Melbourne School of Population & Global Health
207 Bouverie Street
The University of Melbourne
Parkville, VIC, 3010

Phone: +61 3 8344 9430
ORCID: 0000-0002-4568-2012
rgmoss@unimelb.edu.au
https://robmoss.github.io/

Robert Moss
2025–12–17

Current position

Senior Research Fellow
Melbourne School of Population and Global Health, University of Melbourne.

Statement

Rob Moss is a mathematical biologist and epidemiologist, who uses scenario modelling to inform national pandemic preparedness and response plans, and develops epidemic forecasting methods in collaboration with public health staff across Australia. He is a member of Australia's National Respiratory Infections Surveillance Committee (NRISC) and the WHO Influenza Incidence Analytics Group. Despite holding research-only appointments since obtaining his PhD, Rob is actively involved in curriculum development and delivery activities, develops interactive teaching tools, and regularly engages with audiences outside of the academic classroom.

Specialisation

Mathematical biology; Mathematical epidemiology; Infectious disease dynamics; Epidemic forecasting; Public health; Pandemic preparedness and response.

Education

University of Melbourne, Australia

2005–2008 PhD, Department of Computer Science and Software Engineering.
- Stawell Scholarship recipient, 2008
- Australian Postgraduate Award

2000–2004 BSc(Pure Maths), BE(Software, First Class Honours)

Appointments

University of Melbourne, Australia

Sep 2019– **Senior Research Fellow**, Melbourne School of Population and Global Health.
Aug 2014–Aug 2019 **Research Fellow**, Melbourne School of Population and Global Health.
Feb 2016–Dec 2017 **Academic Convener** (0.2 FTE), Data, Systems and Society Research Network.

Duke University, USA

Oct 2012–Jul 2014 **Visiting Assistant Professor**, Department of Mathematics.

CNRS, France

Jul 2010–Aug 2012 **Postdoc**, IR4M CNRS UMR8081, Université Paris-Sud.

University of Melbourne, Australia

Aug 2009–Jul 2010 **Research Officer**, Melbourne School of Population and Global Health.

References

Available upon request

Awards

Net amount: $228,655

Dec 2024 **Moss R.** *Particle filters for Python.* Venables Award for New Developers of Open Source Software for Data Analytics; Statistical Society of Australia. **Funding:** $2,500

Sep 2024 **Moss R.** *Trish Campbell Good Citizen Award.* Annual Conference; SPECTRUM NHMRC CRE.

Dec 2022	McCaw JM, Shearer FM, Price DJ, **Moss R**, Tobin R, Golding N, Ryan G, Hao A, Babu A, Duncan D. *COVID-19 national situational assessment.* Best Research With Significant Policy Impact Award; Melbourne School of Population and Global Health, University of Melbourne.
Jun 2021	McVernon J, McCaw JM, Geard N, **Moss R**, Shearer FM, Price DJ, Campbell PT, Conway E, Baker CM, Zachreson C, Walker J, Tellioglu N, Golding N, Chisholm RH. *Modelling to support preparedness and response to COVID-19 in Australia and the Western Pacific Region.* Award for Excellence in Engagement: Public Value; Faculty of Medicine, Dentistry, and Health Sciences, University of Melbourne.
Nov 2020	McVernon J, McCaw JM, Geard N, **Moss R**, Shearer FM, Price DJ, Campbell PT, Conway E, Baker CM, Tellioglu N, Golding N, Chisholm RH. *Modelling for pandemic preparedness and response.* Award for Excellence in Engagement: Partnerships; Faculty of Medicine, Dentistry, and Health Sciences, University of Melbourne. **Funding:** $5,000
2020–2021	**Moss R**. *Improving indicators of influenza impact.* Research Fellowship; Australian Partnership for Preparedness Research on Infectious Disease Emergencies (APPRISE) NHMRC Centres of Research Excellence. **Funding:** $141,155
Nov 2019	**Moss R**. Knowledge Transfer Award: Category 1, Open award for excellence in knowledge transfer achievements; Melbourne School of Population and Global Health, University of Melbourne.
May 2018	Lau T, Skvortsov A, Ristic B, Gailis R, Dawson P, McCaw JM, **Moss R**. *CIVSEC 2018 National Innovation Award for Civil Security.* Civil Security Congress and Exposition, Industry Defence and Security Australia Ltd.
May 2018	Lau T, Skvortsov A, Ristic B, Gailis R, Dawson P, McCaw JM, **Moss R**. *CIVSEC 2018 Innovation Award for Disaster Relief, Emergency Management and Humanitarian Services.* Civil Security Congress and Exposition, Industry Defence and Security Australia Ltd.
Sep 2010	**Moss R**. *The Origins of Renal Physiology.* An annual one-week course for renal fellows, at Mount Desert Island Biologic Laboratories, USA; American Society of Nephrology.
Aug 2008	**Moss R**. Stawell Scholarship; Melbourne School of Engineering. **Funding:** $10,000
Jan 2005–Jun 2008	**Moss R**. Australian Postgraduate Award; Australian Federal Government. **Funding:** $70,000

Grants	**Net amount: $7,216,695**
Dec 2023	McVernon J, Campbell PT, Price DJ, Marcato A, Carville K, Spirkoska V, **Moss R**, Carvalho N, Wang Y, Vu M, Dalziel K. *National Immunisation Program RSV Modelling Work.* Research contract; Australian Government Department of Health. **Funding:** $91,988
Dec 2023	McVernon J, Dalziel K, Carvalho N, Campbell PT, Price DJ, Baker CM, **Moss R**, Carville K, Le TP, Wang Y, Vu M, Marcato A, Spirkoska V, Abell I. *Health Technology Assessment and Support services for mRNA vaccines.* Research contract; Australian Government Department of Health. **Funding:** $1,862,031
Apr 2023	Dawson P, Teo M, Adekunle A, McCaw JM, Shearer FM, **Moss R**. *EpiDefend: Disease Early Warning Tool.* Research contract; Defence Materials Technology Centre. **Funding:** $206,340
Apr 2023	Dawson P, Teo M, Adekunle A, McCaw JM, Shearer FM, **Moss R**, Golding N. *Biosurveillance Decision Support System Development.* Research contract; Defence Materials Technology Centre. **Funding:** $649,020

Sep 2022	**Moss R**, Conway E, Ong J. *Enabling reproducible research with peer code review.* Seed funding; SPECTRUM NHMRC Centres of Research Excellence and SPARK DFAT Consortium. **Funding:** $8,500
Apr 2021	McCaw JM, McVernon J, Golding N, **Moss R**, Shearer F, Price DJ, Ross JV, Hyndman R, Dawson P, Baker C, Conway E, Geard N, Lydeamore M, Wood J, Zachreson C. *Situational awareness modelling to support Australia's transition to 'COVID-normal'.* Research contract; Australian Government Department of Health. **Funding:** $654,382
Oct 2020	McVernon J, McCaw J, Shearer F, Price DJ, **Moss R**, Baker C, Conway E, Geard N, Chisholm R, Hyndman R. *Modelling COVID-19 epidemic trajectory and localised outbreak response in French Polynesia.* Research contract; WHO WPRO. **Funding:** $137,260
Sep 2020	McCaw JM, McVernon J, Dawson P, **Moss R**, Wood J, Shearer F, Price DJ. *Continued situational assessment of the COVID-19 epidemic in Australia.* Research contract; Australian Government Department of Health. **Funding:** $737,960
Apr 2020	McVernon J, et al. *Supporting public health preparedness and response for COVID-19 in PNG.* Research contract; Australian Government Department of Foreign Affairs and Trade. **Funding:** $157,236
Apr 2020	McVernon J, et al. *Model-based risk assessment and scenario analysis for COVID-19 in the SEA and WP regions.* Research contract; Australian Government Department of Foreign Affairs and Trade. **Funding:** $75,082
Apr 2020	Tomko M, Geard N, **Moss R**. *Modelling the spatio-temporal dynamics of Australian stay-at-home population for epidemiological applications (COVID-19).* Platform Interdisciplinary Grant; Melbourne School of Engineering. **Funding:** $30,000
Mar 2020	McCaw JM, McVernon J, Dawson P, **Moss R**, Wood J, Shearer F, Price DJ. *Situational awareness analytics to support the COVID-19 response.* Research contract; Australian Government Department of Health. **Funding:** $766,765
Feb 2020	McVernon J, McCaw JM, McBryde E, Glass K, Geard N, **Moss R**, Black A. *Provision of technical support and preparedness modelling of COVID-19.* Research contract; Australian Government Department of Health. **Funding:** $446,690
Jun 2018	McVernon J, **Moss R**, Carvalho N, Herz J, Herry G, Sullivan SG. *Evidence base to inform policy development regarding future long-term supply arrangements for pandemic influenza vaccine.* Research contract; Australian Government Department of Health. **Funding:** $212,030
Feb 2018	McVernon J, Fielding J, Macartney K, Beard F, Subbarao K, Sullivan SG, Dawson A, Gilbert L, Massey P, Miller A, Durrheim D, Crooks K, McCaw JM, **Moss R**. *Investigate and model initial pandemic influenza vaccination target groups.* Research contract; Australian Government Department of Health. **Funding:** $181,256
Oct 2016	Mitchell L[†], **Moss R**[†]. *Infectious Disease Forecasting Workshop.* Seed funding; Policy relevant infectious disease simulation and mathematical modelling (PRISM²) NHMRC Centres of Research Excellence. **Funding:** $3,300
Aug 2016	McCaw JM, **Moss R**. *Epidemic modelling for infectious diseases forecast.* Research contract; Defence Science and Technology Group. **Funding:** $384,550
Jul 2016	Geard N, House T, McVernon J, McCaw JM, **Moss R**, Kinyanjui T, Everett M, Ahmad S. *New approaches to understanding contact behaviour for infectious disease transmission.* Melbourne-Manchester Research Fund; The University of Melbourne and The University of Manchester. **Funding:** $9,000
Jun 2016	Tomko M, **Moss R**, Geard N. *Evaluation of large-scale tracking data for epidemiological forecasting of influenza epidemics.* Seed funding; Melbourne Networked Society Institute. **Funding:** $45,000

