

**Personal details**

Name	Philip (Phil) Keith Pollett
Current position	Professor Emeritus (Mathematics)
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Nationality	Australian
Date of birth	28th March 1957
Place of birth	Adelaide, South Australia
Marital status	Married to violist Professor Patricia E.M. Pollett One child, Richard O. Pollett (deceased)

**Positions held**

01/2005–12/2018	Professor of Mathematics	University of Queensland
01/1993–12/2004	Reader in Mathematics	University of Queensland
06/1987–12/1992	Senior Lecturer	University of Queensland
06/1986–06/1987	Lecturer	Murdoch University
05/1985–05/1986	Lecturer	University of Adelaide
10/1982–04/1985	Lecturer	University of Wales College of Cardiff
10/1979–09/1982	Undergraduate Supervisor (tutor)	St John's College Cambridge
01/1979–09/1979	Computer Systems Officer	South Australian Public Service

**Qualifications and awards**

Academic	1983	PhD	University of Cambridge
Qualifications	1979	BSc (Hons)	University of Adelaide
	1978	BSc	University of Adelaide
Memberships	1983–93	Member of the Cambridge Philosophical Society	
	1993–	Fellow of the Cambridge Philosophical Society	
	1986–93	Member of the Australian Mathematical Society and Member of the Division of Applied Mathematics	

Memberships	1993–	Fellow of the Australian Mathematical Society and Member of the Division of Applied Mathematics
	1986–	Member of the Australian Society for Operations Research
	1987–92	Member of the Statistical Society of Australia
	1991–	Member of the Modelling and Simulation Society of Australia and New Zealand
Awards	2007	Alan David Richards Visiting Fellowship in Mathematics, Grey College Durham (UK)
	1993	Moran Medal, Australian Academy of Science

This award is made periodically (normally every two years) to a scientist 40 years of age or under for distinguished research carried out mainly in Australia in one or more of the fields of applied probability, biometrics, mathematical genetics, psychometrics and statistics. The citation read as follows:

“Dr Pollett has made outstanding contributions to Applied Probability Theory. He has worked for some years on problems concerning quasi-stationary distributions for random processes, and has solved the Vere-Jones conjecture about conditions for a large class of quasi-stationary measures to be  $\mu$ -invariant. He has demonstrated exceptional skills with the tools of modern probability theory, and has applied those tools not only to solve deep theoretical problems, but also to elucidate important practical problems in a wide variety of areas, including parasitology, telecommunications and chemical kinetics. This combination of exceptional theoretical ability, and broad range of scientific interests, ensures Dr Pollett a place as the standard-bearer for a young generation of Australian Applied Probabilists.”

- 1981 J.T. Knight Prize, University of Cambridge
- 1979 George Murray Scholarship, University of Adelaide
- 1978 South Australian Public Service Scholarship

## Research

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### Summary statement of research activity

My research is in the field of mathematical modelling, and is concerned chiefly with the theory of stochastic processes and applications in ecology, epidemiology, parasitology, telecommunications and chemical kinetics. I have contributed to several areas (the papers cited here are listed below):

*Queueing networks and point processes* Poisson approximations to flow processes in Markovian networks [1, 2, 3, 5, 8, 25, 41]; approximating queueing-time distributions in general queueing networks [6]; sojourn-time distributions in closed Jackson networks [4]; resource allocation in general queueing networks [74, 77, 118]; modelling congestion in closed queueing networks [65, 73]; connecting reversible and quasi-reversible Markov processes [9, 31]; preserving partial balance in continuous-time Markov chains [7, 15].

*Mathematical biology* Persistence/extinction times in population models [85, 86, 91, 95, 99, 105]; modelling quasi stationarity in ecological systems [16, 20, 37, 50, 55, 64, 66, 78, 123, 137]; management, control and decision making for ecological systems [98, 100, 104, 106, 112, 121, 133, 142, 160, 161, 162]; population processes with random initial conditions [132]; statistical inference for population models [100, 102, 116, 117, 120, 130, 131, 141, 146]; ensemble behaviour in population processes [103, 119]; pedigree analysis [148, 155]; epidemics [75, 86, 108, 140, 145]; metapopulations [112, 114, 116, 125, 126, 129, 131, 136, 139, 143, 144, 151, 152, 154, 156, 157, 158].

*Modelling of telecommunications systems* Analysis of response times and optimal allocation of effort in message and packet switching networks [11, 54, 170]; Monte Carlo estimation of blocking probabilities in circuit switching networks [12, 13, 18, 169]; modelling bistability in circuit switching networks with random alternative routing [28, 30, 32]; fixed-point methods [52, 58, 81, 84, 89, 90, 172].

*Quasi-stationary distributions* The relationship between  $\mu$ -invariant measures and quasi-stationary distributions for absorbing Markov chains [10, 17, 21, 34, 35, 38, 45, 47, 48, 49, 63, 70, 71, 72]; quasi-stationarity distributions for Markov chains with positive drift [60, 69]; centre manifolds and quasi-stationary distributions [24]; quasi-stationary distributions in chemical kinetics [14, 19], epidemics [75] and ecological models [16, 20, 37, 50, 55, 64, 66, 78]; limiting-conditional distributions for birth-death processes [53, 56]; algorithms for computing stationary and quasi-stationary distributions for Markov chains with sparse transition structure [39, 43]; quasi-stationary distributions for reducible Markov chains [113, 122]; quasi-stationary distributions for quasi-birth-death processes [46, 51, 57]; bounds for the decay parameter for birth-death process [109]. For a recent review see [147].

*Markov chain theory* Classification of continuous-time Markov chains [22]; invariant measures for explosive Markov chains [26]; the construction of Markov chains with a given invariant measure [27, 35, 42, 94, 97]; the existence of stationary distributions [40]; similar Markov chains [79]; path integrals [87, 83, 88, 173]; uniqueness criteria [96].

*Diffusion approximations* Diffusion approximations in parasitology [23], epidemics [75], ecological systems [76], telecommunications networks [30], queues [107] and chemical kinetics [33].

*Branching models* The collision branching process [92], weighted Markov branching processes [101, 128], quasi-stationary distributions [21].

*Miscellaneous* Dual constructions for pure-jump Markov processes [44]; Monte Carlo simulation of finite-state Markovian models [29]; acyclicity in random graphs [171]; network models for seismicity [61]; the SIS logistic epidemic [86]; first passage times in the Ehrenfest model [110, 174]; stochastic models for the spread of HIV [108]; statistical inference [102, 107, 117, 130, 138, 141, 153]; queues [107, 127]; quantitative risk stratification [115]; fault diagnosis in distributed systems [134, 135, 150]; set-valued dynamical systems [149].

A detailed description of my research, as well as java applets that illustrate some of my work, can be found here: <http://www.maths.uq.edu.au/~pkp/>

