

Curriculum Vitae – Carlo R. Laing

Institute of Natural and Mathematical Sciences, Massey University, Auckland, New Zealand
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Education

- 1994–1997 Ph.D., Department of Applied Mathematics and Theoretical Physics, University of Cambridge, United Kingdom. Supervisor: Professor Paul Glendinning.
- 1992–1994 M.Sc. (Physics), First Class Honours, University of Auckland, New Zealand. Masters' thesis completed. Supervisors: Vivien Kirk and Peter Wills.
- 1989–1991 B.Sc., University of Auckland, New Zealand. Subjects studied: Mathematics, Physics, Chemistry, Russian.
- 1984–1988 Pakuranga College, Auckland, New Zealand. Dux of the College and Junior University Scholarship (1988).

Employment

- January 2017– Professor of Mathematics, Massey University, New Zealand. (Albany campus).
- January 2013– Associate Professor of Mathematics, Massey University, New Zealand. (Albany
December 2016 campus).
- January 2007– Senior Lecturer in Mathematics (Range 2 from January 2011), Massey University,
December 2012 New Zealand (Albany campus).
- October 2002– Lecturer in Mathematics, Massey University, New Zealand (Albany campus).
December 2006
- August 2000– Research Associate, Department of Physics, University of Ottawa, Canada.
August 2002
- August 1998– Visiting Research Assistant Professor, Department of Mathematics, University
August 2000 of Pittsburgh, USA.
- April 1998– Research Fellow, Department of Mathematics and Statistics, University of
August 1998 Surrey, UK.
- November 1997– Research Fellow, Centre for Nonlinear Dynamics and its Applications, University
April 1998 College London and Department of Engineering, University of Cambridge, UK.

Awards

- 2016: Awarded Fellowship of New Zealand Mathematical Society.
- 2013: Nominated for Lecturer of the Year (Massey University, Albany Campus).
- 2008: J.H. Michell Medal (ANZIAM¹, outstanding young researcher).
- 2006: Distinguished Teaching Award, Massey University, Auckland, New Zealand.
- 1994–1997: Cambridge Commonwealth Trust Prince of Wales Scholarship and Overseas Research Student Award.
- 1994: Elected Fellow of Cambridge Commonwealth Society.
- 1993: Sagar Geophysics Prize, University of Auckland.
- 1992–1994: University of Auckland Graduate Scholarship.
- 1991: Senior Prize in Physics, University of Auckland.
- 1990: Annual Prize in Physics, University of Auckland.
- 1989: Auckland Pushkin Society Special Prize (for Russian).

Grants

- 2017: Marsden Fund (NZ Government). \$670,000 over 2018–2021.
- 2012: \$2,380 from the Massey University Research Fund (visitor support).
- 2008: Marsden Fund (NZ Government). \$454,000 over 2009–2011.
- 2004: \$3,500 from the Massey University Research Fund (summer student support).
- 2003: Fast Start award from the Marsden Fund (NZ Government). \$100,000 over 2004–2005.
- 2002: \$600 from the New Zealand Mathematical Society for travel to ICIAM 2003, Sydney, Australia.

¹Australia and New Zealand Industrial and Applied Mathematics

Student Supervision

- PhD students:
 - Amanda Elvin, 2005–08. (Recipient of Vice-Chancellor’s Doctoral Scholarship (2005); Aitkin Prize (2005); Highly commended, ANZIAM meeting (2006). Co-supervised with Mick Roberts)
 - Maarten Jordens, 2007–10. (Co-supervised with Gaven Martin)
 - Samuel Dillon, 2008–12. (Co-supervised with Gaven Martin)
 - Steffen Klatt, 2009–10. (Co-supervised with Alona Ben-Tal)
 - Karen McCulloch, 2012-16. (Co-supervised with Mick Roberts)
 - Sidra Zafar, 2017- (Co-supervised with Mick Roberts)
 - Christian Blasche, 2017- (Co-supervised with Gaven Martin)
- PGDipSci project students:
 - Uros Abaz, 2004
 - Amanda Elvin, 2004
- Summer students:
 - Graeme Mak, 2007–8
 - Ben Smith, 2010–11