Feb 2016	McVernon J, McCaw JM, **Moss R**, Hunter A, Fielding JE, Glass K. *Model infection control with personal protective equipment during an influenza pandemic.* Research contract; Australian Government Department of Health. **Funding:** $40,977
Feb 2016	McVernon J, McCaw JM, **Moss R**, Hunter A, Fielding JE, Glass K. *Review models of health care delivery in an influenza pandemic.* Research contract; Australian Government Department of Health. **Funding:** $126,558
Jun 2015	McVernon J, McCaw JM, **Moss R**, Cheng A, Hurt A. *Review of the current evidence on the use of neuraminidase inhibitors held in the National Medical Stockpile, in a pandemic.* Research contract; Australian Government Department of Health. **Funding:** $90,770
Oct 2014	McBryde E, Marshall C, Doan T, Ragonnet R, Peach E, McCaw JM, McVernon J, **Moss R**, Geard N, Hort K, Black J, Madden J, Tran N, Giesecke J, Harris T. *Risk and economic implications of importation, transmission and established epidemic of Ebola in the Asia-Pacific Region.* Research contract; Australian Government Department of Foreign Affairs and Trade. **Funding:** $300,000

Other funding	**Net amount: $19,241**
Oct 2020	**Moss R.** *Epidemiological forecasting of infectious disease for public health.* Invited speaker travel funding; The Royal Society, Buckinghamshire. **Funding:** $2,160 (1100 GBP)
Oct 2019	**Moss R.** Postdoctoral Researcher and PhD Student Funding Scheme; Policy relevant infectious disease simulation and mathematical modelling (PRISM²) NHMRC Centres of Research Excellence. **Funding:** $760
Aug 2019	**Moss R.** Invited speaker travel funding; Options for the Control of Influenza X, Singapore. **Funding:** $1,501 (1400 SGD)
Aug 2019	**Moss R.** Postdoctoral Researcher and PhD Student Funding Scheme; Policy relevant infectious disease simulation and mathematical modelling (PRISM²) NHMRC Centres of Research Excellence. **Funding:** $1,733
Feb 2019	**Moss R.** Postdoctoral Researcher and PhD Student Funding Scheme; Policy relevant infectious disease simulation and mathematical modelling (PRISM²) NHMRC Centres of Research Excellence. **Funding:** $2,221
Nov 2018	**Moss R.** *Using influenza data for severity assessment.* Invited speaker travel funding; World Health Organization, Geneva. **Funding:** $3,344 (2537 USD)
Aug 2017	**Moss R.** Winner: Best Postdoctoral Presentation; Policy relevant infectious disease simulation and mathematical modelling (PRISM²) NHMRC Centres of Research Excellence. **Funding:** $2,000
Jan 2017	**Moss R.** Postdoctoral Researcher and PhD Student Funding Scheme; Policy relevant infectious disease simulation and mathematical modelling (PRISM²) NHMRC Centres of Research Excellence. **Funding:** $1,847
Nov 2015	**Moss R.** Postdoctoral Researcher and PhD Student Funding Scheme; Policy relevant infectious disease simulation and mathematical modelling (PRISM²) NHMRC Centres of Research Excellence. **Funding:** $3,675

Publications	*Peer-reviewed journal articles*	*metrics: Semantic Scholar & Scimago*
46. preprint	**Moss R**✉, Tobin RJ, O'Hara-Wild M, Adekunle AI, Liu D, South T, Morris DJ, Ryan GE, Hao T, Babu A, Senior KL, Wood JG, Golding N, Ross JV, Dawson P, Hyndman RJ, Price DJ[†], McCaw JM[†], Shearer FM[†]. "Ensemble forecasts of COVID-19 activity to support Australia's pandemic response: 2020-22". **Citations:** 0	

45. preprint Carlin JB[†][✉], Marcato AJ[†], Wang Y[†], **Moss R**, Carville KS, Chen X, Oliver VL, Spirkoska V, Campbell PT, Price DJ, Carvalho N[†], McVernon J[†]. "Cost-effectiveness of immunising interventions to reduce respiratory syncytial virus disease burden in infants in Australia".
Citations: 0

44. preprint Tellioglu N, Price DJ, Chen X, Spirkoska V, Wang Y, **Moss R**, Carvalho N, Carville K, Campbell PT, McVernon J. "A flexible agent-based modelling framework of multi-serotype pneumococcal carriage to evaluate vaccine strategies in large populations".
Citations: 0

43. preprint **Moss R**[†], Dini S[†], Kho S, Barber BE, Buffet PA, Rajasekhar M, Price DJ, Anstey NA[†][✉], Simpson JA[†][✉]. "The role of the spleen in red blood cell loss caused by malaria: a mathematical model".
Citations: 0

42. preprint Germano DPJ[†], Zarebski AE[†], Hautphenne S, **Moss R**, Flegg JA, Flegg MB. "Jump-Switch-Flow: hybrid stochastic-deterministic solutions of compartmental models".
Citations: 0

41. preprint Zarebski AE[✉], **Moss R**, McCaw JM. "A sub-exponential branching process to study early epidemic dynamics with application to Ebola".
Citations: 0

40. Aug 2025 Tobin RJ[✉], Walker CR, **Moss R**, McCaw JM, Price DJ[†], Shearer FM[†][✉]. "A modular approach to forecasting COVID-19 hospital bed occupancy". *Communications Medicine* 5: 349.
Citations: 0

39. Feb 2025 Watson JA[†][✉], Mehdipour P[†], **Moss R**[†], Jittamala P, Zaloumis SG, Price DJ, Dini S, Hanboonkunupakarn B, Leungsinsiri P, Poovorawan K, Chotivanich K, Bancone G, Commons RJ, Day NPJ, Pukrittayakamee S, Taylor WRJ, White NJ[✉], Simpson JA. "Within-host modeling of primaquine-induced hemolysis in hemizygote glucose-6-phosphate dehydrogenase deficient healthy volunteers". *Antimicrob Agents Chemother* 69(4): e01549-24.
Citations: 0 **Journal:** #37 in Infectious Diseases (Q1)

