

## Robert Moss

2019-03-18

**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*  
Aug 2014- **Research Fellow**, Melbourne School of Population and Global Health.  
*University of Melbourne, Australia*  
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.

**Publications** *Peer-reviewed journal articles*  
24. Submitted 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”.  
23. u/review Shearer F, **Moss R**, McVernon J, Ross JV, McCaw JM. “Incorporating decision analysis in pandemic planning and response”, *PLoS Med*.  
22. u/review **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*.  
21. u/review Cunningham W, ..., **Moss R**. “Optimal Timing of Influenza Vaccine during Pregnancy: a Systematic Review and Meta-Analysis”, *Influenza Other Respir Viruses*.  
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.  
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**  
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: 1. Impact Factor: 1.690.**  
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: 2. Impact Factor: NA; first issue in Oct 2016.**

16. Jan 2017 **Moss R**, Zarebski AE, Dawson P, McCaw JM. “Retrospective forecasting of the 2010–14 Melbourne influenza seasons using multiple surveillance systems”, *Epidemiol Infect* 145(1): 156–169.  
**Citations:** 6. **Impact Factor:** 2.075.
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:** 1. **Impact Factor:** 2.768.
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:** 3. **Impact Factor:** 3.834.
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:** 14. **Impact Factor:** 2.677.
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:** 17. **Impact Factor:** 4.542.
11. May 2014 **Moss R**, Layton AT. “Dominant factors that govern pressure natriuresis in diuresis and antidiuresis: a mathematical model”, *AJP Renal* 306(9): F952–F969.  
**Citations:** 16. **Impact Factor:** 3.611.
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* 306(2): F224–248. **Selected for an Editorial Focus article** (link)  
**Citations:** 18. **Impact Factor:** 3.611.
9. Dec 2012 Dafilis MP, **Moss R**, McVernon J, McCaw J. “Drivers and consequences of influenza antiviral resistant-strain emergence in a capacity-constrained pandemic response”, *Epidemics* 4(4): 219–226.  
**Citations:** 3. **Impact Factor:** 2.290.
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:** 17. **Impact Factor:** 4.542.
7. Apr 2012 Bolton KJ, McCaw JM, **Moss R**, Morris RS, Wang S, Burma A, Darma B, Naranjerel D, Nymadawa P, McVernon J. “An analysis of the likely effectiveness of pharmaceutical and non-pharmaceutical interventions for mitigating influenza transmission in Mongolia”, *Bull WHO* 90(4): 264–271.  
**Citations:** 14. **Impact Factor:** 5.089.
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:** 19. **Impact Factor:** 3.227.

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:** 2. **Impact Factor:** 2.677.
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:** 26. **Impact Factor:** 2.806.
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. **Impact Factor:** 1.514.
2. 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:** 8. **Impact Factor:** 2.970.
1. 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:** 6. **Impact Factor:** 2.970.

#### *Government reports*

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

- Aug 2016 McVernon J, Wood J (eds). "A User's Guide to Infectious Disease Modelling", [PRISM<sup>2</sup> CRE](#). ISBN: 978-0-7340-5303-9.

#### *Other publications*

- 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*.

#### **Awards** **Net amount: \$82,276**

- Aug 2019 Options for the Control of Influenza X, Singapore. **Moss R. Funding:** \$1,410 (1400 SGD).
- Nov 2018 WHO Influenza Incidence Analytics Group, Geneva. **Moss R. Funding:** \$3,344 (2537 USD).
- May 2018 CIVSEC 2018 National Innovation Award for Civil Security. Lau T, Skvortsov A, Ristic B, Gailis R, Dawson P, McCaw J, **Moss R**. *Civil Security Congress and Exposition, Industry Defence and Security Australia Ltd.*
- May 2018 CIVSEC 2018 Innovation Award for Disaster Relief, Emergency Management and Humanitarian Services. Lau T, Skvortsov A, Ristic B, Gailis R, Dawson P, McCaw J, **Moss R**. *Civil Security Congress and Exposition, Industry Defence and Security Australia Ltd.*
- Aug 2017 Policy relevant infectious disease simulation and mathematical modelling (PRISM<sup>2</sup>) NHMRC Centre of Research Excellence; *Winner: Best Postdoctoral Presentation*. **Moss R. Funding:** \$2,000.
- Jan 2017 Policy relevant infectious disease simulation and mathematical modelling (PRISM<sup>2</sup>) NHMRC Centre of Research Excellence; *Postdoctoral Researcher and PhD Student Funding Scheme*. **Moss R. Funding:** \$1,847.
- Nov 2015 Policy relevant infectious disease simulation and mathematical modelling (PRISM<sup>2</sup>) NHMRC Centre of Research Excellence; *Postdoctoral Researcher and PhD Student Funding Scheme*. **Moss R. Funding:** \$3,675.
- Sep 2010 **Moss R**, selected to attend [The Origins of Renal Physiology](#) (an intensive one-week laboratory course), Mount Desert Island Biological Laboratory, USA.
- Aug 2008 [Stawell Scholarship](#) recipient. **Moss R. Funding:** \$10,000.

