

# Curriculum Vitae

Dr Michael Lydeamore  
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## Appointments Held

<b>Senior Lecturer - Econometrics and Business Statistics</b> Monash University	2021 —
<b>COVID-19 Modelling &amp; Forecasting Lead</b> <b>Manager, Analytics</b> Department of Health and Human Services, Victoria	2020
<b>Postdoctoral Research Fellow</b> Monash University	2019 — 2021
<b>Honorary Team Member</b> SaferCare Victoria	2019 —
<b>Honorary Research Fellow</b> Alfred Health	2019 —
<b>Research Fellow</b> The Kirby Institute, University of New South Wales	2018 — 2019

## Education

<b>Doctor of Philosophy – Applied Mathematics</b> The University of Melbourne Thesis title: Mechanistic and statistical models of skin disease transmission	2015 — 2019
<b>Masters of Philosophy – Applied Mathematics</b> The University of Adelaide Thesis title: Approximations of stochastic household models for comparing antiviral allocation schemes Awarded the Applied Probability Trust prize for the highest mark with a project in Applied Mathematics and Statistics	2013 — 2014
<b>Bachelor of Mathematical Sciences</b> The University of Adelaide Graduated with a double major in applied and pure mathematics	2015 — 2019

## Publications

- **Lydeamore, M. J.**, Donker, T., Wu, D., Gorrie, C., Turner, A., Easton, M., Hennessy, D., Geard, N., Howden, B. P., Cooper, B. S., Wilson, A., Peleg, A. Y., & Stewardson, A. J. (2024). Carbapenemase-producing enterobacterales colonisation status does not lead to more frequent admissions: a linked patient study. *Antimicrobial Resistance & Infection Control*, 13(1), 82. <https://doi.org/10.1186/s13756-024-01437-x>
- Shearer, F. M., McCaw, J. M., Ryan, G. E., Hao, T., Tierney, N. J., **Lydeamore, M. J.**, Wu, L., Ward, K., Ellis, S., Wood, J., McVernon, J., & Golding, N. (2024). Estimating the impact of test–trace–isolate–quarantine systems on SARS-CoV-2 transmission in Australia. *Epidemics*, 47, 100764. <https://doi.org/10.1016/j.epidem.2024.100764>
- Le, T. P., Abell, I., Conway, E., Campbell, P. T., Hogan, A. B., **Lydeamore, M. J.**, McVernon, J., Mueller, I., Walker, C. R., & Baker, C. M. (2024). Modelling the impact of hybrid immunity on future COVID-19 epidemic waves. *BMC Infectious Diseases*, 24(1), 407. <https://doi.org/10.1186/s12879-024-09282-4>
- Conway, E., Walker, C. R., Baker, C., **Lydeamore, M. J.**, Ryan, G. E., Campbell, T., Miller, J. C., Rebuli, N., Yeung, M., Kabashima, G., Geard, N., Wood, J., McCaw, J. M., McVernon, J., Golding, N., Price, D. J., & Shearer, F. M. (2023). COVID-19 vaccine coverage targets to inform reopening plans in a low incidence setting. *Proceedings of the Royal Society B: Biological Sciences*, 290(2005), 20231437. <https://doi.org/10.1098/rspb.2023.1437>
- Mitchell, B. G., Stewardson, A. J., Kerr, L., Ferguson, J. K., Curtis, S., Busija, L., **Lydeamore, M. J.**, Graham, K., & Russo, P. L. (2023). The incidence of nosocomial bloodstream infection and urinary tract infection in Australian hospitals before and during the COVID-19 pandemic: an interrupted time series study. *Antimicrobial Resistance & Infection Control*, 12(1), 61. <https://doi.org/10.1186/s13756-023-01268-2>
- Zachreson, C., Shearer, F. M., Price, D. J., **Lydeamore, M. J.**, McVernon, J., McCaw, J., & Geard, N. (2022). COVID-19 in low-tolerance border quarantine systems: Impact of the Delta variant of SARS-CoV-2. *Science Advances*, 8(14), eabm3624. <https://doi.org/10.1126/sciadv.abm3624>
- **Lydeamore, M. J.**, Mitchell, B. G., Bucknall, T., Cheng, A. C., Russo, P. L., & Stewardson, A. J. (2022). Burden of five healthcare associated infections in Australia. *Antimicrobial Resistance & Infection Control*, 11(1), 69. <https://doi.org/10.1186/s13756-022-01109-8>
- Trauer, J. M., **Lydeamore, M. J.**, Dalton, G. W., Pilcher, D., Meehan, M. T., McBryde, E. S., Cheng, A. C., Sutton, B., & Ragonnet, R. (2021). Understanding how Victoria, Australia gained control of its second COVID-19 wave. *Nature Communications*, 12(1), 6266. <https://doi.org/10.1038/s41467-021-26558-4>
- McMahon, J. H., **Lydeamore, M. J.**, & Stewardson, A. J. (2021). Bringing evidence from press release to the clinic in the era of COVID-19. *Journal of Antimicrobial Chemotherapy*, 76(3), 547–549. <https://doi.org/10.1093/jac/dkaa506>
- Zachreson, C., Mitchell, L., **Lydeamore, M. J.**, Rebuli, N., Tomko, M., & Geard, N. (2021). Risk mapping for COVID-19 outbreaks in Australia using mobility data. *Journal of The Royal Society Interface*, 18(174), 20200657. <https://doi.org/10.1098/rsif.2020.0657>
- Sullivan, S. G., Brotherton, J. M., Lynch, B. M., Cheung, A., **Lydeamore, M.**, Stevenson, M., Firestone, S., Canevari, J., Nguyen, H. N. J., & Carville, K. S. (2021). Population-based analysis of the epidemiological features of COVID-19 epidemics in Victoria, Australia, January 2020–March 2021, and their suppression through comprehensive control strategies. *LANCET REGIONAL HEALTH-WESTERN PACIFIC*, 17.
- **Lydeamore, M. J.** (2021). Mathematical models to support Victoria’s COVID-19 response: a blunt instrument to a complex problem. *Journal of the Australian Mathematical Society*. <https://austms.org.au/wp-content/uploads/2021/07/Lydeamore.pdf>
- **Lydeamore, M. J.**, Campbell, P. T., Price, D. J., Wu, Y., Marcato, A. J., Cuningham, W.,

