

# **MGE AUS**

**17th to 18th Feb 2025  
La Trobe University  
Melbourne City Campus**

**Program Booklet**

# Program at a Glance

## Day 1

**Registration**  
10:00 - 10:45

**Opening & Welcome**  
10:45 - 10:55

**Keynote 1**  
10:55 - 11:30

**ASM State  
Branch Winners**  
11:30 - 12:15

**Lunch**  
12:15 - 13:15

**S1. Plasmids**  
13:15 - 14:35

**Afternoon tea**  
14:35 - 15:05

**Keynote 2**  
15:05 - 15:40

**S2. Antimicrobial  
Resistance**  
15:40 - 17:00

## Day 2

**S3. MGEs & The  
Host**  
9:00 - 10:35

**Morning Tea**  
10:35 - 11:05

**S4. Integrative &  
Transposable  
elements**  
11:05 - 12:10

**AGM + Lunch**  
12:10 - 13:40

**S5. Bacteriophage**  
13:40 - 15:15

**Afternoon tea**  
15:15 - 15:45

**Keynote 3**  
15:45 - 16:20

**Awards and Closing**  
16:20 - 16:40

# Full Program

## Monday the 17<sup>th</sup> of February

|               |              |
|---------------|--------------|
| 10:00 – 10:45 | Registration |
|---------------|--------------|

|               |                 |                    |
|---------------|-----------------|--------------------|
| 10:45 – 10:55 | Opening address | Chair: Josh Ramsay |
|---------------|-----------------|--------------------|

|                                                            |                                 |                        |
|------------------------------------------------------------|---------------------------------|------------------------|
| 10:55 – 11:30                                              | Keynote Speaker: Debnath Ghosal | Chair: Galain Williams |
| Visualising the Molecular Anatomy of Bacterial Conjugation |                                 |                        |

|               |                                                                                                                                   |                     |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 11:30 – 12:15 | ASM State Branch Winners                                                                                                          | Chair: Leah Roberts |
| 11:30 – 11:45 | <a href="#"><u>Insertion sequences – the driving force behind <i>Klebsiella pneumoniae</i> colistin resistance in Vietnam</u></a> | To Nguyen           |
| 11:45 – 12:00 | <a href="#"><u>Mobile symbiotic elements in inoculant rhizobia</u></a>                                                            | MacLean Kohlmeier   |
| 12:00 – 12:15 | <a href="#"><u>In situ visualisation of the spatial and host dynamics of plasmids in the human gut</u></a>                        | Lara Carrington     |

|               |       |
|---------------|-------|
| 12:15 – 13:15 | Lunch |
|---------------|-------|

|               |                                                                                                                                  |                   |
|---------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 13:15 – 14:35 | Session 1: Plasmids                                                                                                              | Chair: Zack Lian  |
| 13:15 – 13:35 | <a href="#"><u>A functional genomic approach to unravel complex genetic mechanisms of AMR plasmid stability and transfer</u></a> | Minh-Duy Phan     |
| 13:35 – 13:50 | <a href="#"><u>Developing a robust approach to determining plasmid transmission in the hospital setting</u></a>                  | Jane Hawkey       |
| 13:50 – 14:05 | <a href="#"><u>Rep 3 family <i>Acinetobacter</i> plasmids that harbour <i>dif</i> modules</u></a>                                | Stephanie Ambrose |

|               |                                                                                                                                                |                  |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| 14:05 – 14:20 | <a href="#">Engineering an improved open-source T7 expression system</a>                                                                       | Carmen Hawthorne |
| 14:20 – 14:35 | <a href="#">Plasmids of different <i>Klebsiella pneumoniae</i> sequence types isolated from animal infections: same, similar or different?</a> | Carola Venturini |

|                      |                      |
|----------------------|----------------------|
| <b>14:35 – 15:05</b> | <b>Afternoon tea</b> |
|----------------------|----------------------|

|                      |                                                                                                                                  |                          |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>15:05 – 16:25</b> | <b>Session 2: Antimicrobial Resistance</b>                                                                                       | <b>Chair: Maggie Lam</b> |
| 15:05 – 15:25        | <a href="#">Tracking carbapenem resistance plasmids in hospital <i>Enterobacteriaceae</i> using long-read sequencing</a>         | Rob Moran                |
| 15:25-15:40          | <a href="#">Developing a novel analytical framework for tracking mobile <i>blaKPC</i> carbapenemase gene dissemination</a>       | Max Docherty-Kenny       |
| 15:40 – 15:55        | <a href="#">Mobile genetic elements driving antimicrobial resistance in <i>Streptococcus pneumoniae</i></a>                      | Gabriel Sunmonu          |
| 15:55 – 16:10        | <a href="#">Role of mobile genetic elements in linezolid-resistant Enterococci: a global and Australian perspective</a>          | Jia Qi Beh               |
| 16:10 – 16:25        | <a href="#">Exploring the genomic diversity of third-generation cephalosporin-resistant <i>Escherichia coli</i> in Australia</a> | Munazzah Maqbool         |

