

PERSONAL DATA

Nationalities: Australian, Danish (dual citizenships)

Date of Birth: 3 April 1974

EDUCATION

M.Sc. in Mathematics, University of Aarhus, Denmark, 2000

Ph.D. in Mathematics, University of Aarhus, Denmark, 2003

ACADEMIC APPOINTMENTS

Massachusetts Institute of Technology, Cambridge, MA, USA – Department of Mathematics

Visiting Scholar (Host/supervisor: Gian-Carlo Rota), September 1998 - July 1999

Queen Mary and Westfield College, University of London, UK – School of Mathematical Sciences

Visitor (Host/supervisor: Peter J. Cameron), September 1999

Visiting Postgraduate Student (Host/supervisor: Peter J. Cameron), September 2000 – January 2001

Queen Mary, University of London, UK – School of Mathematical Sciences

Visiting Postgraduate Student (Host/supervisor: Peter J. Cameron), September – December 2001.

University of Oxford, UK – Department of Statistics

Visitor (Host: Prof. Jotun Hein), December 2002

University of Victoria, BC, Canada – Department of Mathematics and Statistics

Postdoctoral Fellow (Employers: D. Olesky and P. van den Driessche), January – June 2003

PIMS Postdoctoral Fellow (Supervisors: D. Olesky and P. van den Driessche), July 2003 – June 2004

Financed by a PIMS Postdoctoral Fellowship grant

Technical University of Denmark – Department of Mathematics

Assistant Professor (Supervisor: Carsten Thomassen), September 2004 – August 2005

Financed by a Villum Kann Rasmussen postdoctoral grant

University of New South Wales, Australia – School of Mathematics and Statistics

Visiting Research Fellow (Host/supervisor: Catherine Greenhill), January – December 2006

Financed by a Carlsberg Foundation postdoctoral grant

Australian Postdoctoral Fellow, January 2007 – January 2010

Financed by an ARC Discovery Project grant (Chief/Sole Investigator)

Casual Lecturer, January – June 2010

Lecturer, July 2010 – June 2016

Senior Lecturer, July 2016 –

Aichi Prefectural University and Nagoya University, Japan – Department of Information Systems

Visiting Fellow (Host: Keisuke Shiromoto), June 2006

Victoria University, New Zealand – Department of Mathematics, Statistics and Computer Science

Visitor (Host: Geoff Whittle), October 2006

University of Western Australia – Department of Mathematics and Statistics

Visitor (Host: Gordon Royle), November 2008

University of South Australia – Institute for Telecommunications Research

Visitor (Host: Alex Grant and Terence Chan), October 2009

Kumamoto University, Japan – Department of Mathematics and Engineering

Visiting Professor (Host: Keisuke Shiromoto), January 2011

Monash University, Australia – Clayton School of Information Technology

Visitor (Host: Graham Farr), February–March 2017

University of Copenhagen, Denmark – Department of Science Education

Visitor Professor (Host: Henrik Kragh Sørensen), March–April, May–July 2017

Aalto University, Finland – Department of Mathematics and Systems Analysis

Visitor Professor AScl (Host: Camilla Hollanti), April–May 2017

AWARDS

Vice-Chancellor's Award for Contributions to Student Learning, UNSW (2015).
 UNSW Faculty of Science Research Grant (FRG): AUD 5,000 (2014), AUD 5,000 (2015), AUD 5,000 (2017)
 UNSW Faculty of Science Silverstar Award: AUD 25,000 (2013)
 UNSW SPF02: AUD 3,742 (2011), AUD 2,506 (2012), AUD 429 (2014), AUD 600 (2016), AUD 706 (2017)
 UNSW Start-Up Grant: AUD 10,000 (2010–2011)
 ARC Discovery Grant: T. Britz, "Chromatic polynomials, random graphs, and error-correcting codes: a unified approach to graph colouring problems", AUD 242,066 (2007 - 2009)
 Carlsberg Foundation Postdoctoral Fellowship, DKK 350,000 (2006)
 Villum Kann Rasmussen Postdoctoral Fellowship, DKK 350,000 (2004–2005)
 PIMS Postdoctoral Fellowship, CAD 20,000 (2003–2004)

CONSULTANCY

NSW Education Standards Authority (2016–2017)
 ANSTO, Australia (March – July 2010)
 MASCOS, Australia (March – July 2010)
 Cochlear, Australia (March – May 2010)
 Red Square Productions, Australia (April 2010)
 Victoria Hospitals Foundation, Canada (March 2009)
 Qantas Airways Limited, Australia (June 2007)
 Lene Højland Grafisk Design, Denmark (April 2007)
 Aasted-Mikroverk, Denmark (Dec 2004 – Aug 2005)