## Research funding

- ARC Discovery Grant (DP150101459) 2015–17 [with Andrew Barbour, Nathan Ross, and Aihua Xia (The University of Melbourne)]: “Random Discrete Structures: Approximations and Applications”, \$591,800.
- ARC Centre of Excellence (CE140100049) 2014–20 [with Nigel Bean and Matthew Roughan (The University of Adelaide), Peter Bartlett, Kevin Burrage, Kerrie Mengersen, Anthony Pettitt and Ian Turner (QUT), Robert Kohn (The University of New South Wales), Jan DeGier, Aurore Delaigle, Peter Forrester, Peter Hall and Peter Taylor (The University of Melbourne), Dirk Kroese (The University of Queensland), and John Geweke, Louise Ryan and Matt Wand (University of Technology, Sydney)]: “Centre of Excellence for Frontiers in Mathematics and Statistics” (ACEMS), \$20,000,000.
- ARC Discovery Grant (DP140100654) 2014–16: “Understanding the effects of individual variation on population dynamics”, \$384,000. (This grant was relinquished in favour of the ARC Centre of Excellence for Frontiers in Mathematics and Statistics.)
- ARC Discovery Grant (DP120102398) 2012–14 [with Kostya Borovkov, Andrew Barbour and Aihua Xia (University of Melbourne), Alexander Novikov (University of Technology, Sydney), Malwina Luczak (University of Sheffield) and Gesine Reinert (Oxford University)]: “Random network models with applications in biology”, \$300,000.
- ARC Discovery Grant (DP110101929) 2011–13 [with Nigel Bean and Joshua Ross (University of Adelaide) and Peter Taylor (University of Melbourne)]: “New methods for improving active adaptive management in biological systems”, \$255,000.
- ACERA Project Grant (Project 0902) 2008–09 [with Hugh Possingham, Ecology Centre, University of Queensland]: “Strategies for managing invasive species in space: deciding whether to eradicate, contain or control”, \$71,346.
- ARC Linkage Grant (LP0882316) 2008–10 [with Janet Lanyon (University of Queensland) and Jennifer Ovenden and Damien Broderick (Queensland Department of Primary Industries and Fisheries), with collaborating organizations Queensland Department of Primary Industries and Fisheries, Consolidated Rutile Ltd and Sea World]: “Animal movement between populations deduced from family trees: a test case on dugongs in southern Queensland”, \$225,000.
- ARC Centre of Excellence (CE0348217) 2008–10 [with Tony Guttman, Peter Hall, Peter Taylor, Aleks Owczarek, Kostya Borovkov and Richard Brak (University of Melbourne), Richard Brent, David Hill and Chris Heyde (The Australian National University), Tony Dooley, Ian Sloan, Gary Froyland and Matthew England (University of New South Wales) and Reinout Quispel (La Trobe University)]: “Centre of Excellence for Mathematics and Statistics of Complex Systems” (MASCOS), \$1,800,000.
- ARC Centre of Excellence (CE0348217) 2003–07 [with Tony Guttman, Peter Taylor, Aleks Owczarek, Kostya Borovkov, Aihua Xia and Richard Brak (University of Melbourne), Peter Hall and Chris Heyde (The Australian National University), Tony Dooley, Ian Sloan and Colin Rogers (University of New South Wales) and Reinout Quispel (La Trobe University)]: “Centre of Excellence for Mathematics and Statistics of Complex Systems” (MASCOS), \$10,906,575.

- Hong Kong Research Grants Council Earmarked Research Grant, 2006–07 [with Anyue Chen (University of Hong Kong) and Eric Renshaw (University of Strathclyde)]: “Stochastic Modelling of Interacting Branching Systems”, HK\$250,000.
- Queensland State Government Centre of Excellence Project Grant, 2003–07: “Stochastic Models for Complex Biological Systems”, \$125,000.
- ARC Discovery Grant, 2002–04 [with Nigel Bean and Peter Taylor (University of Adelaide), and Dirk Kroese (University of Queensland)]: “Operator-Analytic Methods in Telecommunication Systems”, \$183,611.
- ARC Large Grant, 2001–03: “Analytical and Computational Methods for Studying Explosive Random Processes”, \$195,000.
- University of Queensland International Collaborative Research Award, Category 2, 1998–99: “Mathematical Models for Stress-Release and Transfer”, \$846.
- ARC Large Grant, 1997–99: “Analytical and Computational Methods for Assessing the Performance of Telecommunications Networks”, \$150,000.
- ARC Large Grant, 1996–98 [with Bill Henderson, Charles Pearce and Peter Taylor (University of Adelaide)]: “Matrix-Analytic Methods in Applied Probability”, \$201,000.
- ARC Large Grant, 1995–97: “Analytical and Computational Methods for Modelling Evanescent Random Processes”, \$170,948.
- University of Queensland, Category R1 Quality Funds (within priority area of *High Performance Computing*), 1995: “Computational Modelling of Large-Scale Stochastic Systems”, \$8,000.
- Australian Telecommunications and Electronics Research Board, Research Grant, 1992 [with Kevin Burrage (University of Queensland)]: “Parallel Algorithms for Estimating the Performance of Telecommunications Networks”, \$6,000.
- ARC Large Grant, 1992–94: “Analytical and Computational Methods for Modelling Evanescent Random Processes”, \$141,700.
- University of Queensland, Special Project Grant, 1991: “Analytical and Computational Methods for Modelling Evanescent Random Processes”, \$15,000.
- ARC Large Grant, 1989–91: “Methods for Approximating the Behaviour of Chemical Processes and Ecological Systems”, \$114,047.

### **Keynote/Plenary addresses**

- “Quasi-stationary distributions”, 10th International Conference on Matrix-Analytic Methods in Stochastic Models (MAM10), University of Tasmania, Hobart, Australia, 13–15 February 2019.
- “Metapopulations in evolving landscapes”, 61st Annual Meeting of the Australian Mathematical Society, Macquarie University, Sydney, Australia, 12–15 December 2017.
- “A metapopulation model incorporating landscape dynamics”, 2nd International Conference on Current Progress in Mathematics and Sciences (ISCPMS), Margo Hotel, Depok (southern Jakarta), 1–2 November 2016.

- “Population networks with local extinction probabilities that evolve over time”, Special session on Probability, 59th Annual Meeting of the Australian Mathematical Society, Flinders University, Adelaide, Australia, 28 September–1 October 2015.
- “Quasi-stationary distributions: then and now”, Symposium on Stochastic Processes in honour of Erik van Doorn on the occasion of his retirement, University of Twente, 26 September 2014.
- “Stochastic models for population networks”, Invited Short Course, School on Information and Randomness (IR2008), Centre for Mathematical Modelling, University of Chile, 15–19 December 2008.
- “Ensemble behaviour in population processes”, 4th Australian Postgraduate Workshop on Stochastic Processes and Modelling, University of Adelaide, Adelaide, Australia, 10–13 February 2008.
- “Modelling the long-term behaviour of evanescent processes”, 42nd Australasian Applied Mathematics Conference (ANZIAM 2006), Mansfield, Victoria, Australia, 5–9 February 2006.
- “Stochastic models and their deterministic analogues”, 2nd Australian Postgraduate Workshop on Stochastic Processes and Modelling, University of Melbourne, Melbourne, Australia, 12–15 February 2006.
- “Quasi-stationary distributions”, Fields Institute Workshop on Large Deviations and Rare Events in Networks, University of Ottawa, Ottawa, Canada, 4–5 July 2005.
- “Tony Pakes’ contributions to applied probability”, Workshop in Honour of Tony Pakes on the Occasion of his 60th Birthday, Department of Mathematics and Statistics, University of Western Australia, Perth, Australia, 2 October 2001.
- “Identifying Markov chains with a given invariant measure”, International Workshop on Markov Processes and Controlled Markov Chains, Changsha, China, 22–28 August 1999.
- “Fixed point methods for loss networks”, International Conference on Probability Theory and its Applications, Korea Advanced Institute of Science and Technology, Taejon, Korea, 24–26 February 1998.
- “Modelling bistability in telecommunications network”, the 32nd Australasian Applied Mathematics Conference (ANZIAM96), Masterton, New Zealand, 4–8 February 1996.

### **Invited conference talks**

Additionally, I have given 24 invited conference talks at national and international meetings, including three invitations (1994, 1998 and 2003) to participate in the prestigious Oberwolfach meetings.

- “Infinite-patch metapopulation models: branching, convergence and chaos”, 40th Conference on Stochastic Processes and their Applications, Chalmers University of Technology, Gothenburg, Sweden, 11–15 June 2018.