Publications

Refereed Papers

65. T. Bertalan, Y. Wu, **C. Laing**, C. W. Gear and I. G. Kevrekidis. Coarse-grained descriptions of dynamics for networks with both intrinsic and structural heterogeneities. *Frontiers in Computational Neuroscience*, **11**, 43, 2017.
64. **C. R. Laing**. Chimeras in two-dimensional domains: heterogeneity and the continuum limit. *SIAM Journal on Applied Dynamical Systems*. **16**(2), pp. 974-1014, 2017.
63. **C. R. Laing**. Travelling waves in arrays of delay-coupled phase oscillators. *Chaos*. **26**, 094802, 2016.
62. K. Rajendran, A. C. Tsoumanis, C. I. Siettos, **C. R. Laing** and I. G. Kevrekidis. Modeling heterogeneity in networks using polynomial chaos. *International Journal for Multiscale Computational Engineering*, **14**(3), pp. 291-302 2016.
61. M. Choi, T. Bertalan, **C. R. Laing** and I. G. Kevrekidis. Dimension reduction in heterogeneous neural networks: generalized Polynomial Chaos (gPC) and ANalysis-Of-Variance (ANOVA). *The European Physical Journal Special Topics*, **225**, pp. 1165-1180, 2016.
60. K. McCulloch, M. G. Roberts and **C. R. Laing**. Exact analytical expressions for the final epidemic size of an SIR model on small networks. *The ANZIAM Journal*, **57**, pp. 429-444, 2016.
59. **C. R. Laing**. Bumps in small-world networks. *Frontiers in Computational Neuroscience*, **10**, 53, 2016.
58. R. Thul, S. Coombes and **C. Laing**. Neural field models with threshold noise. *Journal of Mathematical Neuroscience*, **6**, 3, 2016.
57. M. J. Panaggio, D. M. Abrams, P. Ashwin and **C. R. Laing**. Chimera states in networks of phase oscillators: the case of two small populations. *Physical Review E*, **93**, 012218, 2016.
56. **C. R. Laing**. Chimeras in networks with purely local coupling. *Physical Review E*, **92**, 050904(R), 2015.

55. **C. R. Laing** and I. G. Kevrekidis. Equation-free analysis of spike timing dependent plasticity. *Biological Cybernetics*, **109**:6, pp. 701-714, 2015.
54. **C. R. Laing**. Exact neural fields incorporating gap junctions. *SIAM Journal on Applied Dynamical Systems*, **14**(4), pp. 1899-1929, 2015.
53. S. J. Moon, K. A. Cook, K. Rajendran, I. G. Kevrekidis, J. Cisternas and **C. R. Laing**. Coarse-grained clustering dynamics of synaptically coupled heterogeneous neurons. *Journal of Mathematical Neuroscience*, **5**, 2, 2015.
52. **C. R. Laing**. Derivation of a neural field model from a network of theta neurons. *Physical Review E*, **90**, 010901(R), 2014.
51. **C. R. Laing**. Numerical bifurcation theory for high-dimensional neural models. (Invited review article.) *Journal of Mathematical Neuroscience*, **4**, 13, 2014.
50. O. Omel'chenko, M. Wolfrum and **C. R. Laing**. Partially coherent twisted states in arrays of coupled phase oscillators. *Chaos*, **24**, 023102, 2014.
49. L. Shiau and **C. R. Laing**. Periodically forced piecewise linear adaptive exponential integrate-and-fire neuron. *International Journal of Bifurcation and Chaos* **23**, 1350171, 2013.
48. **C. R. Laing**. Disorder-induced dynamics in a pair of coupled heterogeneous phase oscillator networks. *Chaos* **22**, 043104, 2012.
47. **C. R. Laing**, K. Rajendran and I. G. Kevrekidis. Chimeras in random non-complete networks of phase oscillators. *Chaos*, **22**, 013132, 2012.
46. **C. R. Laing**, Y. Zou, B. Smith and I. G. Kevrekidis. Managing heterogeneity in the study of neural oscillator dynamics. *Journal of Mathematical Neuroscience*, **2**, 5, 2012.
45. S. Coombes, H. Schmidt, **C. R. Laing**, N. Svanstedt and J. A. Wyller. Waves in random neural media. *Discrete and Continuous Dynamical Systems – Series A*, **32**, pp. 2951-2970, 2012.
44. **C. R. Laing**. Fronts and bumps in spatially extended Kuramoto networks. *Physica D*, **240**, pp. 1960-1971, 2011.
43. S. Coombes and **C. R. Laing**. Pulsating fronts in periodically modulated neural field models. *Physical Review E*, **83**, 011912, 2011.
42. T. M. Wasylenko, J. E. Cisternas, **C. R. Laing** and I. G. Kevrekidis. Bifurcations of smooth and lurching waves in a one-dimensional thalamic neuronal network. *Biological Cybernetics*, **103**:6, pp. 447-462, 2010.
41. **C. R. Laing**. Chimeras in networks of planar oscillators. *Physical Review E*, **81**, 066221, 2010.
40. **C. R. Laing**, T. Frewen and I. G. Kevrekidis. Reduced models for binocular rivalry. *Journal of Computational Neuroscience*, **28**, 459-476, 2010.
39. A. J. Elvin, **C. R. Laing**, R. I. McLachlan and M. G. Roberts. Exploiting the Hamiltonian structure of a neural field model. Invited article, *Physica D*, **239**, pp. 537-546, 2010.
38. E. A. Martens, **C. R. Laing** and S. H. Strogatz. Solvable model of spiral wave chimeras. *Physical Review Letters*, **104**, 044101, 2010. (Discussed in News and Views, *Nature Physics*, **6**, pp. 164-165, 2010.)
37. **C. R. Laing**. The dynamics of chimera states in heterogeneous Kuramoto networks. *Physica D*, **238**, pp. 1569-1588. 2009.
36. **C. R. Laing**. Chimera states in heterogeneous networks. *Chaos*, **19**, 013113, 2009.
35. S. Coombes and **C. R. Laing**. Instabilities in threshold-diffusion equations with delay. *Physica D*, **238**, pp. 264-272, 2009.