ADMINISTRATION

Editor of *Parabola* (November 2015 –)
 Managing Editor for the *Australasian Journal of Combinatorics* (August 2011 –)
 Area Editor for the *Journal of Algebra, Combinatorics, Discrete Structures and its Applications* (April 2014 –)
 Chair of the Publicity Committee, MATH, UNSW (July 2014 –)
 Member of the Research Committee, MATH, UNSW (October 2015 –)
 Pure Representative on the Postgraduate Committee, MATH, UNSW (September 2013 –)
 Academic Advisor, MATH, UNSW (August 2010 –)
 School liaison for the UNSW MathSoc, MATH, UNSW (Jan 2012 –)
 Lecturer's Representative for the School Standing Committee, UNSW (June 2011 –)
 Chair of the School Standing Committee, MATH, UNSW (February 2014 – April 2015)
 Member of the Policy and Resources Committee, MATH, UNSW (February – December 2014)
 Organiser of Pure Departmental Seminar, School of Mathematics & Statistics, UNSW (Aug 2010 – Jan 2013)
 Co-organiser of the Joint Colloquium, School of Mathematics and Statistics, UNSW (Aug 2010 – Jan 2013)
 Co-organiser of the 36th Australasian Conference on Combinatorial Mathematics and Combinatorial Computing, UNSW, December 2012 (March 2011 – December 2012)

SUPERVISION

PhD thesis

Adam Mammoliti, UNSW, 2015–
 John Fitzgerald, UNSW (joint supervision with Lyria Bennet Moses, UNSW Law), 2015–
 Haya Saeed Aldosari, UNSW (secondary supervisor; primary supervisor: Catherine Greenhill), 2016–
 Vicki Likourezos, UNSW (secondary supervisor; primary supervisor: Slava Kalyuga, UNSW Arts), 2016–2017
 Ali Hussian Alkhalidi, UNSW (secondary supervisor; primary supervisor: Norman Wildberger), 2010–2014

Honours thesis

Jessica Dai, UNSW, 2017–
 Tyson Churcher, UNSW, 2016
 Duncan Crowley, UNSW, 2016
 Adam Mammoliti, UNSW, 2014
 Elizabeth Alford, UNSW, 2012

Masters thesis

Sin Keong Tong, UNSW, 2017–
 Zhi Yee Chng, UNSW, 2016–
 Maria Fischer, UNSW, 2015
 Salha Ahmed Alshaikay, UNSW, 2012
 Dalal Alanazi, UNSW, 2012
 Saad Althobaiti, UNSW, 2012
 Doug Han Yang, UNSW, 2009
 Ali Alkhalidi, UNSW, 2009
 Marie-Louise Højlund Rasmussen, Technical University of Denmark, 2005

Research Course Project

James Ross, UNSW, 2014

Summer Research Project

Sen Lin, UNSW, 2011
 Kirsten Vo-Phuoc, UNSW, 2012
 Steve Sui, UNSW, 2013
 Adam Mammoliti, UNSW, 2014
 Gary Liang, UNSW, 2015

TEACHING

Lecturer

Algebraic Methods in Number Theory (MATH3521): lectured, wrote course notes, slides, tests, and exams
 UNSW (students: 2008:28 2009:19 2010:36 2011:20 2012:27)
 An Introduction to Combinatorics (Grad course): course design and authority; wrote slides, notes, assignment
 Aalto University (2017: 7 students, 7 other participants)
 Aspects of Combinatorial Optimisation (Grad course): course design and authority; wrote slides, notes, exams
 Kumamoto University (2010: 8 students)
 AMSI Summer School @ University of New South Wales (2012: 16 students)
 Information, Codes and Ciphers (MATH3411): course authority; lectured, wrote slides, tests, and exams
 UNSW (students: 2013S2:77 2014S2:102 2015S2:117 2016S2:126)
 Combinatorics (MATH5505): course design and authority; wrote slides, notes, tests, and exam
 UNSW (students: 2016S1:24)
 Discrete Mathematics (MATH1081): lectured, edited half of the course notes, wrote slides and some exams
 UNSW (students: 2008S2:89 2009S2:112 2010S2:143 2015S1:297 2016S1:346)
 Finite Mathematics (MATH 151): lectured and designed course content, lectures, and midterm exams
 University of Victoria, BC, Canada, (Autumn 2003: 120 students)
 Higher Mathematics 1B (MATH1241, Algebra): lectured, wrote slides, exams, and Chap. 9 of course notes
 UNSW (students: 2010S2:94 2011S2:65 2012S2:85 2013S2:95)
 Mathematics 1A (MATH1131, Algebra): lectured and wrote slides, lecture notes, and exams
 UNSW (students: 2011S1:345 2011S2:287 2012S1:474 2012S2:286 2013S1:381 2014S1:391 2015S2:354)