- “Birth-death processes and orthogonal polynomials”, ACEMS Workshop on Stochastic Processes and Special Functions, University College, The University of Melbourne, Melbourne, Australia, 13–14 August 2015.
- “An SIS epidemic in large population with individual variation”, Institute of Mathematical Statistics (IMS) Annual Meeting, Sydney, 7–10 July 2014.
- “The limiting behaviour of a patch occupancy model”, Workshop on Stochastic Networks, University of Auckland, 12–13 April 2012.
- “Point processes and patch survival in metapopulations”, 3rd Wellington Workshop in Probability and Mathematical Statistics, Victoria University of Wellington, Wellington, 28–29 November 2011.
- “Limit theorems for chain-binomial population models”, Workshop on Discrete Mathematics and Probability in Networks and Population Biology, Institute for Mathematical Sciences, National University of Singapore, Singapore, 9–13 May 2011.
- “Stochastic models for population networks”, International Workshop on Complex Systems and Networks (IWCSN08), Australian National University, 1–3 October 2008.
- “Costs and decisions in population models” (with Joshua Ross—two speakers), Workshop on Stochastics and their Applications, University of South Australia, 27 September–1 October 2004.
- “Evaluating the total cost of a random process over its lifetime”, Winter School in Mathematics and Computational Biology, University of Queensland, 5–9 July 2004.
- “Identifying Markov chains with a given invariant measure”, Oberwolfach Applied Probability Meeting, Mathematisches Forschungsinstitut Oberwolfach, Germany, 30 November–6 December 2003.
- “Similar Markov chains”, Symposium in Honour of David Vere-Jones on the Occasion of his 65th Birthday, Victoria University of Wellington, Wellington, New Zealand, 19–21 April 2001.
- “Quasistationarity of continuous-time Markov chains with positive drift”, Oberwolfach Applied Probability Meeting, Mathematisches Forschungsinstitut Oberwolfach, 29 November–5 December 1998.
- “Optimal allocation of effort in general queueing networks”, 4th Conference of the Association of Asia-Pacific Operational Research Societies, Melbourne, Australia, 30 November–4 December 1997.
- “Quasistationarity in Markovian models”, 3rd International Symposium on Probability and its Applications, Park City, Utah, 30 July–1 August 1997.
- “Estimating blocking probabilities in telecommunications networks with linear structure”, Sydney International Statistical Congress (SISC96), Sydney, Australia, 8–12 July 1996.
- “Modelling random fluctuations in a bistable telecommunications network”, Workshop on Stochastic Networks (SISC96 satellite meeting), University of Sydney, 13 July 1996.
- “Quasi-stationary distributions for continuous-time Markov chains”, 6th Latin American Congress on Probability and Mathematical Statistics, Valparaíso, Chile, 20–24 November 1995.

- “Poisson approximations for traffic processes in telecommunications networks”, International Workshop on Applied Probability (Numazu95), Numazu, Japan, 9–13 July 1995.
- “Quasi-stationary distributions for continuous-time Markov chains”, International Conference on Applied Probability and Time Series Analysis (in honour of Joe Gani and in memory of Ted Hannan), Athens, Greece, 22–26 March 1995.
- “Analytical and computational methods for modelling evanescent random processes”, Oberwolfach Applied Probability Meeting, Mathematisches Forschungsinstitut Oberwolfach, 5–9 December 1994.
- “GASP: Graphical Aids for Stochastic Processes”, Quarterly meeting of Brisbane Mathematics Teachers, July 1993.
- “Quasi-stationary distributions for evanescent Markov chains”, Workshop on Stochastic Systems, The Australian National University, May 1991.
- “Sojourn times in closed queueing networks”, The British National Conference on Modelling of Networks, Cambridge, May 1985.
- “Distributional approximations for networks of quasi-reversible queues”, The International Workshop on Stochastic Calculus and its Applications, Swansea, 11-15 April 1983.

## Contributed conference talks

I have given over 70 contributed conference talks at national and international meetings. Those given in the last ten years are listed.

- “Metapopulations in evolving landscapes”, Mathematical Models in Ecology and Evolution Conference (MMEE 2017), City University of London, London, 10-12 July 2017.
- “Where are the bottlenecks?”, European Conference on Queueing Theory, Toulouse, France, 18-20 July 2016.
- “Metapopulations in dynamic landscapes”, International Workshop on Monte Carlo Methods for Spatial Stochastic Systems (MCMSS 2015), Emmanuel College, The University of Queensland, Brisbane, Australia, 21-23 July 2015.
- “Metapopulations with dynamic extinction probabilities”, Mathematical Models in Ecology and Evolution Conference (MMEE 2015), Collège de France, Paris, 8-10 July 2015.
- “Metapopulations with dynamic extinction probabilities”, 4th Australia and New Zealand Applied Probability Workshop, University of Adelaide, Adelaide, Australia, 6-11 April 2015.
- “Metapopulations in dynamic landscapes, ACEMS Retreat”, Calypso Plaza Resort, Coolangatta, Australia, 29-30 January 2015.
- “An SIS epidemic in large population with individual variation”, ASC-IMS Meeting, Australian Technology Park, Sydney, Australia, 7-10 July 2014.
- “Interaction between habitat quality and an Allee-like effect in metapopulations”, 19th Biennial Congress on Modelling and Simulation (MODSIM2011), Perth Convention Exhibition Centre, Perth, Australia, 12-16 December 2011.



- “Limits of large metapopulations with patch dependent extinction probabilities”, 54th Annual Meeting of the Australian Mathematical Society, University of Queensland, Brisbane, Australia, 27-30 September 2010.
- “Limit theorems for discrete-time metapopulation models”, 53rd Annual Meeting of the Australian Mathematical Society, University of South Australia, City West Campus, Adelaide, Australia, 28 September-1 October 2009.
- “Rules of thumb for metapopulation management”, 18th Biennial Congress on Modelling and Simulation (MODSIM09), Cairns Convention Centre, Cairns, Australia, 13-17 July 2009.
- “Metapopulations: from network models to patch occupancy models”, MASCOS Workshop on Complex Networks, University of Melbourne, Melbourne, Australia, 26 June 2009.

Additionally, I have given over 80 invited research seminars at academic and research institutions throughout the world.

## **Supervision of research staff**

I have supervised the following postdoctoral fellows / research fellows:

- Gopal Nair (now Associate Professor within the School of Mathematics, University of Western Australia)
- Mark Bebbington (now Professor of Geostatistics, Volcanic Risk Solutions, Massey University)
- Owen Jones (now Professor of Operational Research within School of Mathematics, Cardiff University)
- Andrew Hart (now Research Scientist within the Centre for Mathematical Modelling, University of Chile, Santiago)
- William Millan
- Martin O’Hely (now Postdoctoral Research Fellow in Biostatistics/Bioinformatics within the School of Medicine, Deakin University)
- Hanjun Zhang (now Professor of Mathematics within the School of Mathematics and Computational Science, Xiangtan University)
- Iadine Chadès (now Team Leader, Research Scientists at CSIRO Sustainable Ecosystems)
- Ross McVinish (now Lecturer in Statistics within the UQ School of Mathematics and Physics)
- Peter Braunsteins (from February 2019)

## Teaching

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### Teaching experience

I have over 35 years of teaching experience at several institutions, and have taught a broad range of courses, including a large amount of service teaching, in areas as diverse as mathematical analysis, communication theory, computer-intensive statistics, exploratory data analysis, linear algebra, mathematical programming, optimization, probability theory, simulation, statistical inference, stochastic modelling, and, operations research. Courses lectured in recent years at the University of Queensland are as follows:

- MP115 – Linear Algebra and Applications I
- MS101 – Elements of Probability I
- ME206 – Statistics for Process Engineers\*
- MS213 – Introductory Data Analysis\*
- MS262 – Probability Models for Engineering and Science\*
- ME308 – Probability Models for Engineers\*
- MS303 – Stochastic Processes III
- MS308 – Probability Theory III
- MS472 – Stochastic Processes IV
- MS484 – Computer-Intensive Statistics and Simulation IVH
- MS486 – Communication Theory IVH
- STAT2003 – Probability & Statistics
- STAT2201 – Analysis of Engineering & Scientific Data\*
- STAT2202 – Probability Models for Engineering & Science\*
- STAT3004 – Probability Models & Stochastic Processes
- STAT4003 – Probability & Stochastic Processes IV
- STAT4403 – Advanced Probability & Stochastic Processes I
- STAT4404 – Advanced Probability & Stochastic Processes II

\*Service course

### Postgraduate supervision

Postgraduate students for whom I was, or am, Principal Advisor:

- Richard Parsons, PhD (1984–86) “Mathematical Models for Chemical Reactions”. Richard is currently Senior Lecturer, School of Pharmacy, Curtin University of Technology.
- David Walker, PhD (1987–97) (Part time) “ $\mu$ -Invariant Vectors and Measures, and the Construction Problem for Continuous-Time Markov Chains”. David is currently Research Officer, Policy and Evaluation, Queensland Studies Authority, Queensland.
- Andrew Hart, PhD (1994–97) “Quasi-stationary Distributions for Continuous-Time Markov Chains”. Andrew is currently Research Scientist in Probability and Dynamical Systems, Centro de Modelamiento Matemático, Departamento de Ingeniería Matemática, Universidad de Chile.