34. A. J. Elvin, **C. R. Laing** and M. G. Roberts. Transient Turing patterns in a neural field model. *Physical Review E*, **79**, 011911, 2009.
33. S. Coombes and **C. R. Laing**. Delays in activity based neural networks. Invited article, *Philosophical Transactions of the Royal Society A*, **367**, pp. 1117–1129, 2009.
32. **C. R. Laing** and I. G. Kevrekidis. Periodically-forced finite networks of heterogeneous coupled oscillators: a low-dimensional approach. *Physica D*, **237**, pp. 207–215, 2008.
31. S. Coombes, N. A. Venkov, L. Shiau, I. Bojak, D. T. J. Liley and **C. R. Laing**. Modeling electrocortical activity through improved local approximations of integral neural field equations. *Physical Review E*, **76**, 051901, 2007. (Selected to appear in *Virtual Journal of Biological Physics Research*, Vol. 14, 2007.)
30. M. R. Owen, **C. R. Laing** and S. Coombes. Bumps, rings, and spots in a two-dimensional neural field: splitting and rotational instabilities. *New Journal of Physics*, **9**, 378, 2007.
29. **C. R. Laing**, T. A. Frewen and I. G. Kevrekidis. Coarse-grained dynamics of an activity bump in a neural field model. *Nonlinearity*, **20**, pp. 2127–2146, 2007.
28. **C. R. Laing** and S. Coombes. The importance of different timings of excitatory and inhibitory pathways in neural field models. *Network: Computation in Neural Systems*, **17(2)**, pp. 151–172, 2006.
27. **C. R. Laing**. On the application of “equation-free” modelling to neural systems. *Journal of Computational Neuroscience*, **20**, pp. 5–23, 2006.
26. **C. R. Laing**. Spiral waves in nonlocal equations. *SIAM Journal on Applied Dynamical Systems*, **4(3)**, pp. 588–606, 2005.
25. **C. R. Laing** and S. Coombes. Mode locking in a periodically forced “ghostbursting” neuron model. *International Journal on Bifurcation and Chaos*, **15(4)**, pp. 1433–1444, 2005.
24. X. Huang, W. C. Troy, S. J. Schiff, Q. Yang, H. Ma, **C. R. Laing** and J.-Y. Wu. Spiral waves in disinhibited mammalian neocortex. *Journal of Neuroscience*, **24(44)**, pp. 9897–9902, 2004.
23. **C. R. Laing**. Ghostbursting in sensory cells of electric fish. Invited article, *Nonlinear Studies*, **11(3)**, pp. 469–480, 2004.
22. **C. R. Laing** and W. C. Troy. PDE methods for nonlocal models. *SIAM Journal on Applied Dynamical Systems*, **2(3)**, pp. 487–516, 2003.
21. **C. R. Laing** and A. Longtin. Periodic forcing of a model sensory neuron. *Physical Review E*, **67** 051928, 2003.
20. **C. R. Laing** and A. Longtin. Dynamics of deterministic and stochastic paired excitatory–inhibitory delayed feedback. *Neural Computation*, **15**, pp. 2779–2822, 2003.
19. L. Noonan, B. Doiron, **C. R. Laing**, A. Longtin and R. W. Turner. A dynamic dendritic refractory period regulates burst discharge in the electrosensory lobe of weakly electric fish. *Journal of Neuroscience*, **23(4)**, pp. 1524–1534, 2003.
18. **C. R. Laing**, B. Doiron, A. Longtin, L. Noonan, R. W. Turner and L. Maler. Type I burst excitability. *Journal of Computational Neuroscience*, **14(3)**, pp. 329–342, 2003.
17. **C. R. Laing** and W. C. Troy. Two-bump solutions of Amari-type models of neuronal pattern formation. *Physica D*, **178**, pp. 190–218, 2003.
16. **C. R. Laing** and A. Longtin. A two-variable model of somatic–dendritic interactions in a bursting neuron. *Bulletin of Mathematical Biology*, **64(5)**, pp. 829–860, 2002.
15. **C. R. Laing**, B. Doiron, A. Longtin and L. Maler. Ghostbursting: the effects of dendrites on spike patterns. *Neurocomputing*, **44–46**, pp. 127–132, 2002.

