Prof Konstantin Blyuss

Curriculum Vitae

Address:	Department of Mathematics
	University of Sussex
	Falmer, Brighton, BN1 9QH
	United Kingdom
Telephone:	+44 (0)1273 872878
Fax:	+44 (0)1273 678097
E-mail:	k.blyuss@sussex.ac.uk
Web:	http://users.sussex.ac.uk/∼kb275
Languages:	English, German, Ukrainian, Russian

Employment

Oct 2023 - present	Professor of Applied Mathematics, Department of Mathematics, University of Sussex, UK
June 2017 - Sept 2023	Reader in Mathematics, Department of Mathematics, University of Sussex, UK
Oct 2010 - May 2017	Lecturer, Senior Lecturer, Department of Mathematics, University of Sussex, UK
Aug 2008 - Sept 2010	Lecturer in Complexity Sciences, Department of Engineering Mathematics, University of Bristol, UK
Oct 2006 - July 2008	Temporary Lecturer in Applied Mathematics, School of Computing and Mathematics, Keele University, UK
Mar 2006 - Sept 2006	Postdoctoral mathematical biologist, Department of Zoology, University of Oxford, UK
Oct 2003 - Feb 2006	EPSRC Research Fellow, Department of Mathematical Sciences, University of Exeter, UK

Education

2015-present Fellow of the Higher Education Academy, UK

2006-2007 Postgraduate Certificate in Higher Education,
Keele University, UK

2000-2003 PhD in mathematics, University of Surrey, UK
Thesis title: "Perturbed multi-symplectic systems: intersections of invariant manifolds and transverse instability"

1999-2000 Diploma (M.Sc.) in theoretical physics, Brandenburg Technical University (BTU), Germany

1995-2000 B.Sc., Diploma (M.Sc.) with Distinction in physics, Dnipropetrovsk State University, Ukraine

Publication list (h-index: 30)

76. F. Al Basir, **K.B. Blyuss**, E. Venturino, Stability and bifurcations of a multi-delay model for mosaic disease transmission, *AIMS Math.* **8**, 24545-24567 (2023).

75. **K.B. Blyuss**, Y.N. Kyrychko, Sex, ducks and rock'n'roll: mathematical model of sexual response, *Chaos* **33**, 043106 (2023).

74. Y.N. Kyrychko, **K.B. Blyuss**, Vaccination games and imitation dynamics with memory, *Chaos* **33**, 033134 (2023).

73. **K.B. Blyuss**, Y.N. Kyrychko, O.B. Blyuss, Complex dynamics near extinction in a predator-prey model with ratio dependence and Holling type III functional response, *Front. Appl. Math. Stat.* **8**, 1083815 (2022).

72. M. Aguiar, V. Anam, **K.B. Blyuss**, C.D.S. Estadilla, B.V. Guerrero, D. Knopoff, B.W. Kooi, A.K. Srivastav, V. Steindorf, N. Stollenwerk, Mathematical models for dengue fever epidemiology: A 10-year systematic review, *Phys. Life Rev.* **40**, 65-92 (2022).

71. I.Z. Kiss, **K.B. Blyuss**, Y.N. Kyrychko, J. Middleton, D. Roland, L. Bertini, L. Bogen-Johnston, W. Wood, R. Sharp, J. Forder, J.A. Cassell, How can risk of COVID-19 transmission be minimised in domiciliary care for older people: development, parameterisation and initial results of a simple mathematical model, *Epi. Inf.* **150**, e13 (2022).

70. A. Ross, S.N. Kyrychko, **K.B. Blyuss**, Y.N. Kyrychko, Dynamics of coupled Kuramoto oscillators with distributed delays, *Chaos* **31**, 103107 (2021).

69. **K.B. Blyuss**, S.N. Kyrychko, Y.N. Kyrychko, Time-delayed and stochastic effects in a predator-prey model with ratio dependence and Holling Type III functional response, *Chaos* **31**, 073141 (2021).

