## Iain MacPhee: Brief mathematical biography



Iain's undergraduate education was from the University of Melbourne, from where he also obtained a M.Sc. with dissertation On Galton–Watson processes in varying environments (1981). Iain studied for a Ph.D. at the University of Cambridge from 1982–1987, under the supervision of Frank Kelly; this was awarded for his thesis On optimal strategies for stochastic decision processes (1989).

Iain joined the staff in the Department of Mathematical Sciences at the University of Durham as a Temporary Lecturer in 1987, and his position became permanent in 1990. He was promoted to Reader in 2010.

Iain made significant and lasting contributions to teaching and administration in the department. He was involved, often as the driving force, in setting up numerous popular undergraduate courses, including material on probability, operations research, optimization, and mathematical finance, and service modules for engineering and science students. He was part of the team that introduced projects to the curriculum. He was involved in administration for teaching and learning, timetabling, and was head of the department's admissions team from 2002/3 to 2007/8, having been involved in admissions since 1993.

Iain supervised four Ph.D. students, Nikolaos H. Antoniu (1990–94), Ben P. Jordan (1993–96), Lisa J. Müller (2003–06), and Ahmad Aboalkhair (2008–12, jointly with Frank Coolen). All successfully completed their degrees. Their thesis titles were:

- N.H. Antoniu, Optimal admission policies for small star networks, 1994.
- B.P. Jordan, On optimal search for a moving target, 1997.
- L.J. Müller, Stability criteria for controlled queuing networks, 2006.
- A. Aboalkhair, Nonparametric predictive inference for system reliability, 2012.

## Publications of Iain MacPhee

- I.M. MacPhee & H.-J. Schuh. A Galton-Watson branching process in varying environments with essentially constant offspring means and two rates of growth, *Austral. J. Statist.* 25 (1983) 329–338. MR0725212.
- I.M. MacPhee. Contribution to discussion of 'Stochastic models of computer communication systems' (pp. 379–395) by F. P. Kelly, J. Royal Statist. Soc. Ser. B 47 (1985) 421–422.
- F.P. Kelly & I.M. MacPhee. The number of packets transmitted by collision detect random access schemes, Ann. Probab. 15 (1987) 1557–1568. MR0905348.
- 4. I.M. MacPhee. On optimal strategies in stochastic decision processes, Ph.D. thesis, University of Cambridge, 1989.
- I.M. MacPhee & B.P. Jordan. Optimal search for a moving target, Probab. Engrg. Inform. Sci. 9 (1995) 159–182. MR1357845.
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- 7. I.M. MacPhee & M.V. Menshikov. Critical random walks on two-dimensional complexes with applications to polling systems, *Ann. Appl. Probab.* **13** (2003) 1399–1422. MR2023881.
- I.M. MacPhee, J. Rougier, & G.H. Pollard. Server advantage in tennis matches, J. Appl. Probab. 41 (2004) 1182–1186. MR2122811.
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- 11. I.M. MacPhee, M.V. Menshikov, D. Petritis, & S. Popov. A Markov chain model of a polling system with parameter regeneration, Ann. Appl. Probab. 17 (2007) 1447–1473. MR2358630.
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- 14. P. Coolen-Schrijner, F.P.A. Coolen, & I.M. MacPhee. Nonparametric predictive inference for system reliability with redundancy allocation, J. Risk and Reliability **222** (2008) 463–476.
- I.M. MacPhee, F.P.A. Coolen, & A.M. Aboalkhair. Nonparametric predictive system reliability with redundancy allocation following component testing, *J. Risk and Reliability* 223 (2009) 181–188.
- A.M. Aboalkhair, F.P.A. Coolen, & I.M. MacPhee. Nonparametric predictive system reliability with redundancy allocation following component testing, pp. 396–407 in *Proceedings Advances* in Risk and Reliability Technology Symposium, Loughborough April 2009.
- A.M. Aboalkhair, F.P.A. Coolen, & I.M. MacPhee. Nonparametric predictive system reliability with all subsystems consisting of one type of component, pp. 85–98 in *Risk and Decision Analysis in Maintenance Optimization and Flood Management*, M.J. Kallen & S.P. Kuniewski, IOS Press, 2009.
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- 24. I.M. MacPhee, M.V. Menshikov, & M. Vachkovskaia. Dynamics of the non-homogeneous supermarket model, *Stoch. Models* **28** (2012) 533–556. MR2995522.
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