38. Jul 2024 Shearer FM[✉], Edwards L, Kirk M, Eales O, Golding N, Hassall J, Liu B, Lydeamore M, Miller C, **Moss R**, Price DJ, Ryan GE, Sullivan SG, Tobin R, Ward K, Kaldor J, Cheng AC, Wood J, McCaw JM. "Opportunities to strengthen respiratory virus surveillance systems in Australia: lessons learned from the COVID-19 response". *Commun Dis Intell* 48: 47.
Citations: 0

37. Apr 2024 **Moss R**[✉]. "pypfilt: a particle filter for Python". *Journal of Open Source Software* 9(96): 6276.
Citations: 0

36. Sep 2023 Pendrey CGA[✉], Strachan J, Peck H, Aziz A, Moselen J, **Moss R**, Rahaman MR, Barr IG, Subbarao K, Sullivan SG. "The re-emergence of influenza following the COVID-19 pandemic in Victoria, Australia". *Eurosurveillance* 28(37): 2300118.
Citations: 0 **Journal:** #13 in Epidemiology (Q1)

35. May 2023 **Moss R**[✉], Price DJ, Golding N, Dawson P, McVernon J, Hyndman RJ, Shearer FM, McCaw JM. "Forecasting COVID-19 activity in Australia to support pandemic response: May to October 2020". *Scientific Reports* 13: 8763.
Citations: 9 **Journal:** #23 in Multidisciplinary (Q1)

34. Feb 2022   Baker CM✉, Campbell PT, Chades I, Dean AJ, Hester SM, Holden MH, Mc-Caw JM, McVernon J, **Moss R**, Shearer FM, Possingham HP. "From climate change to pandemics: decision science can help scientists have impact". *Frontiers in Ecology and Evolution* 10: 792749.
Citations: 11   **Journal:** #98 in Ecology (Q1)

33. Feb 2022   **Moss R**✉. "Commentary on "Transparent modeling of influenza incidence": Because the model said so". *International Journal of Forecasting* 38: 620–621.
Invited commentary article.
Citations: 2   **Journal:** #33 in Business and International Mgmt (Q1)

32. Sep 2021   Shearer FM✉, **Moss R**, Price DJ, Zarebski AE, Ballard PG, McVernon J, Ross JV, McCaw JM. "Development of an influenza pandemic decision support tool linking situational analytics to national response policy". *Epidemics* 36: 100478.
Citations: 4   **Journal:** #106 in Infectious Diseases (Q2)

31. Jan 2021   Sullivan SG✉, Fielding JE, Beard F, Macartney K, Williams JH, Dawson A, Gilbert GL, Massey P, Crooks K, **Moss R**, McCaw JM, McVernon J. "Constructing an ethical framework for priority allocation of pandemic vaccines". *Vaccine* 39(5): 797–804.
Citations: 8   **Journal:** #48 in Infectious Diseases (Q1)

30. Jan 2021   Degeling C✉, Williams JH, Carter SM, **Moss R**, Massey P, Brown D, Gilbert GL, Shih P, Braunack-Mayer A, Crooks K, McVernon J. "Priority allocation of pandemic influenza vaccines in Australia - recommendations of 3 Community Juries". *Vaccine* 39(2): 255–262.
Citations: 14   **Journal:** #48 in Infectious Diseases (Q1)

29. Jan 2021   Nation ML, **Moss R**, Spittal MJ, Kotsimbos T, Kelly PM, Cheng AC✉. "Influenza vaccine effectiveness against influenza-related mortality in Australian hospitalized patients: a propensity score analysis". *Clin Infect Dis* 72(1): 99–107.
Citations: 11   **Journal:** #13 in Infectious Diseases (Q1)

28. Dec 2020   **Moss R**, Wood J, Brown D, Shearer FM, Black AJ, Cheng AC, McCaw JM, McVernon J✉. "Coronavirus Disease Model to Inform Transmission Reducing Measures and Health System Preparedness, Australia". *Emerg Infect Dis* 26(12): 2844–2853.
Citations: 96   **Journal:** #22 in Epidemiology (Q1)

27. Oct 2020   Blakely T✉, **Moss R**, Collins J, Mizdrak A, Carvalho N, Wilson N, Geard N, Flaxman A. "Proportional multistate lifetable modelling of preventive interventions: concepts, code and worked examples". *Int J Epidemiol* 49(5): 1624–1636.
Citations: 26   **Journal:** #10 in Epidemiology (Q1)

26. Sep 2020   Alahmadi A[†], Belet B[†], Black AJ[†], Cromer D[†], Flegg JA[†]✉, House T[†], Jayasundara P[†], Keith JM[†], McCaw JM[†], **Moss R**[†], Ross JV[†], Shearer FM[†], Tun STT[†], Walker J[†], White L[†], Whyte JM[†], Yan AWC[†], Zarebski AE[†]. "Influencing public health policy with data-informed mathematical models of infectious diseases: Recent developments and new challenges". *Epidemics* 32: 100393.
Citations: 37   **Journal:** #106 in Infectious Diseases (Q2)

25. Aug 2020   Price DJ✉, Shearer FM✉, Meehan MT, McBryde ES, **Moss R**, Golding N, Conway EJ, Dawson P, Cromer D, Wood J, Abbott S, McVernon J, McCaw JM. "Early analysis of the Australian COVID-19 epidemic". *eLife* 9: e58785.
Citations: 78   **Journal:** #71 in Medicine (miscellaneous) (Q1)

24. Mar 2020   Biggerstaff M[†], Dahlgren FS[†], Fitzner J[†], George D[†], Hammond A[†], Hall I[†], Haw D[†], Imai N[†], Johansson M[†], Kramer S[†], McCaw JM[†], **Moss R**[†], Pebody R[†], Read JM[†], Reed C[†], Reich NG[†], Riley S[†✉], Vandemaele K[†✉], Viboud C[†], Wu JT[†]. "Coordinating the real-time use of global influenza activity data for better public health planning". *Influenza Other Respir Viruses* 14(2): 105–110.
   Citations: 8   **Journal:** #26 in Infectious Diseases (Q1)

23. Jan 2020   Shearer FM, **Moss R**, McVernon J, Ross JV, McCaw JM✉. "Infectious disease pandemic planning and response: Incorporating decision analysis". *PLoS Med* 17: e1003018.
   Citations: 82   **Journal:** #46 in Medicine (miscellaneous) (Q1)

22. Jun 2019   Cuningham W✉, Geard N, Fielding JE, Braat S, Madhi SA, Nunes MC, Christian LM, Lin S-Y, Lee C-N, Yamaguchi K, Bisgaard H, Chawes B, Chao A-S, Blanchard-Rohner G, Schlaudecker EP, Fisher BM, McVernon J, **Moss R**. "Optimal Timing of Influenza Vaccine during Pregnancy: a Systematic Review and Meta-Analysis". *Influenza Other Respir Viruses* 13(5): 438–452.
   Citations: 58   **Journal:** #26 in Infectious Diseases (Q1)

21. May 2019   **Moss R**✉, Naghizade E, Tomko M, Geard N. "What can urban mobility data reveal about the spatial distribution of infection in a single city?". *BMC Public Health* 19: 656.
   Citations: 27   **Journal:** #82 in Public, Environ, and Occup Health (Q1)

20. Mar 2019   **Moss R**✉, Zarebski AE, Dawson P, Franklin LJ, Birrell FA, McCaw JM. "Anatomy of a seasonal influenza epidemic forecast". *Commun Dis Intell* 43: 1–14.
   Citations: 11

19. Jan 2019   **Moss R**✉, Zarebski AE, Carlson SJ, McCaw JM. "Accounting for healthcare-seeking behaviours and testing practices in real-time influenza forecasts". *Trop Med Infect Dis* 4(1): 12. **Invited manuscript for special issue**.
   Citations: 32   **Journal:** #112 in Infectious Diseases (Q2)

18. Feb 2018   **Moss R**✉, Fielding JE, Stephens N, McVernon J, Dawson P, McCaw JM. "Epidemic forecasts as a tool for public health: interpretation and (re)calibration". *Aust N Z J Public Health* 42(1): 69–76.
   Citations: 24   **Journal:** #194 in Public, Environ, and Occup Health (Q2)

17. Feb 2017   Zarebski AE, Dawson P, McCaw JM, **Moss R**✉. "Model selection for seasonal influenza forecasting". *Infect Dis Mod* 2(1): 56–70.
   Citations: 16   **Journal:** #116 in Health Policy (Q2)