68. F. Al Basir, Y.N. Kyrychko, **K.B. Blyuss**, S. Ray, Effects of vector maturation time on the dynamics of Cassava Mosaic Disease, *Bull. Math. Biol.* **83**, 87 (2021).

67. **K.B. Blyuss**, Y.N. Kyrychko, Effects of latency and age structure on the dynamics and containment of COVID-19, *J. Theor. Biol.* **513**, 110587 (2021).

66. **K.B. Blyuss**, F. Al Basir, V.A. Tsygankova, L.O. Biliavska, G.O. Iutynska, S.N. Kyrychko, S.V. Dziuba, O.I. Tsyliuryk, O.O. Izhboldin, Control of mosaic disease using microbial biostimulants: insights from mathematical modelling, *Ric. di Matem.* **69**, 437-455 (2020).

65. B. Rahman, M.A. Yau, Y.N. Kyrychko, **K.B. Blyuss**, Dynamics of a predator-prey model with discrete and distributed delay, *Int. J. Dyn. Syst. Diff. Eqns.* **10**, 427-449 (2020).

64. Y.N. Kyrychko, **K.B. Blyuss**, I. Brovchenko, Mathematical modelling of the dynamics and containment of Covid-19 in Ukraine, *Sci. Reps.* **10**, 19662 (2020).

63. B. Rahman, Y.N. Kyrychko, **K.B. Blyuss**, Dynamics of unidirectionally-coupled ring neural network with discrete and distributed delays, *J. Math. Biol.* **80**, 1617-1653 (2020).

62. L.B. Nicholson, **K.B. Blyuss**, F. Fatehi, Quantifying the role of stochasticity in the development of autoimmune disease, *Cells* **9**, 860 (2020).

61. F. Fatehi, Y.N. Kyrychko, **K.B. Blyuss**, Stochastic dynamics in a time-delayed model for autoimmunity, *Math. Biosci.* **322**, 108323 (2020).

60. F. Fatehi, Y.N. Kyrychko, **K.B. Blyuss**, A new approach to simulating stochastic delayed systems, *Math. Biosci.* **322**, 108327 (2020).

59. F. Fatehi, Y.N. Kyrychko, **K.B. Blyuss**, Time-delayed model of autoimmune dynamics, *Math. Biosci. Eng.* **16** 5613-5639 (2019).

58. **K.B. Blyuss**, F. Fatehi, V.A. Tsygankova, L.O. Biliavska, G.O. Iutynska, A.I. Yemets, Ya.B. Blume, RNAi-based biocontrol of wheat nematodes using natural polycomponent biostimulants, *Front. Plant Sci.* **10**, 483 (2019).

57. F. Fatehi, Y.N. Kyrychko, R. Molchanov, **K.B. Blyuss**, Bifurcations and multistability in a model of cytokine-mediated autoimmunity, *Int. J. Bif. Chaos* **29** 1950034 (2019).

56. F. Al Basir, **K.B. Blyuss**, S. Ray, Modelling the effects of awareness-based interventions to control the mosaic disease of *Jatropha curcas*, *Ecol. Compl.* **36**, 92-100 (2018).

55. B. Rahman, Y.N. Kyrychko, **K.B. Blyuss**, S.J. Hogan, Dynamics of a subthalamic nucleus-globus palidus network with three delays, *IFAC-PapersOnline* **51**, 294-299 (2018).

54. F. Fatehi, Y.N. Kyrychko, **K.B. Blyuss**, Effects of viral and cytokine delays on dynamics of autoimmunity, *Mathematics* **6**, 66 (2018).

53. N. Sherborne, **K.B. Blyuss**, I.Z. Kiss, Bursting endemic bubbles in an adaptive network, *Phys. Rev. E* **97**, 042306 (2018).

52. F. Fatehi Chenar, Y.N. Kyrychko, **K.B. Blyuss**, Mathematical model of immune response to hepatitis B, *J. Theor. Biol.* **447**, 98-110 (2018).

