

Małgorzata Marzena O'Reilly

Curriculum Vitae



PERSONAL DETAILS

Mailing address: School of Physical Sciences,

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Date of Birth: 3/08/1963

Place of Birth: Katowice, Poland

Nationality: Australian and Polish

RESEARCH INTERESTS

Applied probability, stochastic modelling, Markov-modulated models, queueing theory, matrix-analytic methods, and applications in telecommunications, health care systems, remote sensing, and phylogenetics.

ORGANIZED CONFERENCES

Chair of the *Tenth International Conference on Matrix-Analytic Methods in Stochastic Models (MAM10)* in 2019:
<http://www.maths.utas.edu.au/People/oreilly/mam/mam10.html>

Key organizer of the *Stochastic Modelling meets Phylogenetics* collaborative workshop in 2005:
<http://www.maths.utas.edu.au/People/oreilly/SMMP/smmp2015.html>

QUALIFICATIONS

Aug 2002 **PhD** in Applied Mathematics, University of Adelaide, Australia.

- Research, under the supervision of Associate Professor Charles Pearce, in the optimal design of consecutive-k-out-of-n systems.
- Thesis titled *Necessary conditions for the optimal design of linear consecutive systems*.

Dec 1995 **BEd** in Mathematics and Computing, Flinders University, Australia.

- One-year bridging course for overseas trained teachers, Secondary Teacher of Maths and Computing.
- Awarded the Chancellor's Letter of Commendation for outstanding academic results.

Jun 1987 **MSc** in Mathematics and Education, University of Wroclaw, Poland.

- 5 years full-time course in mathematics, teacher's specialization.
- Masters thesis, written under the supervision of Professor Tomasz Rolski, contained research results in the reliability of linear consecutive-k-out-of-n:F systems and was graded *Excellent*.
- Vice-Chancellor's reward with the prize for the highest marks achieved in the 5th year of studying.

ACADEMIC APPOINTMENTS

Since Mar 2016 **Associate Investigator** at the *ARC Centre of Excellence for Mathematical and Statistical Frontiers* (ACEMS).

Jan 2015 - present **Senior Lecturer in Applied Mathematics**, University of Tasmania.

Feb 2005 - Dec 2014 **Lecturer in Applied Mathematics**, University of Tasmania.

- Teaching: Discrete Mathematics (KMA155) Operations Research (KMA255 and KMA355), Probability Models (KMA305), Stochastic Modeling (KMA306).

Aug 2002- Jan 2005 **Research Associate** (ARC Discovery Project), University of Adelaide.

- Research area: matrix-analytic models for telecommunication systems.
- Collaboration with Prof. Peter Taylor (University of Melbourne) and Prof. Nigel Bean (University of Adelaide).

Mar - Jul 2002 **Tutor** in *Statistical Analysis in Business*, University of South Australia.

Mar - Jul 2002 **Consultant** (Mathematics), University of Adelaide.

Mar 1996 - Jul 2002 **Marker** (Mathematics), University of Adelaide.

2000 Casual employment at *Teletraffic Research Centre*, University of Adelaide.

Sep - Dec 1996 **Research Associate** at *Teletraffic Research Centre*, University of Adelaide.

THESIS

PhD: *Necessary conditions for the optimal design of linear consecutive systems*. University of Adelaide, 2002.

Master's: *A hypothesis by Derman, Lieberman and Ross*. Wroclaw University, 1987.

SELECTED PUBLICATIONS

B. Margolius and M.M. O'Reilly. (2016) The analysis of cyclic stochastic fluid flows with time-varying transition rates. *Queueing Systems*, **82**:43–73.

Ashley Teufel, Jing Zhao, Malgorzata O'Reilly, Liang Liu, David Liberles. (2014) On Mechanistic Modeling of Gene Content Evolution: Birth-Death Models and Mechanisms of Gene Birth and Gene Retention. *Computation, Computational Biology section, special issue "Genomes and Evolution: Computational Approaches"*, **2**:112–130.

M.M. O'Reilly. (2014) Multi-stage stochastic fluid models for congestion control. *European Journal of Operational Research*, **238**(2):514–526.

N.G. Bean and M.M. O'Reilly. (2014) The Stochastic Fluid-Fluid Model: A Stochastic Fluid Model driven by an uncountable-state process, which is a Stochastic Fluid Model itself. *Stochastic Processes and Their Applications*, **124**(5):1741–1772.

M.M. O'Reilly and Z. Palmowski. (2013) Loss rate for stochastic double fluid models. *Performance Evaluation*, **70**(9):593–606.

N.G. Bean and M.M. O'Reilly. (2013) Stochastic Two-Dimensional Fluid Model. *Stochastic Models*, **29**(1):31–63.

N.G. Bean, M.M. O'Reilly and P.G. Taylor. (2008) Algorithms for the Laplace-Stieltjes transforms of first return times for stochastic fluid flows. *Methodology and Computing in Applied Probability*, **10**:381–408.

N.G. Bean, M.M. O'Reilly and P.G. Taylor. (2005) Algorithms for the first return probabilities for stochastic fluid flows. *Stochastic Models*, **21**(1):149–184.

N.G. Bean, M.M. O'Reilly and P.G. Taylor. (2005) Hitting probabilities and hitting times for stochastic fluid flows. *Stochastic Processes and Their Applications*, **115**(9):1530–1556.

GRANTS

ARC Discovery Project DP180100352 2018-2020 (\$317,000). Stochastic models for the evolution of gene content with A/Prof Barbara Holland, A/Prof David Liberles, A/Prof Liang Liu.

STAR Visitor Grant 2016 (€2000). Grant to support my visit to Netherlands June-July 2016. Held by Dr Scheinhardt (University of Twente) and Prof Michel Mandjes (University of Amsterdam).

UTAS Group Career Development grant 2015 (\$8580). Internal grant used to organize *Stochastic Modelling meets Phylogenetics* collaborative research workshop 16-18 November 2015.

ARC Linkage Project LP140100152 2014-2017 (\$410,000). Modelling Healthcare Systems. Dr Mark Fackrell, Dr MM O'Reilly, Professor Peter G Taylor, Professor Donald Campbell, Mr Keith Stockman, Mr S Foster.

ARC Discovery Project DP110101663 2011-2013 (\$600,000). Advanced matrix analytic methods with applications. Prof Peter G Taylor, Prof Nigel G Bean, Dr Sophie M Hautphenne, Dr MM O'Reilly, Dr Mark W Fackrell, Prof Guy G Latouche.

ARC Discovery Project DP0770388 2007-2009 (\$198,000). The Use of stochastic fluid models for the evaluation of applications-driven sample path integrals. Prof Nigel Bean, Dr MM O'Reilly.