- Carapetis, J. R., Andrews, R. M., McDonald, M. I., McVernon, J., Tong, S. Y. C., & McCaw, J. M. (2020). Estimation of the force of infection and infectious period of skin sores in remote Australian communities using interval-censored data. *PLOS Computational Biology*, 16(10), e1007838. <https://doi.org/10.1371/journal.pcbi.1007838>
- Cuningham, W., McVernon, J., **Lydeamore, M. J.**, Andrews, R. M., Carapetis, J., Kearns, T., Clucas, D., Dhurrkay, R. G., Tong, S. Y. C., & Campbell, P. T. (2019). High burden of infectious disease and antibiotic use in early life in Australian Aboriginal communities. *Australian and New Zealand Journal of Public Health*, 43(2), 149–155. <https://doi.org/10.1111/1753-6405.12876>
  - **Lydeamore, M. J.**, Campbell, P. T., Regan, D. G., Tong, S. Y. C., Andrews, R. M., Steer, A. C., Romani, L., Kaldor, J. M., McVernon, J., & McCaw, J. M. (2018). A biological model of scabies infection dynamics and treatment informs mass drug administration strategies to increase the likelihood of elimination. *Mathematical Biosciences*. <https://doi.org/10.1016/j.mbs.2018.08.007>
  - **Lydeamore, M. J.**, Campbell, P. T., Cuningham, W., Andrews, R. M., Kearns, T., Clucas, D., Dhurrkay, R. G., Carapetis, J., Tong, S. Y. C., McCaw, J. M., & McVernon, J. (2018). Calculation of the age of the first infection for skin sores and scabies in five remote communities in northern Australia. *Epidemiology & Infection*, 1–8. <https://doi.org/10.1017/S0950268818001061>
  - **Lydeamore, M. J.** (2018). *Mechanistic and statistical models of skin disease transmission*. <http://minerva-access.unimelb.edu.au/handle/11343/221232>
  - Vito, T., Singh, G. R., Davison, B., Campbell, P. T., **Lydeamore, M. J.**, Robinson, A., McVernon, J., Tong, S. Y. C., & Geard, N. (2017). Indigenous Australian household structure: a simple data collection tool and implications for close contact transmission of communicable diseases. *PeerJ*, 5, e3958. <https://doi.org/10.7717/peerj.3958>
  - **Lydeamore, M.**, Bean, N., Black, A. J., & Ross, J. V. (2016). Choice of Antiviral Allocation Scheme for Pandemic Influenza Depends on Strain Transmissibility, Delivery Delay and Stockpile Size. *Bulletin of Mathematical Biology*, 1–29. <https://doi.org/10.1007/s11538-016-0144-6>

## Funding

Almost all of this funding was obtained in partnership with large, collaborative teams.