51. F. Fatehi, S.N. Kyrychko, A. Ross, Y.N. Kyrychko, **K.B. Blyuss**, Stochastic effects in autoimmune dynamics, *Frontiers Physiol.* **9**, 45 (2018).

50. N. Sherborne, J.C. Miller, **K.B. Blyuss**, I.Z. Kiss, Mean-field models for non-Markovian epidemics on networks, *J. Math. Biol.* **76**, 755-778 (2018).

49. G.O. Agaba, Y.N. Kyrychko, **K.B. Blyuss**, Dynamics of vaccination in a time-delayed epidemic model with awareness, *Math. Biosci.* **294**, 92-99 (2017).

48. L. Bauer, J. Bassett, P. Hvel, Y.N. Kyrychko, **K.B. Blyuss**, Chimera states in multi-strain epidemic models with temporary immunity, *Chaos* **27**, 114317 (2017).

47. B. Rahman, **K.B. Blyuss**, Y.N. Kyrychko, Aging transition in systems of oscillators with global distributed-delay coupling, *Phys. Rev. E* **96**, 032203 (2017).

46. G.O. Agaba, Y.N. Kyrychko, **K.B. Blyuss**, Time-delayed SIS epidemic model with population awareness, *Ecol. Compl.* **31**, 50-56 (2017).

45. G. Neofytou, Y.N. Kyrychko, **K.B. Blyuss**, Time-delayed model of RNA interference, *Ecol. Compl.* **30**, 11-25 (2017).

44. G.O. Agaba, Y.N. Kyrychko, **K.B. Blyuss**, Mathematical model for the impact of awareness on the dynamics of infectious diseases, *Math. Biosci.* **286**, 22-30 (2017).

43. N. Sherborne, **K.B. Blyuss**, I.Z. Kiss, Compact pairwise models for epidemics with multiple infectious stages on degree heterogeneous and clustered networks, *J. Theor. Biol.* **407**, 387-400 (2016).

42. G. Neofytou, Y.N. Kyrychko, **K.B. Blyuss**, Mathematical model of plant-virus interactions mediated by RNA interference, *J. Theor. Biol.* **403**, 129-142 (2016).

41. **K.B. Blyuss**, Mathematical modelling of the dynamics of meningococcal meningitis in Africa, pp. 221-226, in P.J. Aston, A.J. Mulholland, K.M.M. Tant (Eds.), *UK Success Stories in Industrial Mathematics*, Springer (2016).

40. (Editorial) Systems medicine of cancer: bringing together clinical data and nonlinear dynamics of genetic networks, **K.B. Blyuss**, R. Manchanda, J. Kurths, A. Alsaedi, A. Zaikin, Comp. Math. Mod. Med. 2016, 7904693 (2016).

39. G. Neofytou, Y.N. Kyrychko, **K.B. Blyuss**, Time-delayed model of immune response in plants, *J. Theor. Biol.* **289**, 28-39 (2016).

38. B. Rahman, **K.B. Blyuss**, Y.N. Kyrychko, Dynamics of neural systems with discrete and distributed time delays, *SIAM J. Appl. Dyn. Syst.* **14**, 2069-2095 (2015).

37. N. Sherborne, **K.B. Blyuss**, I.Z. Kiss, Dynamics of multi-stage infections on networks, *Bull. Math. Biol.* **77**, 1909-1933 (2015).

36. K. Parmar, **K.B. Blyuss**, Y.N. Kyrychko, S.J. Hogan, Time-delayed models of gene regulatory networks, *Comp. Math. Meth. Med.* **2015**, 347273 (2015).

35. **K.B. Blyuss**, L.B. Nicholson, Understanding the roles of activation threshold and infections in the dynamics of autoimmune disease, *J. Theor. Biol.* **375**, 13-20 (2015).

34. **K.B. Blyuss**, Analysis of symmetries in models of multi-strain infections, *J. Math. Biol.* **69**, 1431-1459 (2014).