|                                                                        |                                       |                          |
|------------------------------------------------------------------------|---------------------------------------|--------------------------|
| <b>16:25 – 17:00</b>                                                   | <b>Keynote Speaker: Nenad Macesic</b> | <b>Chair: Maggie Lam</b> |
| <b>Mobile Genetic Elements in the Clinic: From Discovery to Impact</b> |                                       |                          |

|                                                                                       |                          |
|---------------------------------------------------------------------------------------|--------------------------|
| <b>18:00 – Late</b>                                                                   | <b>Conference Dinner</b> |
| <b>Riverland Bar:</b> <a href="#">Federation Wharf Vaults 1-9, Melbourne VIC 3000</a> |                          |

# Tuesday the 18<sup>th</sup> of February

|             |              |
|-------------|--------------|
| 8:00 – 9:00 | Registration |
|-------------|--------------|

| 9:00 – 10:35  | Session 3: MGEs and the Host                                                                                                                          | Chair: Josh Ramsay |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| 9:00 – 9:20   | <a href="#"><u>Rapid dissemination of host metabolism-manipulating genes via integrative and conjugative elements</u></a>                             | Elena Colombi      |
| 9:20 – 9:35   | <a href="#"><u>A plasmid-encoded protein modulates sporulation in <i>Paraclostridium sordellii</i></u></a>                                            | Sarah Revitt-Mills |
| 9:35 – 9:50   | <a href="#"><u>Developing a genetic manipulation toolkit for <i>Gordonia amarae</i></u></a>                                                           | Jessica Owen       |
| 9:50 – 10:05  | <a href="#"><u>Widespread horizontal transfer and strong selection for aerotrophy genes underlie microbial adaptation in Antarctic soils</u></a>      | Yongyi Peng        |
| 10:05 – 10:20 | <a href="#"><u>Involvement of prophage genes in modifying the sugar composition of the K58 capsule produced by <i>Acinetobacter baumannii</i></u></a> | Nowshin Sharar     |
| 10:20 – 10:35 | <a href="#"><u>Virulence plasmids of extra-intestinal pathogenic <i>Escherichia coli</i></u></a>                                                      | Zheng Jie Lian     |

|               |             |
|---------------|-------------|
| 10:35 – 11:05 | Morning Tea |
|---------------|-------------|

| 11:05 – 12:10 | Session 4: Integrative Elements                                                                                                      | Chair: Sally Partridge |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 11:05 – 11:25 | <a href="#"><u>Target selection by IS1111 insertion sequences</u></a>                                                                | Ruth Hall              |
| 11:25 – 11:40 | <a href="#"><u>Mobile genetic elements influencing the dissemination of a critical antibiotic resistance gene, <i>blaKPC</i></u></a> | Bethany Cross          |
| 11:40 – 11:55 | <a href="#"><u>Challenges in developing an annotated mobile genetic element database workflow</u></a>                                | Guan Xue Lee           |
| 11:55 – 12:10 | <a href="#"><u>A novel route to antibiotic resistance in <i>Acinetobacter baumannii</i> clinical</u></a>                             | Christopher Harmer     |

|  |                                                               |  |
|--|---------------------------------------------------------------|--|
|  | <a href="#">isolates via IS26-mediated gene amplification</a> |  |
|--|---------------------------------------------------------------|--|

|                      |              |
|----------------------|--------------|
| <b>12:10 – 13:10</b> | <b>Lunch</b> |
|----------------------|--------------|

|                      |                                       |                                                           |
|----------------------|---------------------------------------|-----------------------------------------------------------|
| <b>13:10 – 13:40</b> | <b>MGE SIG Annual General Meeting</b> | <b>Chairs: Josh Ramsay, Galain Williams, Leah Roberts</b> |
|----------------------|---------------------------------------|-----------------------------------------------------------|

|                      |                                                                                                                                                                   |                               |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>13:40 – 15:15</b> | <b>Session 5: Bacteriophages</b>                                                                                                                                  | <b>Chair: Steve Petrovski</b> |
| 13:40 – 14:00        | <a href="#">Investigating the Role of the Gut Phageome in Cardiovascular Disease</a>                                                                              | Liana Theodoridis             |
| 14:00 – 14:15        | <a href="#">Crossing the barrier: Understanding the life cycle of membrane containing phages at molecular resolution</a>                                          | Somavally Dalvi               |
| 14:15 – 14:30        | <a href="#">Characterisation of <i>Pseudomonas aeruginosa</i> phage G101 and its inhibition by IncP plasmids</a>                                                  | Mikaela Whitty                |
| 14:30 – 14:45        | <a href="#">Differences in antibiotic and bacteriophage resistance between <i>exoU</i> and <i>exoS</i> <i>Pseudomonas aeruginosa</i> from microbial keratitis</a> | Tanzina Akter                 |
| 14:45 – 15:00        | <a href="#">Emerging diversity of anti-phage defence systems and antimicrobial resistance genes in <i>Vibrio cholerae</i></a>                                     | Mozammel Hoque                |
| 15:00 – 15:15        | <a href="#">Estimation of phage species trees using gene/species tree reconciliation</a>                                                                          | Brett Babec                   |