### **Modelling Work in Low and Middle Income Countries in the Western Pacific Region for the COVID-19 SAGE Working Group**

World Health Organisation

Awarded value: \$8,157

### **Modelling To Support Australia’s Resilience to and Preparedness for Omicron And Future Sars-Cov-2 Variants**

Commonwealth Government of Australia

Awarded value: \$80,059

### **Contractual Partner to Conduct Research on Healthcare-Associated Infection Rates in Phillippine Hospitals**

World Health Organisation Phillippines

Awarded value: \$72,078

### **Centre of Western Public Health Unit**

Contract Research

Awarded value: \$25,000

### **Extending and comparing methods for projecting social contact matrices**

SPECTRUM/SPARK Seed Funding

Awarded value: \$19,438

<b>Quantifying longitudinal relationships between community mobility and COVID-19 case incidence in west metropolitan Melbourne</b> SPECTRUM/SPARK Seed Funding Awarded value: \$19,896	2022
<b>Modelling to support Australia’s national plan for COVID-19</b> Commonwealth Government of Australia Awarded value: \$147,536	2021
<b>Modelling to support Australia’s transition to ‘COVID-normal’</b> Australian Office of Health Protection Awarded value: \$25,620	2021
<b>Conference presentations and contributed talks</b>	
<b>Networks of networks in infectious diseases modelling</b> — Panelist Infectious Diseases Modelling Conference	2024
<b>Generating synthetic contact matrices using open-source data</b> Australia and New Zealand Industrial Applied Mathematics Conference	2024
<b>Data-Driven Insights into Healthcare Challenges: Two Case Studies</b> — Invited Speaker Universitätsklinikum Freiburg Seminar Series	2023
<b>Data-Driven Insights into Healthcare Challenges: Two Case Studies</b> UNSW Australia Statistics & Data Science Seminar	2023
<b>Burden of healthcare associated infections in Australia</b> Australia and New Zealand Industrial Applied Mathematics Conference	2022
<b>Exponential Random Graph Models and CPE transmission</b> — Invited Speaker Melbourne Mathematical Biology Seminar Series	2021
<b>Mathematical modelling for COVID-19 in Victoria, Australia</b> — Invited Speaker Math for Industry Forum, Vietnam	2021
<b>The associations between transmission of CPE and ward connectivity: a network analysis</b> Australasian Society for Infectious Diseases Annual Scientific Meeting	2021
<b>The burden of healthcare acquired infections in Australian public hospitals</b> Australasian Society for Infectious Diseases Annual Scientific Meeting	2021
<b>Decision Making and Mathematical Biology - Victoria’s usage of COVID-19 modelling</b> — Invited Speaker Mathematical Biology Special Interest Group Workshop	2021
<b>Modelling between-household effective contact and the elimination of COVID-19 in Melbourne, Australia</b> Australia and New Zealand Industrial Applied Mathematics Conference	2021
<b>Mathematical modelling and Victoria’s response to COVID-19</b> — Invited Speaker Victorian ANZIAM Branch Meeting	2020
<b>Australia’s experience and the role of modelling in its responses to COVID-19</b> — Invited Speaker Usher Institute COVID-19 Webinar	2020

<b>Estimating epidemiological quantities for skin sores in remote Australian communities using interval-censored data</b> Australia and New Zealand Industrial Applied Mathematics Conference	2019
<b>Estimating epidemiological quantities for skin sores in remote Australian communities using interval-censored data</b> NSW–ACT ANZIAM Branch Meeting	2018
<b>Coupled models of Group A Streptococcus and Scabies: How likely is eradication?</b> PRISM International Conference	2018
<b>Investigating the dynamics of coupled epidemiological transmission models with application to Group A Streptococcus and Scabies</b> Society for Mathematical Biology Annual Meeting	2018
<b>Investigating the dynamics of coupled models with applications to Group A Streptococcus and Scabies</b> Australia and New Zealand Industrial Applied Mathematics Conference	2018
<b>Quantifying the age of first infection with skin sores in five remote Australian Aboriginal communities</b> Lancefield International Symposium on Streptococci and Streptococcal Diseases	2017
<b>Investigating the dynamics of coupled models with applications to Group A Streptococcus and Scabies</b> PRISM Annual Knowledge Transfer and Training Conference	2017
<b>Constructing mathematical models of Group A Streptococcus and Scabies in remote Australian Indigenous communities — Invited Speaker</b> Zeeman Institute Seminar Series	2017
<b>Developing a model for the transmission and treatment dynamics of scabies infections a high prevalence setting</b> Melbourne-Manchester Joint Workshop	2017
<b>Developing a model for the transmission of Group A Streptococcus</b> Australia and New Zealand Industrial Applied Mathematics Conference	2017
<b>Determining the age of first infection from incomplete data</b> Modelling Emerging Infections and Neglected Tropical Diseases Workshop	2016
<b>Investigating Intervention Intervals for Scabies Infections</b> Australia and New Zealand Industrial Applied Mathematics Conference	2016