33. Y.N. Kyrychko, **K.B. Blyuss**, E. Schöll, Synchronization of networks of oscillators with distributed delay coupling, *Chaos* **24**, 043117 (2014).

32. **K.B. Blyuss**, Y.N. Kyrychko, Instability of disease-free equilibrium in a model of malaria with immune delay, *Math. Biosci.* **248**, 54-56 (2014).

31. A. Zakharova, I. Schneider, Y.N. Kyrychko, **K.B. Blyuss**, A. Koseska, B. Fiedler, E. Schöll, Time delay control of symmetry-breaking primary and secondary oscillation death, *Europhys. Lett.* **104**, 50004 (2013).

30. Y.N. Kyrychko, **K.B. Blyuss**, E. Schöll, Amplitude and phase dynamics in oscillators with distributed-delay coupling, *Phil. Trans. Roy. Soc. A* **371**, 20120466 (2013).

29. P. Rattana, **K.B. Blyuss**, K.T.D. Eames, I.Z. Kiss, A class of pairwise models for epidemic dynamics on weighted networks, *Bull. Math. Biol.* **75**, 466-490 (2013).

28. **K.B. Blyuss**, The effects of symmetry on the dynamics of antigenic variation, *J. Math. Biol.* **66**, 115-137 (2013).

27. **K.B. Blyuss**, Y.N. Kyrychko, Symmetry breaking in a model of antigenic variation with immune delay, *Bull. Math. Biol.* **74**, 2488-2509 (2012).

26. E. Ullner, S. Aures, L.G. Morelli, A.C. Oates, F. Juelicher, E. Nicola, R. Heussen, D. Whitmore, **K.B. Blyuss**, M. Fryett, A. Zakharova, A. Koseska, N.R. Nene, A. Zaikin, Noise and oscillations in biological systems: multidisciplinary approach between experimental biology, theoretical modelling and synthetic biology, *Int. J. Mod. Phys. B* **26**, 1246009 (2012).

25. **K.B. Blyuss**, L.B. Nicholson, The role of tunable activation thresholds in the dynamics of autoimmunity, *J. Theor. Biol.* **308**, 45-55 (2012).

24. T.J. Irving, **K.B. Blyuss**, C. Colijn, C.L. Trotter, Modelling meningococcal meningitis in the African meningitis belt, *Epidemiol. Infect.* **140**, 897-905 (2012).

23. Y.N. Kyrychko, **K.B. Blyuss**, E. Schöll, Amplitude death in systems of coupled oscillators with distributed-delay coupling, *Eur. Phys. J. B* **84**, 307-315 (2011).

22. **K.B. Blyuss**, Y.N. Kyrychko, Stability and bifurcations in an epidemic model with varying immunity period, *Bull. Math. Biol.* **72**, 490-505 (2010).

21. Y.N. Kyrychko, **K.B. Blyuss**, S.J. Hogan, E. Schöll, Control of spatiotemporal patterns in the Gray-Scott model, *Chaos* **19**, 043126 (2009).

20. Y.N. Kyrychko, **K.B. Blyuss**, P. Hövel, E. Schöll, Asymptotic properties of the spectrum of neutral delay differential equations, *Dyn. Syst.* **24**, 361-372 (2009).

19. M. Recker, **K.B. Blyuss**, C.P. Simmons, T. Tinh Hien, B. Wills, J. Farrar, S. Gupta, Immunological serotype interactions and their effect on the epidemiological pattern of dengue, *Proc. Roy. Soc. B* **276**, 2541-2548 (2009).

18. **K.B. Blyuss**, S. Gupta, Stability and bifurcations in a model of antigenic variation in malaria, *J. Math. Biol.* **58**, 923-937 (2009).

17. Y.N. Kyrychko, **K.B. Blyuss**, Persistence of travelling waves in a generalized Fisher equation, *Phys. Lett. A* **373**, 668-674 (2009).

16. **K.B. Blyuss**, Y.N. Kyrychko, P. Hövel, E. Schöll, Control of unstable steady states in neutral time-delayed systems, *Eur. Phys. J. B* **65**, 571-576 (2008).