- Laird Breyer, PhD (1995–97) “Quasi-stationarity and Conditioned Markov Processes”. Laird is currently at large. Most recently he was Research Fellow, EU Network in Statistical and Computational Methods for the Analysis of Spatial Data, Department of Mathematics and Statistics, University of Lancaster.
- Mark Thompson, PhD (1998–2002) “Fixed Point Methods for Loss Networks”. Mark is currently Senior Portfolio Manager, Plato Investment Management.
- Nicholas Denman, MPhil (2000–07) (Part-time) “Topics in Quasi Stationarity for Markov Chains”. Nicholas is currently a risk consultant with Energy Edge (Brisbane) Ltd.
- Olena Kravchuk, PhD (2001–06) (Part-time) “Trigonometric Scores Rank Procedures with Applications to Long-tailed Distributions”. Olena is currently Lecturer in Applied Statistics, School of Agriculture, Food and Wine, University of Adelaide.
- Ben Cairns, PhD (2002–05) “Hitting Times for Markov Population Processes Subject to Catastrophes”. Ben is currently Senior Statistical Epidemiologist, Cancer Epidemiology Unit, University of Oxford.
- Joshua Ross, PhD (2004–06) “Density Dependent Markov Population Processes: Models and Methodology”. Joshua is currently ARC Future Fellow and Professor of Applied Mathematics, School of Mathematical Sciences, University of Adelaide.
- David Sirl, PhD (2004–07) “On the Analysis of Absorbing Markov Processes”. David is currently Lecturer in Statistics, School of Mathematical Sciences, University of Nottingham.
- Daniel Pagendam, PhD (2007–10) “Statistical Inference for Stochastic Processes”. Daniel is currently Research Scientist with CSIRO Data 61.
- Fionnuala Buckley, PhD (2007–11) “Discrete-time Stochastic Metapopulation Models”.
- Robert Cope, PhD (2009–14) “Animal Movement Between Populations Deduced from Family Trees”. Robert is currently a Postdoctoral Research Fellow in Applied Mathematics, School of Mathematical Sciences, The University of Adelaide.
- Dejan Jovanović, PhD (2009–14) “Fault Detection in Complex and Distributed Systems”. Dejan is currently Research Fellow, School of Electrical Engineering and Computer Science, Queensland University of Technology.
- Andrew Smith, PhD (2009–15) “Spatially Structured Metapopulation Models within Static and Dynamic Environments”. Andrew is currently Lecturer in Applied Mathematics, School of Mathematical Sciences, The University of Adelaide.
- Aminath Shausan, PhD (2010–15) “A Model for the Spread of an SIS Epidemic in a Human Population”. Aminath is currently a tutor in the School of Mathematics and Physics, The University of Queensland.
- Patrick Laub, PhD (2014–2018) “Computational Methods for Sums of Random Variables”. Patrick is currently Research Fellow within the Institut de Science Financière et d’Assurances, Université Claude Bernard Lyon 1.
- Liam Hodgkinson (2015–) “Modelling and Analysis of Metapopulations”

Additionally, I have been associate advisor of several researcher higher degree students, and I have supervised numerous honours students and vacation scholars.

## Service and administration

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I am Node Leader (UQ) of ACEMS (*ARC Centre of Excellence for Frontiers in Mathematics and Statistics*), Research Theme Leader for *Multiscale Models*, and have chaired the ACEMS Equity and Diversity Committee.

From 2019–2021 I will serve on the ARC College of Experts.

From 2013–2015 I served on the ARC College of Experts.

From 2010–2015 I served as *Postgraduate Coordinator* within the School of Mathematics and Physics, *Deputy Chair* of the *School Research Committee*, a member of the *Faculty of Science Research Higher Degree Committee*, and frequently represented the School on the *Faculty of Research Committee*.

Until UQ operations ceased at the end of 2013, I was *Director (Qld)* of the *Centre for Mathematics and Statistics of Complex Systems*, which was both the Queensland node of the ARC Centre of Excellence (MASCOS) and a School Centre within the Faculty of Science. I was responsible for managing the Centre's research and educational programmes.

I presently serve on the Advisory Board of the UQ *Centre for Applications in Resource Management* (CARM).

I served as a member of the Australian Research Council Cluster-5 (Mathematical, Information and Computing Sciences) Excellence in Research for Australia (ERA) 2010 Research Evaluation Committee.

From 2004–2009 I was *Director of Research* within the then UQ School of Physical Sciences. I was responsible for the growth and viability of research activities across the School, and gave advice to the Head of School on research and postgraduate matters. I was *Chair of the School Research Committee* and School representative on the *Faculty Research Committee*.

I devised and, from October 1995 to February 2001, maintained the *Probability Web*. This was one of the first academic web sites and is now recognized as the main Web resource for probabilists throughout the world; see

<http://www.maths.uq.edu.au/probweb/>

This site has received much international recognition. It was listed among the top 500 science sites in the Springer-Verlag publication *Science on the Web* by Edward Renehan. It also received an "Editor's Choice Award" from *LookSmart*, an online Web directory maintained and edited by *Reader's Digest* (see article titled "'World's best' rating for UQ maths sites" in *Campus Review*, March 12-18, 1997, p. 17). It was also featured in the *Scout Report for Science & Engineering*, Vol. 2, April 1999, and was highly rated by *Schoolzone* ([www.schoolzone.co.uk](http://www.schoolzone.co.uk)). It was recently listed by *Current Web Contents*, which is the ISI's online equivalent of *Current Contents* for Web content.

I am a member of the Australian Mathematical Society Special Interest Group "Women in Mathematics".

I have been active in organizing conferences and conference sessions, and I have chaired sessions at numerous major national and international meetings. I have been external examiner for several DSc, PhD and MSc theses. I am frequently asked to review papers and books for

Mathematical Reviews, as well as textbook proposals for publishers, and research grant and fellowship applications for various agencies, and, I do a large amount of refereeing for major international journals. I have also been interviewed several times for radio and television.

## Editorships

- Member of the Editorial Board of *Stochastic Models* (2006–2014).
- Member of the Editorial Board of *The Annals of Applied Probability* (1999–2006).
- Associate Editor of *the ANZIAM Journal* (formerly *Journal of the Australian Mathematical Society, Series B*) (1994–2007).
- Inaugural member of the Editorial Board of *Methodology & Computing in Applied Probability* (1998–2003).
- Member of the Editorial Board of *Proceedings of the 16th Biennial Congress on Modelling and Simulation*, Modelling and Simulation Society of Australia and Simulation (MOD-SIM05). Modelling and Simulation Society of Australia and New Zealand, December 2005 (ISBN: 0-9758400-2-9).