16. Jan 2017   **Moss R**✉, Zarebski AE, Dawson P, McCaw JM. "Retrospective forecasting of the 2010–2014 Melbourne influenza seasons using multiple surveillance systems". *Epidemiol Infect* 145(1): 156–169.
   Citations: 29   **Journal:** #140 in Infectious Diseases (Q2)

15. Oct 2016   **Moss R**✉, McCaw JM, Cheng AC, Hurt AC, McVernon J. "Reducing disease burden in an influenza pandemic by targeted delivery of neuraminidase inhibitors: mathematical models in the Australian context". *BMC Infect Dis* 16(1): 552.
   Citations: 13   **Journal:** #78 in Infectious Diseases (Q1)

14. Sep 2016   **Moss R**, Hickson RI, McVernon J, McCaw JM, Hort K, Black J, Madden JR, Tran NH, McBryde ES, Geard N✉. "Model-informed risk assessment and decision making for an emerging infectious disease in the Asia-Pacific region". *PLoS Negl Trop Dis* 10(9): e0005018.
   Citations: 13   **Journal:** #39 in Infectious Diseases (Q1)

13. Jul 2016   **Moss R**✉, Zarebski AE, Dawson P, McCaw JM. "Forecasting influenza outbreak dynamics in Melbourne from Internet search query surveillance data". *Influenza Other Respir Viruses* 10(4): 314–323.
   Citations: 41   **Journal:** #26 in Infectious Diseases (Q1)

12. Aug 2015   Cao P, Yan AWC, Heffernan JM, Petrie S, **Moss R**, Carolan LA, Guarnaccia TA, Kelso A, Barr IG, McVernon J, Laurie KL, McCaw JM✉. "Innate immunity and the inter-exposure interval determine the dynamics of secondary influenza virus infection and explain observed viral hierarchies". *PLoS Comp Biol* 11(8): e1004334.
Citations: 59   **Journal:** #19 in Modelling and Simulation (Q1)

11. May 2014   **Moss R**✉, Layton AT. "Dominant factors that govern pressure natriuresis in diuresis and antidiuresis: a mathematical model". *AJP Renal Physiol* 306(9): F952–F969.
Citations: 26   **Journal:** #36 in Physiology (Q1)

10. Jan 2014   **Moss R**✉, Thomas SR. "Hormonal regulation of salt and water excretion: a mathematical model of whole-kidney function and pressure-natriuresis". *AJP Renal Physiol* 306(2): F224–248. **Selected for an Editorial Focus article** (link).
Citations: 31   **Journal:** #36 in Physiology (Q1)

9. Dec 2012   Dafilis MP✉, **Moss R**, McVernon J, McCaw JM. "Drivers and consequences of influenza antiviral resistant-strain emergence in a capacity-constrained pandemic response". *Epidemics* 4(4): 219–226.
Citations: 6   **Journal:** #106 in Infectious Diseases (Q2)

8. Jun 2012   **Moss R**, Grosse T, Marchant I, Lassau N, Gueyffier F, Thomas SR✉. "Virtual Patients and Sensitivity Analysis of the Guyton Model of Blood Pressure Regulation: Towards Individualized Models of Whole-Body Physiology". *PLoS Comp Biol* 8(6): e1002571.
Citations: 27   **Journal:** #19 in Modelling and Simulation (Q1)

7. Apr 2012   Bolton KJ✉, McCaw JM, **Moss R**, Morris RS, Wang S, Burma A, Darma B, Narangerel D, Nymadawa P, McVernon J. "Likely effectiveness of pharmaceutical and non-pharmaceutical interventions for mitigating influenza virus transmission in Mongolia". *Bull WHO* 90(4): 264–271.
Citations: 34   **Journal:** #41 in Public, Environ, and Occup Health (Q1)

6. Oct 2011   Hernández AI✉, Le Rolle V, Ojeda D, Baconnier P, Fontecave-Jallon J, Guillaud F, Grosse T, **Moss R**, Hannaert P, Thomas SR. "Integration of detailed modules in a core model of body fluid homeostasis and blood pressure regulation". *Prog Biophys Mol Biol* 107(1): 169–182.
Citations: 29   **Journal:** #16 in Biophysics (Q1)

5. May 2011   McCaw JM✉, **Moss R**, McVernon J. "A decision support tool for evaluating the impact of a diagnostic-capacity and antiviral-delivery constrained intervention strategy on an influenza pandemic". *Influenza Other Respir Viruses* 5(Suppl. 1): 212–215.
Citations: 4   **Journal:** #26 in Infectious Diseases (Q1)

4. Feb 2011   **Moss R**✉, McCaw JM, McVernon J. "Diagnosis and Antiviral Intervention Strategies for Mitigating an Influenza Epidemic". *PLoS ONE* 6(2): e14505.
Citations: 25   **Journal:** #24 in Multidisciplinary (Q1)

3. Nov 2009   **Moss R**✉, Kazmierczak E, Kirley M, Harris PJ. "Discrete network models of interacting nephrons". *Physica D* 238(22): 2166–2176.
Citations: 3   **Journal:** #83 in Condensed Matter Physics (Q1)

2. May 2009   Harris PJ✉, Buyya R, Chu X, Kobialka T, Kazmierczak E, **Moss R**, Appelbe W, Hunter PJ, Thomas SR. "The Virtual Kidney: an e-Science interface and Grid Portal". *Phil Trans R Soc A* 367(1896): 2141–2159.
Citations: 8   **Journal:** #75 in Mathematics (miscellaneous) (Q1)

1. May 2009   **Moss R**, Kazmierczak E✉, Kirley M, Harris PJ. "A computational model for emergent dynamics in the kidney". *Phil Trans R Soc A* 367(1896): 2125–2140.
Citations: 12   **Journal:** #75 in Mathematics (miscellaneous) (Q1)

Government reports

13. Dec 2023   Shearer FM[†], Adekunle A[†], Dawson P[†], Golding N[†], Hao T[†], Hyndman RJ[†], **Moss R**[†], O'Hara-Wild M[†], Price DJ[†], Ryan G[†], Senior K[†], Tobin RJ[†], Wood J[†], McCaw JM[†]. "Series of 194 weekly COVID-19 epidemic situational assessment reports submitted to the Australian Government Department of Health Office of Health Protection from April 2020 to December 2023". Official orders for the provision of Situational Awareness Modelling for COVID-19 to the Office of Health Protection, Australian Government Department of Health.

12. Jun 2019   Degeling C, Williams JH, Massey P, Gilbert L, **Moss R**, Carter S, Braunack-Mayer A, Shih P, Crookes K, McVernon J. "Investigate and model initial pandemic influenza vaccination target groups". Reporting Deliverable 3 (Community Juries) to the Office of Health Protection, Australian Government Department of Health.

11. Sep 2018   Herry G, Herz J, **Moss R**, Carvalho N, Sullivan S, McVernon J. "Evidence base to inform policy development regarding future long-term supply arrangements for pandemic influenza vaccine". Reporting Deliverable (Phases 2 and 3, Modelling and cost-effectiveness of alternative vaccine supply models) to the Office of Health Protection, Australian Government Department of Health.

10. Jun 2018   McVernon J, Fielding JE, Macartney K, Beard F, Subbarao K, Sullivan SG, Williams JH, Dawson A, Gilbert L, Massey P, Miller A, Durrheim D, Crooks K, McCaw JM, **Moss R**. "Investigate and model initial pandemic influenza vaccine target groups". Reporting Deliverable 2 (Ethical Framework) to the Office of Health Protection, Australian Government Department of Health.

9. Apr 2018   McVernon J, Fielding JE, Macartney K, Beard F, Subbarao K, Sullivan SG, Dawson A, Gilbert L, Massey P, Miller A, Durrheim D, Crooks K, McCaw JM, **Moss R**. "Investigate and model initial pandemic influenza vaccine target groups". Reporting Deliverable 1 (Evidence Review) to the Office of Health Protection, Australian Government Department of Health.

8. May 2016   Hunter A, Fielding JE, **Moss R**, McVernon J, McCaw JM, Glass K. "Review models of health care delivery in an influenza pandemic". Reporting Deliverable 2 (Stakeholder Consultations) to the Office of Health Protection, Australian Government Department of Health.

