our times: the climate crisis and antimicrobial resistance (AMR) crisis, have humans and agricultural systems encountering pathogens previously unknown to us. The World Bank has made some chilling projections to 2050 for the AMR crisis, with global health costs rising by up to USD 1000 billion per annum, global livestock production reduced by 2.6% - 7.5% per annum, global GDP falling by up to 5% and huge increases in extreme poverty around the world. This makes a strong argument for investment into sustainable solutions to curb the increase AMR. The development of new antimicrobial drugs is essential and can have fast impacts, but this is not a sustainable solution and therefore cannot be our only strategy.

# KEYNOTE SESSION: PROF TREVOR LITHGOW

Chair: Sabrina Suhani

In addition to education initiatives, the potentially sustainable solutions to the AMR crisis may come from bioprospecting for microbes that secrete new antimicrobial compounds, from the use of phage to treat bacterial infections, and from microbial assessments to herald the emergence of new pathogens. All of this 21st Century microbiology requires:

- (i) ethical access to biodiversity,
- (ii) affordable DNA sequencing capability,
- (iii) genomics-trained technical staff, and
- (iv) microbiologists who want to think creatively.

Vignettes will be presented to show how genomics surveillance projects – at large or small scale - can be tailored towards rapid responses and/or strategic interventions to curb AMR. With partners in the Indo-Pacific region we have addressed cases of in-patient evolution of carbapenem resistance, the kinetics and landscape of genome drift in the presence of antimicrobial drugs, neonate colonization by *Klebsiella* in the NICU, and porin-typing to predict anti-microbial drug sensitivity.

# SESSION 1: INNOVATIVE TECHNOLOGIES & INTERVENTIONS

Chairs: Dr. Jhih-Hang Jiang & Dr. Galain Williams

## **Christine Kim - PhD student - New Zealand**

Development of hypoxia-activated prodrugs of second generation analogues of bedaquiline for treatment of latent Tuberculosis

## **Alice Terrill - PhD student - Australia**

Mechanism-based modelling predicts antibiotic effect on *Pseudomonas aeruginosa* where PK/PD indices cannot

## **Dominika Fuhs - PhD student - Australia**

The effects of different resistance mechanisms on *Pseudomonas aeruginosa* response to meropenem

## **Jamia Hemphill - PhD student - Australia**

Investigating antimicrobial activity in the human gastrointestinal microbiome

## **Siobhonne Breen - PhD student - Australia**

Ceftolozane/tazobactam plus meropenem against ST235-clone *Pseudomonas aeruginosa* isolates in hollow-fibre infection model

## **Tope A. Ibisani - PhD student - Australia**

Comprehensive resistance factor profiling and data-driven computational drug discovery targeting virulence factor regulators from WGS analysis of *Pseudomonas aeruginosa*

## **Soffi Law Kei Kei - PhD student - Malaysia**

Exploring phage resistance trade-offs to counteract the evolution of antimicrobial resistance in *Escherichia coli*

# SESSION 2: ENVIRONMENTAL, ECONOMIC & SOCIAL IMPACTS OF AMR

Chairs: Dr. Tom Watts and Dr. Gareth Howells

Session sponsored by



**Muhammad Azreen Bin Mat Husin - PhD student - Malaysia**

Determination of Extended Spectrum Beta-lactamase (ESBL) producing *Escherichia coli* and *Klebsiella pneumoniae* carriage in Bangladeshi communities working in Klang Valley

**Jia Qi Beh - PhD student - Australia**

Role of mobile genetic elements in linezolid-resistant Enterococci: a global and Australian perspective

**Meddage A.K.M.M.K - PhD student - Sri Lanka**

Prevalence of antibiotic resistance in surface water, groundwater and sediment in the transition zone of the Kelani River Basin, Sri Lanka