Tutor

Linear Algebra (Mat10), 2 classes, University of Aarhus, 2001 – 2001
 Probability and Statistics 1 (SS1), 6 classes, University of Aarhus, 1998 – 2002
 Discrete Mathematics (MATH1081), 3 classes, University of New South Wales (UNSW), 2010, 2011, 2014
 Mathematics 1A (MATH1131), 2 classes, UNSW, 2011, 2015
 Higher Mathematics 1A (MATH1141, Algebra), 11 classes, UNSW, 2011 – 2015
 Higher Mathematics 1B (MATH1241, Algebra), 1 class, UNSW, 2012
 Mathematics for Actuarial Studies and Finance 1A (MATH1151, Algebra), 2 classes, UNSW, 2013
 Algebraic Methods in Number Theory (MATH3521), 5 classes, UNSW, 2008 – 2012
 Information, Codes and Ciphers (MATH3411), 10 classes, UNSW, 2013-2016

PEER-REVIEWED PUBLICATIONS

1. A. Mammoliti and T. Britz, On Mubayi's Conjecture and conditionally intersecting sets, submitted.
2. D. Bright, C. Greenhill, T. Britz, A. Ritter and C. Morselli, Criminal network vulnerabilities and adaptations, submitted.
3. T. Britz and P.J. Cameron, The Tutte polynomial and error-correcting codes, chapter in upcoming CRC handbook, submitted.
4. T. Britz and K. Shiromoto, On the covering dimension of a linear code, *IEEE Trans. Inform. Theory* **62** (2016), 2694–2701.
5. D.O. Hunter, T. Britz, M. Jones, and M. Letnic, Reintroduction of Tasmanian devils to mainland Australia can restore top-down control in ecosystems where dingoes have been extirpated: A response to Baker et al. 2016 and Fancourt & Mooney 2016, *Conservation Biology* **196** (2016), 20–21.
6. D.O. Hunter, T. Britz, M. Jones, and M. Letnic, Reintroduction of Tasmanian devils to mainland Australia can restore top-down control in ecosystems where dingoes have been extirpated, *Conservation Biology* **191** (2015), 428–435.
7. T. Britz, K. Shiromoto, and T. Westerbäck, Demi-matroids from codes over finite Frobenius rings, *Des. Codes Cryptogr.* **75** (2015), 97–107.
8. T. Britz, N. Cavenagh, and H.K. Sørensen, Maximal partial Latin cubes, *Electron. J. Combin.* **22**(1) (2015), #P1.81.
9. T. Britz, T. Johnson, and J. Martin, Chains, demi-matroids, and profiles, *IEEE Trans. Inform. Theory* **60** (2014), 986–991.
10. T. Britz, A. Mammoliti and H.K. Sørensen, Proof by picture: A selection of nice picture proofs, *Parabola* **50** (3) (2014), 5–15.
11. T.H. Chan, A. Grant, and T. Britz, Quasi-uniform codes and their applications, *IEEE Trans. Inform. Theory* **59** (2013), 7915–7926.
12. T. Britz, T. Johnson, D. Mayhew, and K. Shiromoto, Wei-type duality theorems for matroids, *Des. Codes Cryptogr.* **62** (2012), 331–341.
13. T. Britz, Code enumerators and Tutte polynomials, *IEEE Trans. Inform. Theory* **56** (2010), 4350–4358.
14. T.H. Chan, A. Grant, and T. Britz, Properties of quasi-uniform codes, In *Proceedings of the 2010 IEEE International Symposium on Information Theory*, pp. 1153–1157, ISIT 10, Austin, USA, June 2010.
15. T. Britz, G. Royle, and K. Shiromoto, Designs from matroids, *SIAM J. Discrete Math.* **23** (2009), 1082–1099.
16. T. Britz and K. Shiromoto, Designs from subcode supports of linear codes, *Des. Codes Cryptogr.* **46** (2008), 175–189.
17. T. Britz and K. Shiromoto, A MacWilliams type identity for matroids, *Discrete Math.* **308** (2008), 4551–4559.
18. T. Britz, Higher support matroids, *Discrete Math.* **307** (2007), 2300–2308.
19. T. Britz, The Moore-Penrose inverse of a free matrix, *Electron. J. Linear Algebra* **16** (2007), 208–215.
20. D. Britz, T. Britz, K. Shiromoto, and H.K. Sørensen, The higher weight enumerators of the doubly-even, self-dual $[48, 24, 12]$ code, *IEEE Trans. Inform. Theory* **53** (2007), 2567–2571.
21. T. Britz, On P -weight and P -distance inequalities, *Discrete Math.* **306** (2006), 598–599.
22. T. Britz, D.D. Olesky, and P. van den Driessche, Schur complements of matrices with acyclic bipartite graphs, *Electron. J. Linear Algebra* **14** (2005), 2–11.
23. T. Britz and C.G. Rutherford, Covering radii are not matroid invariants, *Discrete Math.* **296** (2005), 117–120.
24. T. Britz, Extensions of the Critical Theorem, *Discrete Math.* **305** (2005), 55–73.
25. T. Britz, D.D. Olesky, and P. van den Driessche, Matrix inversion and digraphs: the one factor case, *Electron. J. Linear Algebra* **11** (2004), 115–131.
26. T. Britz, D.D. Olesky, and P. van den Driessche, The Moore-Penrose inverse of matrices with an acyclic bipartite graph, *Linear Algebra Appl.* **390** (2004), 47–60.
27. T. Britz, J.J. McDonald, D.D. Olesky, and P. van den Driessche, Minimal spectrally arbitrary sign patterns, *SIAM J. Matrix Anal. Appl.* **26** (2004), 257–271.
28. T.J. Britz and D. Britz, Mathematical proof of the consistency of Feldberg's simple BDF start in electrochemical digital simulation, *J. Electroanal. Chem.* **546** (2003), 123–125.
29. T. Britz, *Matroids, Codes and Relations*, Ph.D. thesis, University of Aarhus, 2002.
30. T. Britz, MacWilliams identities and matroid polynomials, *Electron. J. Combin.* **9** (2002), R19, 17 pp.
31. T. Britz, The inverse of a non-singular free matrix, *Linear Algebra Appl.* **338** (2001), 245–249.
32. T. Britz and S. Fomin, Finite posets and Ferrers shapes, *Advances in Mathematics* **158** (2001), 86–127.
33. T. Britz, M. Mainetti, and L. Pezzoli, Some operations on the family of equivalence relations, in *Algebraic Combinatorics and Computer Science. A Tribute to Gian-Carlo Rota* (eds. H. Crapo and D. Senato), pp. 445–460, Springer-Verlag, Milano, 2001.