7. May 2016   Hunter A, Fielding JE, **Moss R**, McVernon J, McCaw JM, Glass K. "Model infection control with personal protective equipment during an influenza pandemic". Reporting Deliverable 2 (Stakeholder Consultations) to the Office of Health Protection, Australian Government Department of Health.

6. Apr 2016   Hunter A, McVernon J, **Moss R**, McCaw JM, Fielding JE, Glass K. "Review models of health care delivery in an influenza pandemic". Reporting Deliverable 1 (Literature Review and Simulation Modelling) to the Office of Health Protection, Australian Government Department of Health.

5. Apr 2016   Hunter A, Fielding JE, **Moss R**, McVernon J, McCaw JM, Glass K. "Model infection control with personal protective equipment during an influenza pandemic". Reporting Deliverable 1 (Literature Review and Simulation Modelling) to the Office of Health Protection, Australian Government Department of Health.

4. Aug 2015   McCaw JM, **Moss R**, McVernon J, Cheng A. "Review current evidence on the use of neuraminidase inhibitors held in the National Medical Stockpile, in a pandemic". Reporting Deliverable 2 (Model Analysis) to the Office of Health Protection, Australian Government Department of Health.

3. Jun 2015 McCaw JM, **Moss R**, McVernon J, Cheng A. "Review current evidence on the use of neuraminidase inhibitors held in the National Medical Stockpile, in a pandemic". Reporting Deliverable 1 (Evidence Review) to the Office of Health Protection, Australian Government Department of Health.

2. Apr 2015 McBryde E, Marshall C, Doan T, Hickson R, Davis M, McCaw JM, McVernon J, **Moss R**, Geard N, Hort K, Black J, Madden J, Tran N, Giesecke J, Ragonnet R, Peach E, Harris T. "Risk of importation and economic consequences of Ebola in the Asia Pacific Region". Final report to the Department of Foreign Affairs and Trade.

1. Dec 2014 McBryde E, Marshall C, Doan T, Ragonnet R, Peach E, McCaw JM, McVernon J, **Moss R**, Geard N, Hort K, Black J, Madden J, Tran N, Giesecke J, Harris T. "Modelling of Ebola risk in the Asia Pacific region to inform policy strategy". Interim report to the Department of Foreign Affairs and Trade.

Book chapters

Jul 2020 Geard N[†], Giesecke JA[†], Madden JR[†], McBryde ES[†], **Moss R**[†], Tran NH[†]. "Modelling the economic impacts of epidemics in developing countries under alternative intervention strategies", in *Environmental Economics and Computable General Equilibrium Analysis*. Madden JR, Higano Y, Shibusawa H (eds), Springer.

Aug 2016 **Moss R**. "Model assumptions, structure and uncertainty", in *A User's Guide to Infectious Disease Modelling*. McVernon J, Wood J (eds), PRISM² CRE. ISBN: 978-0-7340-5303-9.

Other publications

Feb 2020 Geard N, McVernon J, **Moss R**, Shearer FM, McCaw JM, Black A, McBryde ES. "What maths can tell us about the spread of the new coronavirus", *Pursuit*

Apr 2019 Sullivan SG, **Moss R**. "We can't predict how bad this year's flu season will be but here's what we know so far", *The Conversation*

Jun 2016 McVernon J, Ross J, Glass K, Mitchell L, Geard N, **Moss R**. "Computing helps the study of infections on a global and local scale", *The Conversation*

Aug 2015 **Moss R**, McCaw JM, McVernon J. "Why predicting a flu outbreak is like betting on football or flipping a coin", *The Conversation*

Teaching *Lecturer*

2024 Guest Lecturer, Data Science Project Pt2, University of Melbourne

2024 Guest Lecturer, Our Planet Our Health II, University of Melbourne

2023 Guest Lecturer, Data Science Project Pt2, University of Melbourne

2020–2022 Guest Lecturer, Our Planet Our Health II, University of Melbourne

2019 Interviewee, Critical Thinking with Analytics, University of Melbourne

2018 Declarative Programming (Masters), University of Melbourne

2016,2017 Infectious Disease Modelling, University of Melbourne

2015,2016 Guest Lecturer, Mathematics for Biomedicine, University of Melbourne

2015 Advanced Modelling: Case Studies (Masters), University of Melbourne

2013 Multivariable Calculus, Duke University

Team Supervisor

2007–2008 Software Engineering Project, University of Melbourne

Tutor

2005–2008	Software Engineering Methods & Testing, University of Melbourne
2007	Computing Fundamentals A, University of Melbourne
2001–2004	Software Engineering Principles & Tools, University of Melbourne

Supervision

Research staff

2019–2020	Dr Patrick Andersen, Research Fellow
2018–2021	Dr Freya Shearer, Research Fellow

Students

2024–	Anh Pham, PhD
2024–2025	Yixuan Zhou, MBioStat
	Award: Head of School Excellence Award
2024	Courtney Turner, MSc (Epidemiology)
2019–2023	Parinaz Mehdipour, PhD; *Chair, advisory committee*
2019	Bradley Crammond, MBioStat
2019	Zhang Cheng, MIT
2018	Monica Nation, MPH
	Influenza vaccination and mortality in elderly patients
2018	Anabel Gil, MPH
	Seasonal influenza epidemics variation in the state of Victoria
2015–2019	Alexander Zarebski, PhD
	Quantitative Epidemiology: A Bayesian Perspective
2015	William Cuningham, MSc (Epidemiology)
	Defining optimal implementation strategies for antenatal influenza vaccination in temperate climates

Presentations

Invited Talks

Sep 2025	**Moss R**, Dawson P. "Early warning system for biothreats". *HSSA Webinar Series.* Health Security Systems Australia.
Aug 2025	**Moss R**, Price DJ. "Introduction to mathematical modelling: population level". *ACREME Methodology Webinar Series.* ACREME NHMRC CRE.
Aug 2024	**Moss R**. "Reproducible research: it takes a village". *Computational Sciences Methods Symposium.* The Peter Doherty Institute, Melbourne.
Mar 2023	**Moss R**. "Forecasting to inform the Australian COVID-19 response". *Epidemiological forecasting of infectious disease for public health.* The Royal Society, Buckinghamshire.
Feb 2023	**Moss R**. "Git is my lab book: 'baking in' reproducibility". *Toronto Conference on Reproducibility.* University of Toronto, Canada.
Nov 2022	Price DJ, **Moss R**. "Supporting Australia's COVID-19 response with probabilistic forecasts". *Forum Mathematics for Industry 2022.* La Trobe University, Melbourne.
Jun 2022	**Moss R**. "How has COVID-19 impacted our ability to forecast seasonal influenza?" *ADAPT for Flu: Real-world evidence surveillance policy summit.* Sydney.
Dec 2020	**Moss R**. "Flutracking and simulation models: who are our surveillance systems seeing?" Hunter New England Population Health, Newcastle.
Jul 2020	**Moss R**. Webinar, Australian Chapter of the International Society for Pharmacoeconomics and Outcomes Research.
Feb 2020	**Moss R**. "Seasonal influenza forecasting using multiple data sources". Hunter New England Population Health, Newcastle.