14. **C. R. Laing**, W. C. Troy, B. S. Gutkin and G. B. Ermentrout. Multiple bumps in a neuronal model of working memory. *SIAM Journal on Applied Mathematics*, **63**(1), pp. 62–97, 2002.
13. **C. R. Laing** and C. C. Chow. A spiking neuron model for binocular rivalry. *Journal of Computational Neuroscience*, **12**(1), pp. 39–53, 2002.
12. B. Doiron, **C. Laing**, A. Longtin and L. Maler. Ghostbursting: a novel neuronal burst mechanism. *Journal of Computational Neuroscience*, **12**(1), pp. 5–25, 2002.
11. **C. R. Laing** and A. Longtin. Noise-induced stabilization of bumps in systems with long-range spatial coupling. *Physica D*, **160**(3–4), pp. 149–172, 2001.
10. B. S. Gutkin, **C. R. Laing**, C. L. Colby, C. C. Chow and G. B. Ermentrout. Turning on and off with excitation: the role of spike-timing asynchrony and synchrony in sustained neural activity. *Journal of Computational Neuroscience*, **11**(2), pp. 121–134, 2001.
9. **C. R. Laing** and C. C. Chow. Stationary bumps in networks of spiking neurons. *Neural Computation*, **13**(7), pp. 1473–1494, 2001.
8. P. Aston and **C. R. Laing**. Symmetry and chaos in the complex Ginzburg–Landau equation. II: Translational Symmetries. *Physica D*, **135**, pp. 79–97, 2000.
7. P. Aston and **C. R. Laing**. Symmetry and chaos in the complex Ginzburg–Landau equation. I: Reflectional Symmetries. *Dynamics and Stability of Systems*, **14**(3), pp. 233–253, 1999.
6. **C. R. Laing**, A. McRobie and J. M. T. Thompson. The postprocessed Galerkin method applied to nonlinear shell vibrations. *Dynamics and Stability of Systems*, **14**(2), pp. 163–181, 1999.
5. **C. R. Laing**. Rotating waves in rings of coupled oscillators. *Dynamics and Stability of Systems*, **13**(4), pp. 305–318, 1998.
4. **C. R. Laing** and P. Glendinning. Bifocal homoclinic bifurcations. *Physica D*, **102**, pp. 1–14, 1997.
3. P. Glendinning and **C. R. Laing**. A homoclinic hierarchy. *Physics Letters A*, **211**, pp. 155–160, 1996.
2. P. Hirschberg and **C. R. Laing**. Successive homoclinic tangencies to a limit cycle. *Physica D*, **89**, pp. 1–14, 1995.
1. M. Persson and **C. Laing**. Low-dimensional behaviour of nonlinear tearing mode dynamics in a rotating plasma. *International Journal on Bifurcation and Chaos*, **3**(5), pp. 1155–1168, 1993.

Book chapters

1. **C. R. Laing**. Phase oscillator network models of brain dynamics, pp. 505–517 in *Computational Models of Brain and Behavior*. Edited by Ahmed Moustafa. (Wiley-Blackwell). 2017.
2. **C. R. Laing**. Waves in spatially-disordered neural fields: a case study in uncertainty quantification, pp. 367–391 in *Uncertainty in Biology: A Computational Modeling Approach*. Edited by David Gomez and Liesbet Geris. (Springer-Verlag). 2016.
3. **C. R. Laing**. PDE methods for two-dimensional neural fields, pp. 153–173 in *Neural Fields: Theory and Applications*. Edited by Stephen Coombes, Peter beim Graben, Roland Potthast, and James J. Wright. (Springer). 2014.
4. **C. R. Laing** and B. Doiron. Ghostbursting: the role of active dendrites in electrosensory processing, pp. 145–172 in *Bursting: The Genesis of Rhythm in the Nervous System*. Edited by S. Coombes and P. Bressloff. (World Scientific). Hackensack, NJ. 2005.
5. A. Longtin, **C. R. Laing** and M. J. Chacron. Correlations and memory in neurodynamical systems, pp. 286–308 in *Processes with Long Range Correlations*. Edited by G. Rangarajan and M. Ding. (Springer-Verlag, Berlin). 2003.