2005–2008 Australian Postgraduate Award. **Moss R. Funding:** \$60,000 (3 years).

- Grants** **Net amount: \$1,153,979**
- Jun 2018 Solicited tender: McVernon J, **Moss R**, Carvalho N, Herz J, Herry G, Sullivan S. Supply arrangements for pandemic influenza vaccine. *Office of Health Protection, Australian Government Department of Health. Funding:* \$212,030.
- Feb 2018 Solicited tender: McVernon J, Fielding J, Macartney K, Beard F, Subbarao K, Sullivan S, Dawson A, Gilbert L, Massey P, Miller A, Durrheim D, Crooks K, McCaw J, **Moss R**. Investigate and model initial pandemic influenza vaccine target groups. *Office of Health Protection, Australian Government Department of Health. Funding:* \$175,802.
- Oct 2016 Policy relevant infectious disease simulation and mathematical modelling (PRISM<sup>2</sup>) NHMRC Centre of Research Excellence; *Seed Funding Grant*. Mitchell L\*, **Moss R\***. **Funding:** \$3,300.
- Aug 2016 Research agreement: McCaw JM, **Moss R**. Epidemic modelling for infectious diseases forecast. *Defence Science and Technology Group. Funding:* \$384,550.
- Jun 2016 Melbourne Networked Society Institute; *Seed Funding Scheme. Evaluation of large-scale tracking data for epidemiological forecasting of influenza epidemics*. Tomko M, **Moss R**, Geard N. **Funding:** \$45,000.
- Feb 2016 Solicited tender: McVernon J, McCaw JM, **Moss R**, Hunter A, Fielding JE, Glass K. Model infection control with personal protective equipment during an influenza pandemic. *Office of Health Protection, Australian Government Department of Health. Funding:* \$39,969.
- Feb 2016 Solicited tender: McVernon J, McCaw JM, **Moss R**, Hunter A, Fielding JE, Glass K. Review models of health care delivery in an influenza pandemic. *Office of Health Protection, Australian Government Department of Health. Funding:* \$126,558.
- Jun 2015 Solicited tender: McVernon J, McCaw JM, **Moss R**, Cheng A, Hurt A. Review current evidence on the use of neuraminidase inhibitors held in the National Medical Stockpile, in a pandemic. *Office of Health Protection, Australian Government Department of Health. Funding:* \$90,770.
- Dec 2014 Solicited tender: 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. *Department of Foreign Affairs and Trade. Funding:* \$76,000.

- Teaching** *Lecturer*
- 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

- 2019 Bradley Crammond, MBioStat
- 2019 Zhang Cheng, MIT
- 2018– Dr Freya Shearer, Research Fellow
- 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*

- Aug 2019 **Moss R.** *Options for the Control of Influenza X.* Singapore.
- 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 Baggeley.
- 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<sup>2</sup> NHMRC Centre 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 Fraser 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*
- 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". *PRISM<sup>2</sup> 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". *PRISM<sup>2</sup> 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*
- 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  
ANZIAM Journal  
BMC Infectious Diseases  
BMC Public Health  
Communicable Diseases Intelligence  
Epidemiology and Infection  
International Journal of Computers and Applications  
Involve, a Journal of Mathematics  
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  
Scientific Reports

### *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

### *Event Organisation*

Aug 2018 Workshop: Reproducible Research  
PRISM<sup>2</sup> 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<sup>2</sup> Professional Development Workshop  
Treacy Centre, Melbourne  
Jun 2017 PRISM<sup>2</sup> Infectious Disease Forecasting Workshop  
University of Melbourne  
Jun 2017 PRISM<sup>2</sup> 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*

Nov 2018 Planning Day  
Melbourne School of Population and Global Health

### *External Engagement Events*

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<sup>2</sup> 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<sup>2</sup> 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*
- 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*.
- Committees*
- Dec 2018– Large Scale Computing Expertise Group
- Jan 2018– MSPGH Research Computing Working Group
- Jan 2018– WHO Influenza Incidence Analytics Group
- Feb 2016–Dec 2018 Data, Systems and Society Research Network
- Professional Courses*
- 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*

[Whole-kidney model of salt and water excretion.](#)

CeCILL v2.0 or CeCILL-C v1.0, also available as a [virtual environment](#).

[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).

[lhs\\_framework](#): Latin hypercube sampling (LHS) framework for MATLAB.

GNU GPLv3 or later, available on figshare.

Used independently by other researchers in:

- 1 peer-reviewed publication: [Campbell PT et al., Vaccine 33\(43\), 2015](#);
- 2 conference presentations;
- 1 conference poster;
- 2 technical reports to the World Health Organisation; and
- 1 technical report to the Australian Department of Health.

**References**    *Available upon request*