Nov 2019	**Moss R.** "Influenza surveillance: gaps between infection and detection". *Infection and Immunity Theme Retreat.* Murdoch Children's Research Institute, Melbourne.
Nov 2019	Degeling C, **Moss R.** *AHPPC face-to-face meeting.* Department of Health, Canberra.
Oct 2019	**Moss R.** "Forecasting in an unusual season: what can we learn from 2019?" *13th Australian Influenza Symposium.* Queensland University of Technology, Brisbane.
Oct 2019	Degeling C, **Moss R.** "Should we seek to protect the most vulnerable or maximise vaccine utility during an influenza pandemic? Participant perspectives from 3 citizens' juries". *CDNA face-to-face meeting.* Department of Health, Hobart.
Sep 2019	**Moss R.** "Impact of pandemic vaccine: model simulation results". *Presentation of expert evidence for Citizens Juries.* Australian Department of Health, Canberra.
Aug 2019	**Moss R.** "Building a forecasting capability for Australian public health". *Options for the Control of Influenza X.* Singapore.
May 2019	**Moss R.** "Seasonal influenza forecasting: models, data, and so many unknowns". *Respiratory Seminar.* The Peter Doherty Institute, Melbourne.
Feb 2019	**Moss R** et al. "Best use of a limited vaccine supply in a pandemic: what does 'best' actually mean?". *Vaccines in the 21st Century.* The Peter Doherty Institute, Melbourne.
Feb 2019	**Moss R** et al. "The mathematics of infectious disease epidemics". *The Melbourne Maths and Science Meetup.* Melbourne.
Nov 2018	**Moss R.** "Seasonal influenza forecasting for Australian cities". *WHO Meeting on Using Influenza Data for Severity Assessment.* Global Influenza Programme, World Health Organization, Geneva.
Oct 2018	**Moss R.** "Early epidemic situational awareness and epidemic forecasting". *Modelling Workshop, Indo-Pacific Centre for Health Security, Department of Foreign Affairs and Trade.* The Peter Doherty Institute, Melbourne.
Apr 2018	**Moss R**, Zarebski AE, McCaw JM. "Who watches the watchmen?". *Mathematics of Biological Systems Management Symposium.* University of Melbourne, Melbourne.
Nov 2017	**Moss R**, Zarebski AE, McCaw JM. "Epidemic forecasting: circulating strains, population immunity, and other headaches". *NHMRC Influenza Program (2014-19) annual retreat.* University of Melbourne, Melbourne.
Nov 2017	**Moss R**, Zarebski AE, McCaw JM. "Epidemic forecasts as a (potential) tool for public health". *12th Australian Influenza Symposium.* Peter Doherty Institute for Infection and Immunity, Melbourne.
Oct 2017	Tomko M, **Moss R**, Naghi Zadeh Kakhki E, Geard N. "Mapping Urban Mobility for Flu Forecasting". *Networked Society Symposium 2017.* University of Melbourne, Melbourne.
Aug 2016	**Moss R.** "Where did I come from? The facts of life without any nonsense and with illustrations". *MSoG Policy Labs: Interdisciplinary Ways of Working.* Melbourne School of Government, The University of Melbourne.
Jun 2016	McVernon J, Fielding J, **Moss R.** "Models of Health Care Delivery & Infection Control with PPE during an Influenza Pandemic – project outcomes". *Communicable Diseases Network Australia face-to-face meeting.* Australian Department of Health, Adelaide.
Nov 2015	**Moss R**, Zarebski AE, Dawson P, Lau T, McCaw JM. "Forecasting seasonal influenza epidemics in Australia (using mathematical models)". *National Influenza Surveillance Committee face-to-face meeting.* Australian Department of Health, Canberra.

Jul 2015	McVernon J, Cheng AC, McCaw JM, **Moss R**, Hurt AC. "Strategic distribution of NAIs in a pandemic – simulation modelling & international context". *Presentation of draft report.* Australian Department of Health, Canberra.
	• Presentation to Australia's Chief Medical Officer, Prof Chris Baggoley.
Jun 2015	**Moss R**, Zarebski AE, Dawson P, McCaw JM. "Epidemic forecasting from surveillance data via Bayesian estimation". *Communicable Diseases Network Australia Jurisdictional Executive Group.* Australian Department of Health, Melbourne.
Jun 2015	**Moss R**, Zarebski AE, Dawson P, McCaw JM. "Epidemic forecasting from surveillance data via Bayesian estimation". Quantitative & Applied Ecology Group, University of Melbourne.
May 2015	**Moss R**, Dawson P, McCaw JM. "Epidemic forecasting from surveillance data (using recursive Bayesian estimation)". *Infectious Diseases Epidemiology & Surveillance (IDEAS) meeting.* Victorian Department of Health & Human Services.
Apr 2015	**Moss R**. "Epidemic detection and forecasting from surveillance data via Bayesian estimation". *PRISM^2 NHMRC Centres of Research Excellence inaugural meeting.* The University of Melbourne.
Dec 2014	**Moss R**, Thomas SR, Layton AT. "Predicting hormonal regulation of renal function: a 5,000 piece jigsaw puzzle". Australia & New Zealand Mathematics Convention. The University of Melbourne.
May 2014	**Moss R**. "Regulation of renal function: building a detailed and coherent mathematical model". *Molecular to Systems Physiology.* Mathematical Biosciences Institute, Ohio State University.
Aug 2013	**Moss R**. "Mathematical modelling: hormonal regulation of water and salt excretion". Department of Biomedical Physiology and Kinesiology. Simon Frasier University, Vancouver.
Sep 2009	**Moss R**. "The Clinical Applications of Renal Modelling". Department of Nephrology, Austin Hospital, Melbourne.
Dec 2008	**Moss R**. "A computational model for studying emergent dynamics in the kidney". Laboratory IBISC, Université d'Evry Val d'Essonne, France.

Conferences

Sep 2025	Windecker SM, **Moss R**. "Piloting peer code review in a research consortium community of practice". *Research Software Asia Australia Conference 2025.* Australia (online).
Sep 2024	**Moss R**. "Reproducible Research: a Community of Practice". *SPECTRUM Annual Meeting 2024.* Byron Bay, Australia.
Feb 2023	**Moss R**. "Enabling reproducible research with peer code review". *SPECTRUM & SPARK Annual Meeting 2023.* Melbourne, Australia.
	• Winner: Best Figure in a Presentation.
Feb 2021	**Moss R**. "Informing Australia's COVID-19 response with probabilistic forecasts". *Australia & New Zealand Industrial & Applied Mathematics Conference.* Australia (online).
Feb 2020	**Moss R**. "Now-casting influenza impact with Bayesian evidence synthesis". *Australia & New Zealand Industrial & Applied Mathematics Conference.* Hunter Valley, Australia.

Nov 2019	**Moss R.** "Influencing public health decisions with influenza forecasts". *PRISM² Annual Conference.* University of Melbourne.
Nov 2019	**Moss R**, Dawson A, Fielding JE, Massey P, Sullivan SG, McCaw JM, McVernon J. "Pandemic influenza: what outcomes are achievable with a limited vaccine supply?". *Communicable Diseases Control Conference.* Canberra.
Feb 2019	**Moss R**, Zarebski AE, Carlson SJ, McCaw JM. "Real-time assessment and prediction of influenza severity". *Australia & New Zealand Industrial & Applied Mathematics Conference.* Nelson, New Zealand.
Aug 2018	**Moss R.** "Who watches the watchmen? Vol 2". *PRISM² International Conference.* Cairns, Australia.
Aug 2017	**Moss R**, Zarebski AE, Cope RC, Mitchell L. "Using non-specific rate data to estimate denominators for notifications data". *PRISM² Annual Conference.* University of Melbourne. • Winner: Best Postdoc Talk. **Funding:** $2,000.
Feb 2017	**Moss R**, Zarebski AE, McCaw JM. "Bayesian forecasting of seasonal influenza: putting prior knowledge into the prior". *Australia & New Zealand Industrial & Applied Mathematics Conference.* Hahndorf, South Australia.
Jan 2016	**Moss R**, McCaw JM, McVernon J, Cheng AC, Hurt AC. "Evaluating pandemic preparedness and intervention strategies subject to available healthcare capacity and clinical pathways: a modelling study". *Incidence, Severity, and Impact of Influenza 2016.* Institut Pasteur, Paris, France.
Feb 2015	**Moss R**, McCaw JM, Dawson P. "Epidemic detection and forecasting from surveillance data via Bayesian estimation". *Australia & New Zealand Industrial & Applied Mathematics Conference.* Gold Coast, Queensland.
May 2011	**Moss R**, Grosse T, Thomas SR. "La construction d'un modèle multi-agent du rein". *French Society of Theoretical Biology (presented in French).* Autrans, France.
Apr 2010	**Moss R**, McCaw JM, McVernon J, Wood J, McBryde E. *NSW Epidemiology Special Interest Group.* NSW Department of Health, Sydney.
Mar 2010	**Moss R**, McCaw JM, McVernon J, Wood J, McBryde E. *MISMS Oceania Regional Influenza Meeting.* Melbourne Business School, Melbourne.
Dec 2009	McCaw JM, McVernon J, Wood J, McBryde E, **Moss R.** "Strategies for Antiviral Usage: Modelling Diagnosis & Treatment". *NHMRC H1N1 workshop.* Canberra, ACT.
Sep 2008	**Moss R.** *UK e-Science 2008 All Hands Meeting.* University of Edinburgh, Scotland.
Jul 2007	**Moss R.** "A Preliminary Model for Studying the Interactions Between Nephrons". *Complex 07: 8th Asia-Pacific Complex Systems Conference.* Gold Coast, Queensland. • Winner: Best Talk in Track.
Feb 2007	**Moss R.** "A Preliminary Model for Studying the Interactions Between Nephrons". *The Kidney: Cellular, Tubular, and Vascular Physiology.* Mathematical Biosciences Institute, Ohio State University.