Books Edited

- *Stochastic Methods in Neuroscience*. Edited by **C. Laing** and G. J. Lord. Oxford University Press, New York. 2009. ISBN 978-0199235070.

Popular

1. **C. R. Laing**. Taking the Pulse. *Physics*. **7**, p. 10, 2014.
2. **C. R. Laing**. Not so shocking: the electric fish of South America. *South American Explorer*. **69** pp. 32–36, 2002.

Theses

- Ph.D. thesis (1997): Coupled oscillator networks.
- M.Sc. thesis (1994): Merging of resonance tongues near the saddle–node/Hopf bifurcation.

Book Reviews

1. *Mathematics Handbook for Science and Engineering* by Lennart Råde and Bertil Westergren. Reviewed for the NZ Mathematical Society Newsletter, no. 93 (2005).
2. *Mathematical Biology. II: Spatial Models and Biomedical Applications* by J. D. Murray. Reviewed for NZ the Mathematical Society Newsletter, no. 90 (2004).
3. *Mathematical Biology. I: An Introduction* by J. D. Murray. Reviewed for the NZ Mathematical Society Newsletter, no. 87 (2003).

Unrefereed Papers

1. A. Elvin and **C. Laing**. Evaluation of numerical integration schemes for a partial integro-differential equation. *Research Letters in Information and Mathematical Sciences*, **7**, pp. 171-186, 2005.

Lecturing Experience

Institute of Information and Mathematical Sciences, Massey University, Auckland, New Zealand

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Mathematics for Business (1st year). Four hrs/week. 130–185 students.	x	x		x						
Calculus (1st year). Four hrs/week. 80 students.					x					
Technological Maths (2nd year). Four hrs/week. 40–45 students.	x		x	x	x					x
Differential Equations 2 (3rd year). Four hrs/week. 4–16 students.						x		x	x	
Methods in Applied Mathematics (graduate). Three hrs/week. 2–3 students.		x			x	x	x		x	
Studies in Applied Differential Equations (graduate). Three hrs/week. 2–4 students.			x							x

	2013	2014	2015	2016	2017
Engineering Maths (2nd year). Four hrs/week. 60–65 students.	x				
Studies in Applied Differential Equations (graduate). Three hrs/week. 1-4 students.	x	x	x	x	
Mathematics 1B (1st year). Four hrs/week. 70 students.	x				
Engineering Mathematics 1B (1st year). Six hrs/week (accelerated). 15 students.	x				
Mathematics 1B (1st year). Four hrs/week. 20 students.		x			
Engineering Mathematics 1B (1st year). Four hrs/week. 70 students.		x	x	x	x
Differential Equations 2 (3rd year). Four hrs/week. 4–16 students.			x	x	x
Calculus 2. (2nd year) Four hrs/week. 12 students.			x		

Department of Mathematics, University of Pittsburgh, PA, USA

	1998	1999
Analytical Geometry and Calculus I (undergraduate). Three hrs/week. 50 students.	x (×2)	
Analytical Geometry and Calculus II (undergraduate). Three hrs/week. 50 students.		x
Analytical Geometry and Calculus III (undergraduate). Three hrs/week. 50 students.		x
Methods in Applied Mathematics (graduate). Three hrs/week. 10 students.		x
Mathematical Neuroscience (graduate). Two hrs/week. 15 students. Shared course load with two other faculty members.		x

Editorial

- 2010–present: Editorial Board, *Journal of Mathematical Neuroscience* (Springer).
- 2013–present: Editorial Board, *Applied Mathematical Modelling* (Elsevier).
- 2015–present: Editorial Board, *Frontiers in Computational Neuroscience*.

Administration

- 2012: Michell medal (ANZIAM) chair of selection panel.
- 2011-13: Michell medal (ANZIAM) selection panel.
- Dec 2004-Dec 2008: Chair, New Zealand branch of ANZIAM.
- Dec 2008-Dec 2009: Committee member, New Zealand branch of ANZIAM.
- July 2003–present: Seminar organiser, IIMS, Massey University.
- 2003: Organised First Annual Auckland/Waikato Region Applied Maths Day.