# SESSION 3: REGIONAL AMR CHALLENGES & SOLUTIONS

Chairs: Dr. Rhys Dunstan and Dr. Tom Stanton

## **Tanzina Akter - PhD student - Australia**

Phenotypic and molecular insights into antimicrobial resistance differences between *exoU* and *exoS* *Pseudomonas aeruginosa* isolates from Microbial Keratitis

## **Munazzah Maqbool - PhD student - Australia**

Exploring the genomic diversity of third-generation cephalosporin-resistant *Escherichia coli* in Australia

## **Abhinaba Ray - PhD student - Australia**

Bacteriocin discovery in *Klebsiella* isolates from clinical infections

## **Isa Olamilekan Arinola - PhD student - Australia**

Challenging antimicrobial resistance with new bismuth, gallium & Indium based complexes, materials, & coatings

## **Abiye Tigabu Molla - PhD student - Australia**

Molecular profiling of antimicrobial resistance and virulence factors in *Pseudomonas aeruginosa* isolates from Keratitis patients

## **Shyam Kumar Mishra - PhD student - Australia**

Antimicrobial peptidomimetic against drug-resistant yeasts of medical importance

## **Mwinyi Shawwaly Omary - Masters student - Tanzania**

Combating antimicrobial resistance in Katavi Region: Challenges and strategic solutions

# SESSION 4: LIGHTNING TALKS

Chairs: Dr. Jackie Cheung and Dr. Houdaii Khalil

## **Hoai An (Andy) Nguyen - PhD student - Australia**

Prediction of antimicrobial resistance in *Pseudomonas aeruginosa* using integration of multiple genomic representations and graph neural networks

## **Muhammad Ridwan Adyatama - PhD student - Indonesia**

Successful isolation of anti-MRSA metabolite-producing bacteria from aquacultured and captive scleractinian corals of Indonesian aquarium trade

## **Arijit Nandi - PhD student - Australia**

Seeing the unseen: Imaging bacterial infections

## **Shalini Roy - Masters student - India**

Using CRISPR/CAS9 system to study co-relation of quorum sensing system and virulence factor in *Pseudomonas aeruginosa*

## **Afsaneh Arshadi Edlo - Masters student - Iran**

Harnessing the body's natural defences: Dual-function antibiotics and synthetic biology to combat antimicrobial resistance

## **Mst Umme Laila Urmi - PhD student - Australia**

Construction of antiviral surfaces using peptidomimetics

## **Rahul Maitra - PhD student - India**

Synthesis of tryptanthrin appended dispiropyrrolidine oxindoles and their antibacterial evaluation

# SESSION 4: LIGHTNING TALKS

Chairs: Dr. Jackie Cheung and Dr. Houdaii Khalil

## **Vedika Bhatt - PhD student - Malaysia**

Antibiotic resistance knowledge in Malaysia: socio-demographic influences and educational gaps

## **Deepanshi Saxena - PhD student - India**

Pyrvinium pamoate potentiates levofloxacin against levofloxacin-resistant *Staphylococcus aureus*.

## **Suleman Irfan - PhD student - Australia**

Comparison of susceptibilities of *Pseudomonas aeruginosa* to antibiotics and bacteriophages

## **Shakeel Shahzad - PhD student - Australia**

Evaluation of patterns of susceptibility of clinical isolates of *Acinetobacter* spp towards polymyxins and different cationic antimicrobials

## **Jiawei Shen - PhD student - Australia**

Whole genome sequencing-based prediction of antibiotic-resistance of ocular *Staphylococcus aureus* across six continents

## **Lakshmi Naga Kavya Menta - PhD student - Malaysia**

Phage-based solutions for uropathogenic *Escherichia coli* infections: investigating resistance mechanisms and therapeutic potential

## **Bhavya Mishra - Masters student - India**

Impact of brlR activation by SagS on antibiotic resistance profiles in biofilm-forming strains of *Pseudomonas aeruginosa*

## **Mahi Raj - Masters student - India**

Mega plasmids and carbapenem resistance: a deep dive into *Klebsiella pneumoniae* genomics