Seminars

May 2015	**Moss R**, Dawson P, McCaw JM. "Epidemic forecasting from surveillance data via Bayesian estimation". *Mathematical & Computational Biology Group.* University of Melbourne.
Sep 2014	**Moss R.** "Regulation of renal function: building a detailed and coherent mathematical model". *MathBio Interest Group.* University of Melbourne.
May 2009	**Moss R.** "Decoupled equations for studying complex systems". School of Mathematics and Statistics, University of Melbourne.
Aug 2008	**Moss R.** *PhD Completion Seminar.* Department of Computer Science and Software Engineering, University of Melbourne.

Posters

Nov 2019   **Moss R**, Zarebski AE, Carlson SJ, McCaw JM. "Behavioural insights into case notifications data: Flutracking and community-level surveillance". *Communicable Diseases Control Conference.* Canberra.

Aug 2019   **Moss R**, Zarebski AE, Carlson SJ, McCaw JM. "Improving epidemic forecasts with behavioural insights gained from community-level surveillance". *Options for the Control of Influenza X.* Singapore.

Aug 2019   **Moss R**, Dawson A, Fielding JE, Massey P, Sullivan SG, Williams J, McCaw JM, McVernon J. "Best use of a limited vaccine supply in a pandemic: what does 'best' actually mean?". *Options for the Control of Influenza X.* Singapore.

Dec 2015   **Moss R**, Zarebski AE, Dawson P, McCaw JM. "Forecasting influenza outbreak dynamics from metropolitan Melbourne surveillance data". *Epidemics 5: Fifth International Conference on Infectious Disease Dynamics.* Florida, USA.

Apr 2014   **Moss R**, Layton AT. "A dynamic mathematical model of water & solute excretion". *Experimental Biology 2014.* San Diego, USA.

Apr 2013   **Moss R**, Layton AT. "Modeling the effects on medullary blood flow regulation on pressure natriuresis". *Experimental Biology 2013.* Boston, USA.

Apr 2012   **Moss R**, Grosse T, Thomas SR. "Exploration of pressure-natriuresis mechanisms using a lumped, six-nephron whole-kidney model". *Experimental Biology 2012.* San Diego, USA.

Apr 2011   **Moss R**, Grosse T, LeRolle V, Hernandez A, Thomas SR. "Extended sensitivity analysis of the Guyton model of blood pressure regulation". *Experimental Biology 2011.* Washington, D.C., USA.

Sep 2010   Grosse T, **Moss R**, Bazin J, LeRolle V, Fontecave-Jallon J, Guillaud F, Hannaert P, Baconnier P, Hernandez A, Thomas SR. "Sensitivity analysis of the Guyton model of blood pressure regulation I: Global analysis of the whole model". *VPH 2010 Annual Conference.* Brussels, Belgium.

Professional Service	***Manuscript Reviewer***
	Acta Biotheoretica
	American Journal of Physiology – Renal Physiology
	Annals of Mathematics and Physics
	ANZIAM Journal
	BMC Infectious Diseases
	BMC Public Health
	Communicable Diseases Intelligence
	Communications Biology
	Epidemiology and Infection
	International Journal of Computers and Applications
	International Journal of Forecasting
	Involve, a Journal of Mathematics
	Journal of Open Source Software
	Journal of Pharmacokinetics and Pharmacodynamics
	Journal of the Royal Society: Interface
	Journal of the Royal Society: Interface Focus
	Mathematical Medicine & Biology
	Nature Communications
	Open Forum Infectious Diseases
	PLoS Computational Biology
	PLoS ONE
	Proceedings of the National Academy of Sciences
	Royal Society Open Science
	Royal Society Interface Focus
	Scientific Reports
	Wellcome Open Research
	External Referee
2021	Commonwealth Department of Health, Approach to Market: "Seasonal Influenza Surveillance through the Online FluTracking System Project".
	Grant Reviewer
2017, 2018	NHMRC Project Grants
2017	External scientific advisor, Project Grant: "In silico preclinical models for the preservation of renal organ in vivo & ex vivo" (3 labs, 9 investigators). French National Research Agency
	Thesis Examiner
2023	James Bender: GDSc
	Hierarchical Spatial Structure in Compartmental Epidemiological models
2023	Nooriyan Poonawala Lohani: PhD
	Machine Learning Algorithms for Forecasting Influenza-Like Illness Activity: Enhancing Surveillance in New Zealand
2022	David Wu: PhD
	Computational Methods for Epidemic Simulation, Inference and Uncertainty Quantification: Applications to Measles in Samoa and COVID-19 in Aotearoa New Zealand
	Event Organisation
Sep 2024	Research Training: "Introduction to Debugging" workshop. SPECTRUM Annual Meeting, Byron Bay, Australia.
Sep 2023	Treasurer, Organising Committee Member. Australasian Epidemiological Society Annual Meeting, Melbourne.

Feb 2023	Deputy Chair, Planning Committee. SPECTRUM & SPARK Annual Meeting, Cape Schank, Australia.
Feb 2020	TM Cherry Prize Committee. ANZIAM 2020 Conference, Hunter Valley, Australia.
Nov 2019	Prepared and delivered materials for PRISM^2 CRE workshop Communicable Diseases Control Conference 2019, Canberra.
Nov 2019	Session char, PRISM^2 Annual Conference University of Melbourne.
Sep 2019	Session chair: Imprinting, Sero-epidemiology, Age Profile Differences Options for the Control of Influenza X, Singapore.
Jun 2019	Prepared materials for PRISM^2 CRE workshop Global Health Security 2019, Sydney.
Mar 2019	Facilitator, Grand Challenges Workshop Computational Biology Research Initiative, University of Melbourne
Aug 2018	Workshop: Reproducible Research PRISM^2 International Conference, Cairns, Australia.
Nov 2017	Shaping the future workforce of digital research experts at Melbourne (3 separate workshops) University of Melbourne
Aug 2017	PRISM^2 Professional Development Workshop Treacy Centre, Melbourne
Jun 2017	PRISM^2 Infectious Disease Forecasting Workshop University of Melbourne
Jun 2017	PRISM^2 Modelling Literacy Workshop Communicable Diseases Control Conference (CDCC) Melbourne
Nov 2016	DSSRN Garage Sale University of Melbourne
Sep 2016	Data, Systems and Society Research Network (DSSRN) launch event University of Melbourne

Academic Service

Jun 2025	Level B Academic Confirmation and Promotions Panel Faculty of Medicine, Dentistry and Health Sciences
May 2025	Contributor, MSPGH Induction Framework MSPGH Equity, Diversity, and Inclusion Committee.
Sep 2024	Research Software Engineering (RSE) Leaders Forum Research Software Engineer Asia Australia Unconference
Jun 2024	Level B Academic Confirmation and Promotions Panel Faculty of Medicine, Dentistry and Health Sciences
Apr 2024	SHIMMER and SPARKLE Planning Day NHMRC Centres of Research Excellence & DFAT Consortium.
Jul 2023	Level B Academic Promotions Panel Faculty of Medicine, Dentistry and Health Sciences
Sep 2019	Planning Day Centre for Epidemiology and Biostatistics
May 2019	HPC/Cloud Compute Architectural Review Enterprise Architects, University of Melbourne
Nov 2018	Planning Day Melbourne School of Population and Global Health

Aug 2017	Discussion Paper: "Enhancing and retaining data science capability at the University of Melbourne". Data, Systems and Society Research Network.