## Conference organization

- Serving on the Scientific Advisory Committee of the 20th INFORMS Applied Probability Society Conference, Brisbane, Australia, 3–5 July 2019.
- Served on the Technical Program Committee of 12th EAI International Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS 2019), Universitat de les Illes Balears, Palma de Mallorca, Spain, 13–15 March 2019.
- Co-organized (with Tim Garoni) the ACEMS Workshop on Multiscale Models, Monash University, Clayton Campus, 29–30 May 2018.
- Co-organized (with Jan de Gier) the ACEMS Workshop on Multi-variable Polynomials and Stochastic Systems, Emmanuel College, The University of Queensland, 2 June 2017.
- Served on the International Advisory Committee of the Workshop “Stochastic Models and Applications to Natural, Social and Technical Systems”, 16th International Conference on Computer Aided Systems Theory, Eurocast 2017, Museo Elder de la Ciencia y la Tecnología, Las Palmas de Gran Canaria, Canary Islands, Spain, 19–24 February 2017.
- Served on the Technical Program Committee of the European Conference on Queueing Theory, Toulouse, France, 18–20 July 2016.
- Co-organized (with Jan de Gier) of the ACEMS Workshop on Stochastic Processes and Special Functions, Melbourne, 13–14 August 2015.
- Co-organized (with Dirk Kroese) of the International Workshop on Monte Carlo Methods for Spatial Stochastic Systems, Brisbane, Australia, 21–23 July 2015.
- Served on the Conference Programme Committee of the 59th Annual Meeting of the Australian Mathematical Society, Flinders University, Adelaide, 28 September–1 October 2015.

- Served on the Organizing Committee of the 4th Australia and New Zealand Applied Probability Workshop, University of Adelaide, 6–11 April 2015.
- Organized a special session titled *Probability in Biology* at the Institute of Mathematical Statistics (IMS) Annual Meeting, Australian Technology Park, Sydney, 7–11 July 2014.
- Organized the ACEMS Workshop on Stochastic Systems, St Leo's College, University of Queensland, 28 April 2014.
- Organized a special session (with Ross McVinish and Aminath Shausan, University of Queensland, Geoff Mercer, Australian National University, and Joshua Ross, University of Adelaide) titled *Modelling Epidemics* at the 20th Biennial Congress on Modelling and Simulation (MODSIM13), Adelaide, Australia, 1–6 December 2013.
- Served on the Conference Programme Advisory Board of the 57th Annual Meeting of the Australian Mathematical Society, University of Sydney, 30 September–3 October 2013.
- Served on the Local Organizing Committee of the 3rd Australia and New Zealand Applied Probability Workshop, University of Queensland, 8–11 July 2013.
- Served on the Programme Committee of the 21st Australian Statistical Conference (ASC2012), Adelaide, 9–12 July 2012.
- Organized a special session (with Joshua Ross and Nigel Bean, University of Adelaide, and Peter Taylor, University of Melbourne) titled *Modelling and Decision-Making in Ecological Systems* at the 19th Biennial Congress on Modelling and Simulation (MODSIM11), Perth, Australia, 12–16 December 2011. A follow-up special issue of *Ecological Modelling* (Elsevier) will contain papers from the session. A follow-up issue of *Ecological Modelling* (Elsevier) contained papers from the session [*Ecological Modelling* **249** (1)].
- Served on the Programme Committee of the 2011 AMSI Summer School, University of Adelaide, 10 January–4 February 2011.
- Organized a special session (with Jerzy Filar, University of South Australia) titled *Stochastic Processes and Modelling* at the 54th Annual Meeting of the Australian Mathematical Society, University of Queensland, 27–30 September 2010.
- Organized a special session (with Fionnuala Buckley and Sam Nicol, University of Queensland) titled *Modelling and Control of Metapopulation Networks* at the 18th World IMACS Congress and MODSIM09 International Congress on Modelling and Simulation, Cairns Convention Centre, Cairns, Australia, 13–17 July 2009. A follow-up issue of *Ecological Modelling* (Elsevier) contained papers from the session [*Ecological Modelling* **211** (21)]. We served on the Editorial Board of the published proceedings: *Proceedings of the 18th World IMACS Congress and MODSIM09 International Congress on Modelling and Simulation, Modelling and Simulation Society of Australia and New Zealand and International Association for Mathematics and Computers in Simulation*, July 2009 (ISBN: 978-0-9758400-7-8).
- Organized (with Ole Warnaar, University of Queensland) *MASCOS Workshop on Stochastics and Special Functions*, University of Queensland, 22 May 2009.
- Organized a special session (with Dan Pagendam, University of Queensland) titled *Statistical Methods for Natural Systems* at 17th Biennial Congress on Modelling and Simulation (MODSIM07), University of Canterbury, Christchurch, New Zealand, 10–13 December 2007. We

served on the Editorial Board of the published proceedings: Proceedings of the 17th Biennial Congress on Modelling and Simulation (MODSIM07), Modelling and Simulation Society of Australia and New Zealand, December 2007 (ISBN : 978-0-9758400-4-7).

- Served on the Programme Committee of the 8th Asia-Pacific Complex Systems Conference (Complex'07), Surfers Paradise Marriott Resort, Surfers Paradise, Australia, 2–5 July 2007.
- Served on the Organising Committee of the AMSI/MASCOS Industry Workshop & ICE-EM Short Course: The Mathematics of Electricity Supply and Pricing, Holiday Inn, Surfers Paradise, Australia, 22–27 April 2007.
- Served as Co-chair of the 5th International Symposium on Probability and its Applications, IMS Annual Meeting, Rio de Janeiro, Brazil, 30 July–4 August 2006.
- Served on the Advisory Committee of the 2nd Australian Postgraduate Workshop Stochastic Processes and Modelling, University of Melbourne, 12–15 February 2006.
- Organized a special session (with Joshua Ross, University of Queensland) titled *Management, Control and Decision Making for Ecological Systems* at the 16th Biennial Congress on Modelling and Simulation (MODSIM05), Melbourne, 12–15 December 2005. A follow-up issue of Ecological Modelling (Elsevier) contained papers from the session [*Ecological Modelling* **201** (1)]. We served on the Editorial Board of the published proceedings: Proceedings of the 16th Biennial Congress on Modelling and Simulation (MODSIM05), Modelling and Simulation Society of Australia and New Zealand, Melbourne, December 2005 (ISBN: 0-9758400-2-9).
- Served on the Programme Committee of the Stochastic Modelling of Complex Systems Conference (SMOCS05), Daydream Island, 10–16 July 2005.
- Served on the Programme Committee of the 30th Conference on Stochastic Processes and their Applications, University of California at Santa Barbara, 26 June–1 July 2005.
- Organized (with David Sirl, University of Queensland) *MASCOS Workshop on Markov Chains*, University of Queensland, 4 April 2005.
- Chair of the Advisory Committee of the 1st Australian Postgraduate Workshop Stochastic Processes and Modelling University of Queensland, 7–11 February 2005.
- Organized (with Dirk Kroese, University of Queensland) *MASCOS Symposium Multi-Agent Systems and Machine Learning*, University of Queensland, 26 November 2004.
- Served on the Organizing Committee of the 2nd Workshop on Stochastics and their Applications, Adelaide, 29 September–1 October 2004.
- Organized (with Ben Cairns, University of Queensland) *MASCOS Workshop on Metapopulations*, University of Queensland, 2nd September 2004.
- Served on the Organizing Committee of the Australian Mathematical Sciences Institute Winter School on Mathematics and Computational Biology, Brisbane, 5–9 July 2004.
- Organized a special session (with Peter Taylor, University of Melbourne) at Australian Statistical Conference (ASC 2004) to celebrate the 65th birthday of Daryl Daley and to present him with his Festschrift, Cairns, 11–16 July 2004 [the Festschrift is Volume 46 (1) of the *Australian and New Zealand Journal of Statistics*, co-edited by Taylor and me].