REFEREING AND REVIEWING

Referee for

Advances in Applied Mathematics
 Advances in Mathematics of Communications
 Annales de l'Institut Henri Poincaré D (AIHPD), Combinatorics, Physics and their Interactions
 Applicable Algebra in Engineering, Communication and Computing
 Annals of Combinatorics
 Ars Combinatoria
 Australasian Journal of Combinatorics
 Bulletin of the Australian Mathematical Society
 Bulletin of the Malaysian Mathematical Sciences Society
 Central European Journal of Mathematics
 Designs, Codes and Cryptography
 Discrete Applied Mathematics
 Discrete Mathematics
 Electronic Journal of Combinatorics
 EURASIP Journal on Wireless Communications and Networking
 Graphs and Combinatorics
 Hacettepe Journal of Mathematics and Statistics
 IEEE Transactions on Information Theory
 International Journal of Mathematics and Mathematical Sciences
 Journal of Algebra Combinatorics Discrete Structures and Applications
 Journal of Algebraic Combinatorics
 Journal of Applied Mathematics and Computing
 Journal of Combinatorial Theory Series A
 Journal of Pure and Applied Algebra
 Journal of Symbolic Computation
 Linear Algebra and Applications
 Linear and Multilinear Algebra
 Mathematics in Computer Science
 Moscow Mathematical Journal
 Proceedings of the London Mathematical Society
 SIAM Journal on Discrete Mathematics
 SIAM Journal on Matrix Analysis and Applications
 Special Matrices
 SpringerPlus
 Transactions of the American Mathematical Society
 Turkish Journal of Mathematics

Reviewer for Mathematical Reviews and Zentralblatt MATH (> 150 article and book reviews).

ARC Grant Assessor (13 reports)