Refereeing

Papers refereed for:

Annals of Physics (1)
ANZIAM Journal (1)
Applied Numerical Mathematics (1)
BioEssays (1)
Biological Cybernetics (6)
Bulletin of Mathematical Biology (4)
Bulletin of the Malaysian Mathematical Sciences Society (1)
Chaos (14)

Cogent Mathematics (1)
 Comptes rendus Mathématique (1)
 Discrete and Continuous Dynamical Systems – Series A (1)
 Discrete and Continuous Dynamical Systems – Series B (2)
 Discrete Dynamics in Nature and Society (1)
 Dynamical Systems: An International Journal (3)
 Dynamics and Stability of Systems (2)
 European Journal of Physics (2)
 Europhysics Letters (4)
 Frontiers in Computational Neuroscience (1)
 Frontiers in Human Neuroscience (1)
 Frontiers of Physics (1)
 Geosciences (1)
 IEEE Transactions on Neural Networks (3)
 International Journal of Non-Linear Mechanics (1)
 Journal of Biological Dynamics (1)
 Journal of Biological Systems (1)
 Journal of Computational Neuroscience (12)
 Journal of Mathematical Analysis and Applications (1)
 Journal of Mathematical Biology (4)
 Journal of Mathematical Neuroscience (5)
 Journal of Neurophysiology (1)
 Journal of Nonlinear Science (2)
 Journal of Physics A (7)
 Journal of Theoretical Biology (3)
 Mathematical Biosciences (2)
 Mathematical Medicine and Biology (1)
 Mathematical Modelling and Analysis (1)
 Mathematical Problems in Engineering (1)
 Nature Communications (2)
 Nature Physics (1)
 Network: Computation in Neural Systems (1)
 Neural Computation (5)
 Neural Networks (2)
 Neural Processing Letters (1)
 Neurocomputing (3)
 New Journal of Physics (3)
 Nonlinear Analysis: Real World Applications (3)
 Nonlinearity (9)
 Philosophical Transactions of the Royal Society A (1)
 Physica A (1)
 Physica D (17)
 Physical Review E (33)
 Physical Review Letters (15)
 Physical Review X (3)
 Physics Letters A (6)
 PLoS Computational Biology (2)
 PLoS One (4)
 Proceedings of the Royal Society, Series A (4)
 Science Advances (1)
 Scientific Reports (4)
 SIAM Journal on Applied Dynamical Systems (18)
 SIAM Journal on Applied Mathematics (2)
 SIAM Journal on Mathematical Analysis (1)
 SIAM Journal on Scientific Computing (1)

Theses examined:

M.Sc. (4)

Ph.D. (Auckland (3), Massey (1), UNSW (1), University of Queensland (1))

Reviewer:

Reviewer for Zentralblatt MATH since 2012.

Reviewer for Mathematical Reviews since 2005.

Grant reviewer for the Dutch National Science Foundation (2007, 2012, 2013).

Grant reviewer for the Georgia National Science Foundation (2009, 2015).

Grant reviewer for the Romanian National Council for Scientific Research (2012).

Grant reviewer for the Canada Research Chair Programme (2014).

Grant reviewer for the Katholieke Universiteit Leuven (2014).

Grant reviewer for the Austrian Science Fund (2015, 2016).

Grant reviewer for the Deutsche Forschungsgemeinschaft (2015,2017(x2)).

Grant reviewer for the European Research Council (2017).

Reviewer for ICNAAM (2008, 2009, 2011, 2013, 2017).

Book reviewer for Springer (2012).

Reviewer for University Research Fellowship (Royal Society, UK) (2017).

Programme Committee, International Conference on Mathematical Neuroscience (2016,2017,2018).

Grant reviewer for Serrapilheira (Brazil) (2017).

Talks, Conferences

- 2017:
- Oral presentation, ANZIAM Meeting, Hahndorf, Australia.
 - Seminars at the University of Sydney, Max Planck Institute for the Physics of Complex Systems (Dresden, Germany).
 - Oral presentation, 7th Workshop on High-Dimensional Approximation, Sydney, Australia.
 - Invited presentation, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA.
 - Oral presentation, International Conference on Mathematical Neuroscience, Boulder, Colorado.
 - Invited presentation, annual meeting of the Japanese Society for Mathematical Biology, Sapporo, Japan.
 - Invited presentation, Satellite workshop of Japanese Society for Mathematical Biology, “Patterns and dynamics with nonlocal effect”, Jozean, Japan.
- 2016:
- Oral presentation, ANZIAM Meeting, Canberra, Australia.
 - Invited oral presentation, NeuroEng 2016, Brisbane, Australia.
 - Oral presentation, New Zealand Mathematical Society Colloquium, Wellington.
 - Seminar at Massey University.
- 2015:
- Oral presentation, ANZIAM Meeting, Gold Coast, Australia.
 - Seminars at Universities of Nottingham, Exeter, Technical University of Munich.
 - Invited plenary, workshop on Dynamics of Coupled Oscillators: 40 years of the Kuramoto Model, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany.
 - Invited presentation, Equadiff 2015, Lyon, France.
 - Invited presentation, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA.
- 2014:
- Oral presentation, ANZIAM Meeting, Rotorua, New Zealand.
 - Invited plenary, Mathematical Sciences Symposium, AUT University, Auckland, New Zealand.
 - Seminars at Massey University, Northwestern University (Chicago), Universities of Leeds, Nottingham.
 - Invited presentation, International Workshop on Neurodynamics, Castro Urdiales, Spain.
 - Invited presentation, workshop on Rhythms in Complex Networks: From Theory to Experiment, Copenhagen, Denmark.
 - Invited presentation, Dynamics Days Europe, Bayreuth, Germany.
- 2013:
- Talk, Orewa College, Auckland.
 - Oral presentation, New Zealand Mathematical Society Colloquium, Tauranga.