- Served on the Programme Committee of the 2nd International Conference in Applied Probability (IWAP 2004), University of Piraeus, Greece, 22–25 March 2004.
- Organized a session titled *Applied Probability Models for Ecological Systems* at the 2nd International Conference in Applied Probability (IWAP 2004), University of Piraeus, Greece, 22–25 March 2004.
- Organized MASCOS symposium, *The Cross-Entropy Method: a New Approach to Rare Event Simulation and Randomized Optimization*, University of Queensland, 22 January 2004.
- Served as Co-chair of the 4th International Probability Symposium, IMS Annual Meeting, Banff, Canada, 27 July–1 August 2002.
- Served on the Scientific Committee of 4th International Workshop on Matrix Analytic Methods, University of Adelaide, Adelaide, 14–18 July 2002.
- Served on the Scientific Committee of the International Workshop in Applied Probability, University of Simon Bolivar, Caracas, Venezuela, 14–17 January 2002.
- Organized a special session (with Saul Jacka, University of Warwick) titled *Conditioned Markov Processes and Quasistationarity* at the 27th Conference on Stochastic Processes and their Applications, Cambridge, UK, 9–13 July 2001.
- Organized a week-long special session (with Ruth Williams, University of California, San Diego) titled *Probability Theory and its Applications* at the Joint Meeting of the American Mathematical Society and the Australian Mathematical Society, University of Melbourne, Melbourne, 12–16 July 1999.
- Organized a special session titled *Quasi-stationary Distributions* at the 10th INFORMS Applied Probability Conference, University of Ulm, Germany, 26–28 July 1999.
- Served on the Programme Committee of the 10th INFORMS Applied Probability Conference, University of Ulm, Germany, 26–28 July 1999.
- Served on the Organizing Committee of the International Workshop on Markov Processes and Controlled Markov Chains, Changsha, China, 22–28 August 1999.
- Served on the Local Organizing Committee of the XIIth International Congress of Mathematical Physics, Brisbane, 13–19 July 1997.
- Served on the Organizing Committee of the inaugural Australia–New Zealand Applied Probability Workshop, Second Valley, South Australia, 28 September–2 October 1997.

## Refereeing

I have refereed papers for the following journals (in addition to refereeing papers for several special volumes): *Advances in Applied Probability*, *Australian Journal of Statistics*, *Bulletin of the Australian Mathematical Society*, *Ecological Modelling*, *Environmental Modeling & Assessment*, *International Transactions in Operational Research*, *Journal of Applied Mathematics & Decision Sciences*, *Journal of Applied Probability*, *Journal of Mathematical Analysis and Applications*, *Journal of Mathematical Biology*, *Journal of Theoretical Biology*, *Journal of*



Theoretical Probability, Journal of the Royal Society: Interface, Linear Algebra and its Applications, Mathematical Biosciences, Mathematical and Computer Modelling, Operations Research, Probability Theory and Related Fields, Queueing Systems, Stochastic Models, Stochastic Processes and their Applications, The Annals of Applied Probability, and The Annals of Statistics.

## Consulting and related work

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I have been involved in large-scale commercial consulting projects for the Welsh National School of Medicine, the Research Laboratories of Telecom Australia, the Overseas Telecommunications Commission (OTC), Ergon Energy, the New Zealand Lotteries Commission, and Tattersall's Holdings, in addition to a variety of smaller commercial consulting jobs. I have extensive experience as an expert witness, especially in connection with patent disputes.

## Community Service

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- Engaged in the Mathematicians in Schools Programme (CSIRO), 2011–2017.
- Interviewed on ABC Local Radio to give my views on the Bulgarian lotto draw controversy (the same numbers were picked in two successive draws) (17/10/2009).
- Expert witness, Federal Court Proceedings Neurizon Pty Ltd v Jupiters Limited, Q44 of 2003.
- Expert witness, Federal Court Proceedings Neurizon Pty Ltd v LTH Consulting and Marketing Services Pty Ltd, Q171 of 2001.
- Interviewed for *Drive* (ABC Local Radio) on the proposed changes to *OzLotto* (27/09/05).
- Interviewed for *National Nine News* and *Brisbane Extra* on the subject of the *Queensland Golden Casket* draw. As a result of this segment, the Golden Casket was redrawn (08/98).
- Organized a schools visit: all Year 10 students from the Christian Outreach College spent a day at the University of Queensland, during which they were introduced to computer simulation (06/94).
- Interviewed for the ABC television programme *The Investigators* to give my opinion on lotto “Wheeling” systems (07/91).
- Interviewed for an ABC Classic-FM programme on the subject of mathematics in music (08/91).
- Involved in the Australian Mathematical Olympiad Project (1989).

## Recreational interests

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These include music and sport; I am an accomplished pianist and 'cellist, and an enthusiastic tennis and bridge player. I am a member of the Brisbane Symphony Orchestra, Orchestra Corda

Spiritus, and the Sinfonia of St Andrew's, my International Tennis Federation rank is ITN 5, and my current Australian Bridge Federation rank is \*National Master.

## Publications

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All publications are listed below. Some have been annotated with an “MR” reference. This indicates the volume of *Mathematical Reviews* (and then the location within that volume) where a review of the paper can be found. All published papers have been annotated with a DEST classification: B1 = book chapter–research, C1 = article in scholarly refereed journal, C5 = edited volume of a refereed journal, E1 = full written paper in a refereed conference proceedings, and E2 = full written paper in an edited conference proceedings.

- [1] Pollett, P.K. (1981) *Some Distributional Approximations for Networks of Queues*, J.T. Knight Prize Essay, University of Cambridge.
- [2] Pollett, P.K. (1982) *Distributional Approximations for Networks of Queues*, Ph.D. Thesis, University of Cambridge.
- [3] Brown, T.C. and Pollett, P.K. (1982) Some distributional approximations in Markovian networks. *Advances in Applied Probability* **14**, 654–671. [MR 0665299 (83j:60098)] (C1)
- [4] Kelly, F.P. and Pollett, P.K. (1983) Sojourn times in closed queueing networks. *Advances in Applied Probability* **15**, 638–656. [MR 0706621 (84m:60110)] (C1)
- [5] Pollett, P.K. (1984) Distributional approximations for networks of quasi-reversible queues. In (Eds D. Williams and A. Truman) *Stochastic Analysis and Applications*, Lecture Notes in Mathematics 1095, Springer-Verlag, Berlin, pp. 108–129. [MR 0777517 (86h:60199)] (B1)
- [6] Pollett, P.K. (1984) Residual life approximations in general queueing networks. *Elektronische Informationsverarbeitung und Kybernetik* **20**, 41–54. [MR 0765003] (C1)
- [7] Pollett, P.K. (1985) Altering the  $q$ -matrix: the problem of varied arrival rates. In (Eds E. A. Cousins and C. E. M. Pearce) *Proceedings of the 7th National Conference of the Australian Society for Operations Research*, Australian Society for Operations Research, Adelaide, pp. 206–234. (E1)
- [8] Pollett, P.K. (1986) Some Poisson approximations for departure processes in general queueing networks. *Statistics* **17**, 393–405. [MR 0849738 (87k:60235)] (C1)
- [9] Pollett, P.K. (1986) Connecting reversible Markov processes. *Advances in Applied Probability* **18**, 880–900. [MR 0867091 (88d:60189)] (C1)
- [10] Pollett, P.K. (1986) On the equivalence of  $\mu$ -invariant measures for the minimal process and its  $q$ -matrix. *Stochastic Processes and their Applications* **22**, 203–221. [MR 0860933 (88b:60168)] (C1)