## Teaching

### Lecturer

[ETC5513] <b>Reproducible and Collaborative practices</b> (Chief Examiner)	2024–
[ETC5523] <b>Communicating with Data</b> (Chief Examiner)	2023–
[ETC5512] <b>Wild-Caught Data</b>	2022–2023
[ETC5521] <b>Exploratory Data Analysis</b>	2022

## **Tutor**

[MAST10016] <b>Mathematics for Biomedicine</b>	2016–2019
[MAST30001] <b>Stochastic Modelling</b>	2018

## **Awards**

<b>University of Melbourne Faculty of Engineering and Information Technology Excellence Award in Interdisciplinary Research</b>	2021
<b>IPAA Spirit of Service Awards – Finalist</b>	2021
<b>Engagement Australia Excellence Awards — Outstanding Engagement for Research Impact — Finalist</b>	2021
<b>Top Poster Award — European Congress of Clinical Microbiology &amp; Infectious Diseases</b>	2021
<b>IPAA Victoria Leadership in the Public Sector Awards — Finalist</b>	2021
<b>Best PhD Student Presentation – PRISM<sup>2</sup> Annual Conference</b>	2017
<b>Applied Probability Trust Prize for best Applied Mathematics Postgraduate Thesis</b>	2016
<b>Australian Postgraduate Award</b>	2015
<b>Dean’s Commendation for Thesis Excellence</b>	2015

## **Academic Service & Community Engagement**

<b>Equity, Diversity &amp; Social Inclusion Committee</b> Department representative	2024 –
<b>SPECTRUM Annual Meeting</b> Organising committee	2024
<b>SPARK Short Course in Mathematical Diseases Modelling — OUCRU</b> Facilitator	2023
<b>Maths in Industry Study Group — NSW Health</b> Moderator	2023
<b>WOMBAT Communicating with Data Workshop</b> Organising Committee	2023
<b>Australian and New Zealand Industrial and Applied Mathematics Executive Committee</b> Treasurer	2022–
<b>Australian and New Zealand Industrial and Applied Mathematics Executive Committee</b> Early Career Representative	2021–2022
<b>SPECTRUM-SPARK Early Career Researcher Committee</b> Chair	2022–
<b>SPARK Short Course in Mathematical Diseases Modelling – Mahidol University</b> Facilitator	2022
<b>Research Tools Workshop in R</b> Facilitator	2022

<b>Mathematical Biology Special Interest Group</b> Treasurer	2019–2022
<b>ANZIAM 2021 Conference</b> Organising Committee (Treasurer)	2020–2021
<b>Computational Biology Research Initiative</b> – The University of Melbourne Postgraduate Representative	2017
<b>Computational Biology Postgraduate Sports Group</b> – The University of Melbourne Secretary	2017–2018
<b>Maths in Industry Study Group</b> Participant	2017, 2018, 2019
<b>The ConocoPhilips Science Experience</b> – The University of Melbourne Activity Organiser	2016–2018
<b>Mathematicians in Schools</b> – CSIRO Project Supervisor/Mentor	2016–2018
<b>Reviewer</b> PLoS Computational Biology; Scientific Reports; Journal of Applied Mathematics; Journal of Statistical Software; Epidemiology & Infection; Mathematics; Medical Journal of Australia; International Tropical Health; Journal of Antimicrobial Resistance; The R Journal	

## Professional Memberships

<b>Australian and New Zealand Industrial and Applied Mathematics</b> Including the Mathematical Biology Special Interest Group	2015–
<b>Australian Mathematics Society</b>	2015–