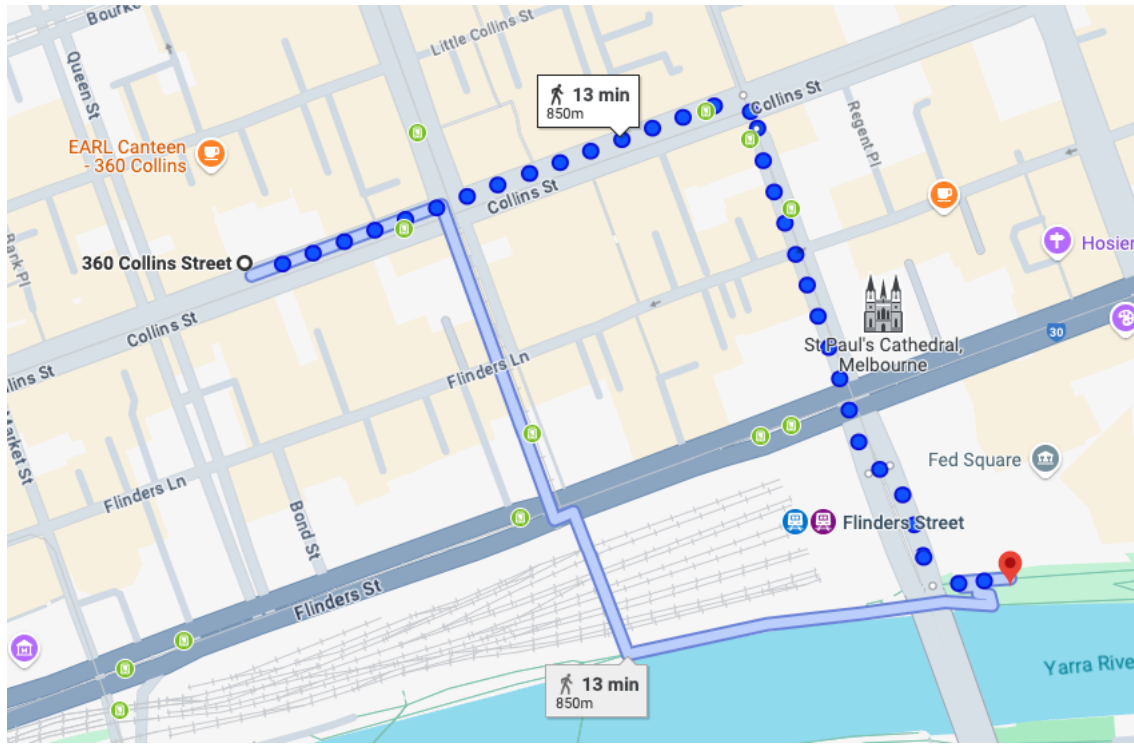
|                      |                      |
|----------------------|----------------------|
| <b>15:15 – 15:45</b> | <b>Afternoon Tea</b> |
|----------------------|----------------------|

|                                                                                                                    |                                       |                           |
|--------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------|
| <b>15:45 – 16:20</b>                                                                                               | <b>Keynote Speaker: Anna Sheppard</b> | <b>Chair: Jane Hawkey</b> |
| <b>Using genomics to disentangle antimicrobial resistance gene transmission driven by mobile genetic elements.</b> |                                       |                           |

|                                                                                     |                                    |                               |
|-------------------------------------------------------------------------------------|------------------------------------|-------------------------------|
| <b>16:20 – 16:40</b>                                                                | <b>Awards Ceremony &amp; Close</b> | <b>Chair: Sally Partridge</b> |
| <b>Awards Presented by Emeritus Professor Julian Rood &amp; Professor Ruth Hall</b> |                                    |                               |

# Getting to the Riverland Bar

Federation Wharf Vaults 1-9, Melbourne VIC 3000



## 360 Collins St

Docklands VIC 3008

- ↑ Head east on Collins St towards Equitable Pl  
400 m
  - ➔ Turn right onto Swanston St  
27 m
  - ↗ Slight right to stay on Swanston St  
270 m
  - ↶ Turn left towards Swanston St  
18 m
  - ➔ Turn right onto Swanston St  
94 m
  - ↶ Turn left onto Princes Walk  
58 m
- i Destination will be on the right**

## Riverland Bar

Federation Wharf Vaults 1-9, Melbourne VIC 3000