- [11] Pollett, P.K. (1986) Analysis of response times and optimal allocation of resources in message and packet switched networks. *Asia-Pacific Journal of Operations Research* **3**, 134–149. (C1)
- [12] Pollett, P.K. (1988) Monte Carlo estimation of blocking probabilities in circuit-switched networks. In (Ed G.K. Rand) *Proceedings of the 7th Conference of the International Federation of Operations Research Societies*, Elsevier (North-Holland). (E1)
- [13] Pollett, P.K. (1987) A new method for estimating the performance of a communications network using simulation. *Bulletin of the Australian Society for Operations Research* **7**, 6–9. (C1)
- [14] Parsons, R.W. and Pollett, P.K. (1987) Quasistationary distributions for some autocatalytic reactions. *Journal of Statistical Physics* **46**, 249–254. (C1)
- [15] Pollett, P.K. (1987) Preserving partial balance in continuous-time Markov chains. *Advances in Applied Probability* **19**, 431–453. [MR 0889944 (88m:60186)] (C1)
- [16] Pollett, P.K. (1987) On the long-term behaviour of a population that is subject to large-scale mortality or emigration. In (Ed S. Kumar) *Proceedings of the 8th National Conference of the Australian Society for Operations Research*, Australian Society for Operations Research, Melbourne, pp. 196–207. (E1)
- [17] Pollett, P.K. (1988) Reversibility, invariance and  $\mu$ -invariance. *Advances in Applied Probability* **20**, 600–621. [MR 0955506 (89m:60172)] (C1)
- [18] Pollett, P.K. (1988) A method involving antithetic sampling for estimating blocking probabilities in a circuit-switched network. *Australian Telecommunication Research* **22**, 39–44. (C1)
- [19] Pollett, P.K. (1988) On the problem of evaluating quasistationary distributions for open reaction schemes. *Journal of Statistical Physics* **53**, 1207–1215. [MR 0980174 (89k:80025)] (C1)
- [20] Pakes, A.G. and Pollett, P.K. (1989) The supercritical birth, death and catastrophe process: limit theorems on the set of extinction. *Stochastic Processes and their Applications* **32**, 161–170. [MR 1008915 (90m:60095)] (C1)
- [21] Pollett, P.K. (1989) The generalized Kolmogorov criterion. *Stochastic Processes and their Applications* **33**, 29–44. [MR 1027106 (91k:60078)] (C1)
- [22] Pollett, P.K. (1990) A note on the classification of  $Q$ -processes when  $Q$  is not regular. *Journal of Applied Probability* **27**, 278–290. [MR 1052300 (92b:60063)] (C1)
- [23] Pollett, P.K. (1990) On a model for interference between searching insect parasites. *Journal of The Australian Mathematical Society, Series B* **32**, 133–150. (C1)
- [24] Pollett, P.K. and Roberts, A.J. (1990) A description of the long-term behaviour of absorbing continuous-time Markov chains using a centre manifold. *Advances in Applied Probability* **22**, 111–128. [MR 1039380 (91e:60212)] (C1)

- [25] Brown, T.C. and Pollett, P.K. (1991) Poisson approximations for telecommunications networks. *Journal of The Australian Mathematical Society, Series B* **32**, 348–364. [MR 1079463 (92c:90054)] (C1)
- [26] Pollett, P.K. (1991) Invariant measures for  $Q$ -processes when  $Q$  is not regular. *Advances in Applied Probability* **23**, 277–292. [MR 1104080 (92h:60114)] (C1)
- [27] Pollett, P.K. (1991) On the construction problem for single-exit Markov chains. *Bulletin of the Australian Mathematical Society* **43**, 439–450. [MR 1107398 (93a:60110)] (C1)
- [28] Pollett, P.K. (1991) Modelling random fluctuations in a bistable telecommunications network. In (Ed P. Hutton) *Proceedings of the 11th National Conference of the Australian Society for Operations Research*, Australian Society for Operations Research, Adelaide, pp. 11–22. (E2)
- [29] Pollett, P.K. (1991) Monte Carlo simulation of some finite-state Markovian models. In (Ed D.G. Mayer) *Proceedings of the 9th Biennial Conference on Modelling and Simulation*, Simulation Society of Australia, pp. 154–167. (E1)
- [30] Pollett, P.K. (1991) Diffusion approximations for a circuit switching network with random alternative routing. *Australian Telecommunication Research* **25**, 45–52. (C1)
- [31] Henderson, W., Pearce, C.E.M., Pollett, P.K. and Taylor, P.G. (1992) Connecting internally balanced quasireversible Markov processes. *Advances in Applied Probability* **24**, 934–959. [MR 1188960 (93m:60186)] (C1)
- [32] Pollett, P.K. (1992) Modelling random fluctuations in a bistable telecommunications network. In (Ed W. Henderson) *Proceedings of the 7th Australian Teletraffic Research Seminar*, Teletraffic Research Centre, University of Adelaide, Adelaide, pp. 335–345. (E2)
- [33] Pollett, P.K. and Vassallo, A. (1992) Diffusion approximations for some simple chemical reaction schemes. *Advances in Applied Probability* **24**, 875–893. [MR 1188957 (93m:60147)] (C1)
- [34] Pollett, P.K. and Vere-Jones, D. (1992) A note on evanescent processes. *The Australian Journal of Statistics* **34**, 531–536. [MR 1210363 (94f:60096)] (C1)
- [35] Nair, M.G. and Pollett, P.K. (1993) On the relationship between  $\mu$ -invariant measures and quasistationary distributions for continuous-time Markov chains. *Advances in Applied Probability* **25**, 82–102. [MR 1206534 (95g:60095a)] (C1)
- [36] Nair, M.G. and Pollett, P.K. (1993) Correction: "On the relationship between  $\mu$ -invariant measures and quasi-stationary distributions for continuous-time Markov chains". *Advances in Applied Probability* **25**, 717–719. [MR 1234306 (95g:60095b)] (C1)
- [37] Pollett, P.K. (1993) Modelling the long-term behaviour of evanescent ecological systems. In (Ed M. McAleer) *Proceedings of the International Congress on Modelling and Simulation*, Modelling and Simulation Society of Australia, Perth, Vol. 1, pp. 157–162. (E1)

- [38] Pollett, P.K. (1993) Recent advances in the theory and application of quasistationary distributions. In (Eds S. Osaki and D.N.P. Murthy), *Proceedings of the Australia–Japan Workshop on Stochastic Models in Engineering, Technology and Management*, World Scientific, Singapore, pp. 477–486. (E2)
- [39] Pollett, P.K. (1993) Analytical and computational methods for modelling the long-term behaviour of evanescent random processes. In (Eds D.J. Sutton, C.E.M. Pearce and E.A. Cousins) *Decision Sciences: Tools for Today, Proceedings of the 12th National Conference of the Australian Society for Operations Research*, Australian Society for Operations Research, Adelaide, pp. 514–535. (E2)
- [40] Pollett, P.K. and Taylor, P.G. (1993) On the problem of establishing the existence of stationary distributions for continuous-time Markov chains. *Probability in the Engineering and Informational Sciences* **7**, 529–543. (C1)
- [41] Brown, T.C. and Pollett, P.K. (1994) Correction: “Poisson approximations for telecommunications networks” [*J. Austral. Math. Soc. Ser. B* **32** (1991) 348–364] *Journal of the Australian Mathematical Society Series B* **36**, 132. [MR 1287083 (95h:90041)] (C1)
- [42] Pollett, P.K. (1994) On the identification of continuous-time Markov chains with a given invariant measure. *Journal of Applied Probability* **31**, 897–910. [MR 1303921 (95m:60110)] (C1)
- [43] Pollett, P.K. and Stewart, D.E. (1994) An efficient procedure for computing quasistationary distributions of Markov chains with sparse transition structure. *Advances in Applied Probability* **26**, 68–79. [MR 1260304 (94i:60083)] (C1)
- [44] Bebbington, M., Pollett, P.K. and Zheng, X. (1995) Dual constructions for pure-jump Markov processes. *Markov Processes and Related Fields* **1**, 513–558. [MR 1403095 (97j:60154)] (C1)
- [45] Pollett, P.K. (1995) The determination of quasistationary distributions directly from the transition rates of an absorbing Markov chain. *Mathematical and Computer Modelling* **22**, 279–287. [MR 1366699 (96h:60118)] (C1)
- [46] Bean, N.G., Pollett, P.K. and Taylor, P.G. (1996) The quasistationary distributions of homogeneous quasi-birth-and-death processes. In (Eds Richard J. Wilson, D.N. Pra Murthy and Shunji Osaki) *Proceedings of the 2nd Australia–Japan Workshop on Stochastic Models in Engineering, Technology and Management*, Technology Management Centre, University of Queensland, pp. 44–55. (E2)
- [47] Elmes, S., Pollett, P.K. and Walker, D. (1996)  $\mu$ -invariant measures and quasistationary distributions for continuous-time Markov chains when absorption is not certain. In (Eds Richard J. Wilson, D.N. Pra Murthy and Shunji Osaki) *Proceedings of the 2nd Australia–Japan Workshop on Stochastic Models in Engineering, Technology and Management*, Technology Management Centre, University of Queensland, pp. 131–140. (E2)