- Two invited presentations, Workshop on Progress of Mathematical Studies in Neuroscience, National Tsing-Hua University, Taiwan.
 - Invited presentation, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA.
 - Oral presentation, ANZIAM Meeting, Newcastle, Australia.
 - Seminar at Massey University.
- 2012:
- Seminars at Massey University; Weierstrass Institute, Berlin, Germany.
 - Oral presentation, ANZIAM Meeting, Warrnambool, Australia.
 - Invited plenary, BrainModes 2012, Brisbane, Australia.
 - Invited presentation, workshop on Mathematical Challenges in Neural Network Dynamics, Mathematical Biosciences Institute, Columbus, OH, USA.
 - Invited presentation, SIAM Conference on Life Sciences, San Diego, CA, USA.
 - Invited presentation, Dynamics Days Europe, Gothenburg, Sweden.
 - Talk, Orewa College, Auckland.
- 2011:
- Invited presentation, Conference on Spatio-temporal Evolution Equations and Neural Fields, Centre International de Rencontres Mathématiques, Marseille, France.
 - Oral presentation, ANZIAM Meeting, Adelaide, Australia.
 - Seminars at the Universities of Auckland and Maryland, Princeton, Massey and Drexel Universities, New Jersey Institute of Technology, Weierstrass Institute (Berlin, Germany).
 - Invited presentation, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA.
 - Talk, Whangaparaoa College, Auckland.
- 2010:
- Oral presentation, New Zealand Mathematical Society Colloquium, Otago University, Dunedin.
 - Invited presentation, Conference on Progress in Neural Field Theory, University of Reading, UK.
 - Poster presentation, OCCAM Computational Neuroscience Workshop, Oxford, UK.
 - Talk, Albany Senior High School, Auckland.
 - Invited presentation, International Workshop on Nonlinear Dynamics on Networks, Kiev, Ukraine.
 - Seminars at Princeton University, University of Manchester.
 - Poster presentation, SIAM Conference on Life Sciences, Pittsburgh, PA, USA.
 - Invited presentation, 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Dresden, Germany.
 - Invited plenary, ANZIAM Meeting, Queenstown, New Zealand.
- 2009:
- Seminars at Massey University (Albany), Heriot-Watt, Warwick, Leeds, Manchester, Surrey, Nottingham, Exeter and Pompeu Fabra (Barcelona) Universities.
 - Invited presentation, Mathematical Neuroscience Workshop, Edinburgh, UK.
 - Oral presentation, Noise in Life, Cambridge, UK.
 - Oral presentation, Conference on Dynamics in Systems Biology, Aberdeen, UK.
 - Invited presentation, EPSRC Capstone Conference, Warwick University, UK.
 - Invited presentation, Workshop on Mathematical Medicine and Biology, University of Nottingham, UK.
- 2008:
- Oral presentation, NZ Mathematical Society Colloquium, University of Canterbury, Christchurch.
 - Seminars at Massey (Albany) and Heriot-Watt Universities, University of Leeds.
 - Invited presentations (2), Workshop on Mathematical Medicine and Biology, University of Nottingham, UK.
 - Oral presentation, ANZIAM Meeting, Katoomba, Australia.
 - Poster presentation, Workshop on Multi-scale Modelling of the Respiratory System, Auckland.
- 2007:
- Invited presentation, Mathematical and Computational Nanoscience Meeting, Victoria University, Wellington, New Zealand.
 - Oral presentation, New Zealand Mathematical Society Colloquium, Victoria University, Wellington, New Zealand.
 - Oral presentation, ANZIAM Meeting, Fremantle, Australia.
 - Seminar at University of Canterbury, Christchurch, New Zealand.
 - Invited presentations (2), SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA.