External Engagement Events

Nov 2025	National Respiratory Infections Surveillance Committee face-to-face meeting Peter Doherty Institute, Melbourne.
Nov 2024	National Respiratory Infections Surveillance Committee face-to-face meeting Australian Department of Health, Canberra.
Nov 2023	National Influenza Surveillance Committee face-to-face meeting Australian Department of Health, Canberra.
Aug 2023	Public event: *Collaborate to Innovate Expo* Science Festival 2023, Science Gallery Melbourne.
Nov 2019	National Influenza Surveillance Committee face-to-face meeting Australian Department of Health, Canberra.
Nov 2019	Workshop: *Emerging Methods in Situational Assessment for Decision Support* Communicable Diseases Control Conference (CDCC), Canberra.
Oct-Nov 2019	Expert witness: *First Nations Community Panels: Prioritising and privileging First Nations voices in the decision-making about pandemic influenza vaccine allocation in Australia.* Tamworth, NSW; Cairns, Qld.
Jul 2019	Two-week workshop: *Influencing Public Health Policy with Data-Informed Mathematical Models of Infectious Diseases* MAThematical Research Institute (MATRIX), Creswick.
Jun 2019	Health Protection Blueprint Workshop Victorian Department of Health and Human Services.
Apr-May 2019	Expert witness: *A framework for prioritising pandemic influenza vaccines in Australia: views of Community Juries* (3 separate juries). Wollongong, NSW; Melbourne, Vic; Kalgoorlie-Boulder, WA.
Feb 2019	The Melbourne Maths and Science Meetup, Melbourne.
May 2018	Pandemic vaccination prioritisation and sequencing: Evidence and ethics workshop University of Sydney.
Apr 2018	Models of Care for Pandemic Influenza: Presentation & Discussion Victorian Department of Health and Human Services, Melbourne.
Jun 2017	PRISM^2 Modelling Literacy Workshop Communicable Diseases Control Conference (CDCC) Melbourne
Aug 2016	MSoG Policy Labs: *Interdisciplinary Ways of Working* Melbourne School of Government, The University of Melbourne.
Jun 2016	Communicable Diseases Network Australia face-to-face meeting Australian Department of Health, Adelaide.
Nov 2015	National Influenza Surveillance Committee face-to-face meeting Australian Department of Health, Canberra.
Oct 2015	PRISM^2 Policy Translation workshop *Improving the communication of scientific results to policy makers* Attendees included public servants from: • Australian Department of Defence • Australian Department of Foreign Affairs & Trade • Australian Department of Health Australian National University, Canberra

May 2015	Infectious Diseases Epidemiology & Surveillance (IDEAS) meeting. Victorian Department of Health & Human Services.

Media Contributions

Mar 2025	Interviewed in "Shaping Research Software: An Interview with Dr Alex Lee and Dr Rob Moss", *Australian Research Data Commons*.
Aug 2022	Quoted in "The COVID trend sparking optimism among epidemiologists", *The Age*.
Jun 2022	Quoted in "Testing rates, Covid and the lockdown effect: what's driving Australia's big flu season?", *The Guardian*.
Jul 2020	Quoted in "Why our second lockdown hasn't yet flattened the coronavirus curve", *The Age*.
Jul 2020	Quoted in "Could Melbourne's outbreak reach other Australian cities?", *Lifehacker*.
Apr 2020	Quoted in "Why You'll Need To Postpone Travel Plans For A While", *Lifehacker Australia*.
Mar 2020	Quoted in "Coronavirus: Sydney given hope as infections ease", *The Australian*.
May 2019	Recorded interview, RRR 102.7FM radio news.
May 2018	Approached for comment, news story for *Communications of the ACM*.
Mar 2018	Quoted in "Disease maps to predict the arrival of flu just as weather maps predict rain", *Australian Financial Review*.
Feb 2018	Contributed to, and quoted in, "Forecasting flu outbreaks", *Pursuit*. Also covered by Futurity and IT News.
Jan 2018	Approached for comment, news story for *Scientific American*.
Nov 2017	Quoted in "How Bad Will the Flu Season Get? Forecasters Are Competing to Figure it Out", *The Scientist*.
Nov 2016	Quoted in "Flu outbreaks are subject to humidity — not just heat", *Cosmos*.
Jul 2016	Quoted in "Defence scientists' bio attack detector could predict flu outbreaks", *The Herald Sun*.
Jun 2010	Mentioned in "Our medical future", *Voice*, University of Melbourne.

Committees

Feb 2025–	NRISC Working Group on Epidemic Thresholds
Jan 2025–	MSPGH Equity, Diversity, and Inclusion Committee.
Nov 2024–	Member, National Respiratory Infections Surveillance Committee Commonwealth Department of Health
Mar 2024–	MSPGH Induction Working Group
Jun 2023-Dec 2024	MSPGH Culture Committee
Oct 2022-Nov 2024	Member, National Influenza Surveillance Committee Commonwealth Department of Health
Feb 2020–	Visible Research Software Interest Group
Jun 2019–	National Immunisation Program (NIP) Vaccine Evaluations Panel Commonwealth Department of Health
May 2019-Oct 2022	Observer, National Influenza Surveillance Committee Commonwealth Department of Health
Dec 2018–	Large Scale Computing Expertise Group
Jan 2018–	MSPGH Research Computing Working Group
Jan 2018–	WHO Influenza Incidence Analytics Group
Feb 2016-Dec 2017	Data, Systems and Society Research Network

Professional Courses

Aug 2025	Gahgook Indigenous Cultural Education Program. University of Melbourne.
May 2024	Trans-Affirming Workplaces. Diversity & Inclusion team, University of Melbourne.
Jun 2022	Respectful Graduate Research Supervisor Development. Faculty of Medicine, Dentistry, and Health Sciences, University of Melbourne.
Jun 2022	Mental Health First Aid Training. Faculty of Medicine, Dentistry, and Health Sciences, University of Melbourne.
May-Nov 2019	Mid-career staff mentoring program. Faculty of Medicine, Dentistry, and Health Sciences, University of Melbourne.
Oct 2019	Early-career staff leadership program. Faculty of Medicine, Dentistry, and Health Sciences, University of Melbourne.
Feb 2019	Advanced Social Media (Melbourne Centre for the Study of Higher Education)
Oct 2016	Social Media: Theory (Melbourne Centre for the Study of Higher Education)
Oct 2016	Social Media: Practice (Melbourne Centre for the Study of Higher Education)
Apr 2016	Writing Opinion Pieces (Melbourne Centre for the Study of Higher Education)

Affiliations

2016	Melbourne School of Government Policy Labs
2014–	Australian Mathematical Society (AMS)
2014–	Australia & New Zealand Industrial and Applied Mathematics (ANZIAM)

Research Software Tools/Packages

Git is my lab book: Computational research training materials.

> Creative Commons Attribution-ShareAlike 4.0 International license.

pypfilt: bootstrap particle filter package for Python.

> BSD 3-Clause license, available in the Python Package Index (PyPI).

epifx: epidemic forecasting package for Python.

> BSD 3-Clause license, available in the Python Package Index (PyPI).

episcen: Epidemic scenario modelling for Python.

> BSD 3-Clause license, available in the Python Package Index (PyPI).

lhs: Latin hypercube sampler for Python.

> BSD 3-Clause license, available in the Python Package Index (PyPI).

parq: A multi-process job queue for Python.

> BSD 3-Clause license, available in the Python Package Index (PyPI).

lhs_framework: Latin hypercube sampling (LHS) framework for MATLAB.

> GNU GPLv3 or later, available on figshare.
> Used independently by other researchers in:
> - McCulloch K et al., *Hepatology*, 2019;
> - Campbell PT et al., *Vaccine* 33(43), 2015;
> - 2 technical reports to the World Health Organisation;
> - 1 technical report to the Australian Department of Health;
> - 2 annual reports to the Australian Department of Health, National Surveillance for Hepatitis B Indicators: 2018, 2019.
> - 2 conference presentations;
> - 1 conference poster;

targeted-NAI: Epidemic & clinical pathways models for evaluating stockpile requirements and population impact of targeted antiviral interventions.

> GNU GPLv3 or later, available on figshare.

Whole-kidney model of salt and water excretion.

> CeCILL v2.0 or CeCILL-C v1.0, also available as a virtual environment.