- [48] Hart, A.G. and Pollett, P.K. (1996) Direct analytical methods for determining quasistationary distributions for continuous-time Markov chains. In (Eds C.C. Heyde, Yu V. Prohorov, R. Pyke and S.T. Rachev) *Athens Conference on Applied Probability and Time Series Analysis, Volume I: Applied Probability, In Honour of J.M. Gani, Lecture Notes in Statistics* 114, Springer-Verlag, New York, pp. 116–126. [MR 1466711 (98m:60114)] (B1)
- [49] Hart, A.G. and Pollett, P.K. (1996) New methods for determining quasistationary distributions for Markov chains. In (Eds Richard J. Wilson, D.N. Pra Murthy and Shunji Osaki) *Proceedings of the 2nd Australia–Japan Workshop on Stochastic Models in Engineering, Technology and Management*, Technology Management Centre, University of Queensland, pp. 177–186. (E2)
- [50] Pollett, P.K. (1996) Modelling the long-term behaviour of evanescent ecological systems. *Ecological Modelling* **86**, 135–139. (C1)
- [51] Bean, N.G., Bright, L., Latouche, G., Pearce, C.E.M., Pollett, P.K. and Taylor, P.G. (1997) The quasistationary behaviour of quasi-birth-and-death processes. *Annals of Applied Probability* **7**, 134–155. [MR 1428753 (98f:60180)] (C1)
- [52] Bebbington, M.S., Pollett, P.K. and Ziedins, I. (1997) Improved fixed point methods for loss networks with linear structure. In (Ed. Lavery, W.J.) *Proceedings of the 4th International Conference on Telecommunications*, Vol. 3, Office of Continuing Education, Monash University, Clayton, Victoria, pp. 1411–1416. (E1)
- [53] Kijima, M., Nair, M.G., Pollett, P.K. and van Doorn, E. (1997) Limiting conditional distributions for birth-death processes. *Advances in Applied Probability* **29**, 185–204. [MR 1432936 (98a:60122)] (C1)
- [54] Pollett, P.K. (1997) Optimal allocation of effort in packet switching networks with generally distributed transmission times. In (Eds Hullett, J. and Sampson, D.) *Proceedings of the 3rd Asia-Pacific Conference on Communications*, Vol. 3, IREE Society of Australia, Sydney, pp. 1489–1493. (E1)
- [55] Pollett, P.K. (1997) Limiting conditional distributions for stochastic metapopulation models. In (Eds McDonald, A.D. and McAleer, M.) *Proceedings of the International Congress on Modelling and Simulation*, Vol. 2, Modelling and Simulation Society of Australia, Hobart, pp. 807–812. (E1)
- [56] Roberts, G.O., Jacka, S.D. and Pollett, P.K. (1997) Non-explosivity of limits of conditioned birth and death processes. *Journal of Applied Probability* **34**, 35–45. [MR 1429052 (98a:60124)] (C1)
- [57] Bean, N.G., Pollett, P.K. and Taylor, P.G. (1998) The quasistationary distributions of level-independent quasi-birth-and-death processes. *Stochastic Models* **14**, 389–406. [MR 1617603 (99b:60101)] (C1)

- [58] Bebbington, M.S., Pollett, P.K. and Ziedins, I. (1998) Two-link approximation schemes for linear loss networks without controls. *Journal of the Korean Mathematical Society* **35**, 539–557. [MR 1660795 (99i:90048a)] (C1)
- [59] Bebbington, M.S., Pollett, P.K. and Ziedins, I. (1998) Errata to: "Two-link approximation schemes for linear loss networks without controls". *Journal of the Korean Mathematical Society* **35**, 1061–1063. [MR 1666513 (99i:90048b)] (C1)
- [60] Coolen-Schrijner, P. and Pollett, P.K. (1999) Quasi-stationarity of discrete-time Markov chains with drift to infinity. *Methodology and Computing in Applied Probability* **1**, 81–96. [MR 1714669 (2000g:60117)] (C1)
- [61] Bebbington, M., Pollett, P.K. and Vere-Jones, D. (1999) A discrete stress-release model. In (Eds Vere-Jones, D. and Harte, D.) *Proceedings of the International Workshop on Nonlinear Modelling for Fracture and Earthquakes*, Victoria University of Wellington, Wellington, New Zealand, pp. 71–79. (E2)
- [62] Bebbington, M.S., Pollett, P.K. and Ziedins, I. (1999) Product form approximations for highly linear loss networks with trunk reservation. In (Eds Faddy, M.J., Wilson, R.J. and Osaki, S.) *Proceedings of the 1st Western Pacific / 3rd Australia–Japan Workshop on Stochastic Models*, Centre for Statistics, University of Queensland, pp. 45–54. (E2)
- [63] Pollett, P.K. (1999) Quasistationary distributions for continuous time Markov chains when absorption is not certain. *Journal of Applied Probability* **36**, 268–272. [MR 1699615 (2001d:60082)] (C1)
- [64] Pollett, P.K. (1999) Modelling quasi-stationary behaviour in metapopulations. *Mathematics and Computers in Simulation* **48**, 393–405. (C1)
- [65] Pollett, P.K. (1999) Bottlenecks in Markovian queueing networks. In (Ed. Kozan, E.) *Proceedings of the 15th National Conference of the Australian Society for Operations Research*, Queensland University of Technology, pp. 1047–1056. (E1)
- [66] Pollett, P.K. (1999) Quasistationarity in populations that are subject to large-scale mortality or emigration. In (Eds Oxley, L. and Scrimgeour, F.) *Proceedings of the International Congress on Modelling and Simulation*, Modelling and Simulation Society of Australia and New Zealand, Hamilton, New Zealand, pp. 667–672. (E1)
- [67] Pollett, P.K. and Thompson, M.R. (1999) The analysis of continuous-time Markovian models using expected rates. In (Eds Faddy, M.J., Wilson, R.J. and Osaki, S.) *Proceedings of the 1st Western Pacific / 3rd Australia–Japan Workshop on Stochastic Models*, Centre for Statistics, University of Queensland, pp. 456–465. (E2)
- [68] Bean, N.G., Pollett, P.K. and Taylor, P.G. (2000) Quasistationary distributions of level-dependent quasi-birth-and-death processes. *Stochastic Models* **16**, 511–541. [MR 1796345 (2001k:60099)] (C1)

- [69] Coolen-Schrijner, P., Hart, A.G. and Pollett, P.K. (2000) Quasi-stationarity of continuous time Markov chains with positive drift. *Journal of the Australian Mathematical Society, Series B* **41**, 1–19. [MR 1753121 (2002e:60108)] (C1)
- [70] Darlington, S.J. and Pollett, P.K. (2000) Quasistationarity in continuous time Markov chains where absorption is not certain. *Journal of Applied Probability* **37**, 598–600. [MR 1781015 (2001e:60149)] (C1)
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