- 2006: • Oral presentation, New Zealand Mathematical Society Colloquium, Waikato University, Hamilton.
• Invited presentation, opening of Centre for Mathematical Biology, Massey University, Auckland.
• Oral presentation, Manawatu-Wellington Applied Maths Day, Palmerston North, New Zealand.
• Poster presentation, Workshop on Mathematical and Computational Neuroscience, Brisbane, Australia.
• Oral and poster presentation, SIAM Conference on Life Sciences, Raleigh, NC, USA.
• Oral presentation, Nonlinear Dynamics and Numerical Analysis meeting, Victoria University, Wellington, New Zealand.
• Oral presentation, ANZIAM Meeting, Mansfield, Australia.
- 2005: • Oral presentation, Workshop on Bio-mathematics and Numerical Analysis, Auckland.
• Oral presentation, New Zealand Mathematical Society Colloquium, Palmerston North.
• Career seminar, Massey University (Albany) Open Day.
• Invited presentations (2), SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA.
• Seminars at Massey University, Universities of Ottawa, Manchester, Bristol, Nottingham, Auckland.
• Invited oral presentation, Mathematical Neuroscience Workshop, Edinburgh, UK.
• Oral presentation, ANZIAM Meeting, Napier, New Zealand.
- 2004: • Oral presentation, New Zealand Mathematical Society Colloquium, Otago University, Dunedin.
• Oral presentation, Manawatu-Wellington Applied Maths Day, Palmerston North.
• Oral presentation, Nonlinear Dynamics and Numerical Analysis meeting, Raglan.
• Oral presentation, SIAM Conference on Life Sciences, Portland, OR, USA.
• Seminars at Massey University (Albany), Universities of Houston, Auckland.
• Oral presentation, ANZIAM Meeting, Hobart, Australia.
- 2003: • Talk, Maths Teachers' Evening, Massey University (Albany).
• Invited speaker, Modelling Cellular Function meeting, Waiheke Island.
• Invited minisymposium organiser and speaker, International Congress on Industrial and Applied Mathematics, Sydney, Australia.
• Seminars at Massey University (Albany, Palmerston North), Universities of Waikato, Auckland (Mathematics, Bioengineering).
• Poster and oral (2) presentations, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA.
• Invited participant and speaker, Symmetry and Bifurcation in Biology Meeting, Banff International Research Station, Canada.
- 2002: • Seminars at Instituto de Investigaciones Biológicas "Clemente Estable" (Uruguay), Boston and McGill Universities, University of Pittsburgh.
• Poster presentation, First SIAM Conference on Life Sciences, Boston, MA, USA.
• Invited talk, Fourth International Conference on Dynamical Systems and Differential Equations, Wilmington, NC, USA.
• Poster presentation, Computational Neuroscience '02, Chicago, IL, USA.
• Oral presentation, New Zealand Mathematics Colloquium, Auckland.
- 2001: • Oral and poster presentation, Sixth SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA.
• Invited talk, Annual Canadian Applied and Industrial Math Society Meeting, Victoria, BC, Canada.
• Oral presentation, Computational Neuroscience '01, Monterey, CA, USA.
• Seminars at Universities of Ottawa and Auckland.
• Invited talk, Ontario Medical Students' Weekend Meeting, Ottawa, Canada.
• Invited participant, Workshop on Computational Biology, Fields Institute, Toronto, Canada.
- 2000: • Seminars at Universities of Loughborough (UK) and Pittsburgh.
• Poster presentation, Nonlinear Analysis 2000 → Conference, Courant Institute, New York, NY, USA.

- Poster presentation, Computational Neuroscience '00, Brugge, Belgium.
 - Invited presentation, Workshop on Memory, Delays and Multistability. Centre de recherches mathématiques, Université de Montréal, Québec, Canada.
- 1999: • Invited presentation, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA.
- Seminars at Universities of Pittsburgh and Victoria (Canada).
 - Oral presentation, Computational Neuroscience '99, Pittsburgh, PA, USA.
- 1998: • Seminars at Universities of Bristol, Surrey, Pittsburgh and University College London.
- Oral presentation, UK Dynamics Days, Edinburgh, UK.
- 1997: • Seminars at Universities of Surrey, Auckland and Cambridge.
- Poster presentation, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA.
- 1996: • Seminar at University of Cambridge.
- 1994: • Seminar at University of Auckland.

Long-term Visits

- June-December 2009: Department of Mathematics, University of Nottingham, UK.
- July-December 2011: Department of Chemical and Biological Engineering, Princeton University, USA.

Summer Schools Attended

- August 1999: Methods in Computational Neuroscience, Marine Biological Laboratory, Woods Hole, MA, USA.
- June 1994: Fifth Annual Complex Systems Summer School, Santa Fe Institute, NM, USA.
- Summer 1991–92: Vacation Scholar, Department of Theoretical Physics, Australian National University, Canberra, Australia.