15. **K.B. Blyuss**, G. Derks, Transverse intersection of invariant manifolds in perturbed multi-symplectic systems, *Dyn. Syst.* **23**, 219-256 (2008).

14. C.D. Wright, **K.B. Blyuss**, P. Ashwin, Master-equation approach to understanding multi-state phase-change memories and processors, *Appl. Phys. Lett.* **90**, 063113 (2007).

13. Y.N. Kyrychko, **K.B. Blyuss**, A. Gonzalez-Buelga, S.J.Hogan, D.J. Wagg, Stability switches in a neutral delay differential equation with application to real-time dynamic substructuring, *Appl. Mech. Mat.* **5-6**, 79-84 (2006).

12. **K.B. Blyuss**, P. Ashwin, A.P. Bassom, C.D. Wright, Front propagation in a phase-field model with phase-dependent heat absorption, *Physica D* **215**, 127-136 (2006).

11. Y.N. Kyrychko, **K.B. Blyuss**, A. Gonzalez-Buelga, S.J. Hogan, D.J. Wagg, Real-time dynamic substructuring in a coupled oscillator-pendulum system, *Proc. Roy. Soc.* A **462**, 1271-1294 (2006).

10. **K.B. Blyuss**, On a model of spatial spread of epidemics with long-distance travel, *Phys. Lett. A* **345**, 129-136 (2005).

9. Y.N. Kyrychko, **K.B. Blyuss**, Global properties of a delayed SIR model with temporary immunity and nonlinear incidence rate, *Nonlinear Anal. Real World Appl.* **6**, 495-507 (2005).

8. **K.B. Blyuss**, Y.N. Kyrychko, On a basic model of a two-disease epidemic, *Appl. Math. Comput.* **160**, 177-187 (2005).

7. **K.B. Blyuss**, P. Ashwin, A.P. Bassom, C.D. Wright, Master equation approach to the study of phase change processes in data storage media, *Phys. Rev. E* **71**, 011607 (2005).

6. Y.N. Kyrychko, M.V. Bartuccelli, **K.B. Blyuss**, Persistence of travelling wave solutions of a fourth order diffusion system, *J. Comput. Appl. Math.* **176**, 433-443 (2005).

5. M.V. Bartuccelli, **K.B. Blyuss**, Y.N. Kyrychko, Length scales and positivity of solutions of a class of reaction-diffusion equations, *Comm. Pure Appl. Anal.*, **3**, 25-40 (2004).

4. **K.B. Blyuss**, T.J. Bridges, G. Derks, Transverse instability and its long-term development for solitary waves of the (2+1)-Boussinesq equation, *Phys. Rev. E* **67**, 056626 (2003).

3. **K.B. Blyuss**, Melnikov analysis for multi-symplectic PDEs, *Proc. Inst. Math. Kyiv* **43**, 720-724 (2002).

2. **K.B. Blyuss**, Chaotic behaviour of solutions to a perturbed Korteweg-de Vries equation, *Rep. Math. Phys.* **49**, 29-38 (2002).

1. **K.B. Blyuss**, Chaotic behaviour of nonlinear waves and solitons of perturbed Korteweg-de Vries equation, *Rep. Math. Phys.* **46**, 47-54 (2000).

Research interests

My research falls mainly within the following topics

- Mathematical epidemiology, immunology and physiology
- Delay differential equations
- Applied dynamical systems
- Modelling plant immune responses and RNA interference

Awards/Grants

Oct 1999 - Oct 2000	Land Brandenburg Scholarship, Germany
Oct 2000 - Oct 2003	Overseas Research Student (ORS) Award, UK
August 2005	Financial support from the Isaac Newton Institute for Mathematical Sciences, Cambridge, to participate in the training course and workshop on "Pattern Formation"
Sept 2009	Award of £12,400 from MiR grant to organize a Workshop on "Mathematical Modelling of Epidemics"
November 2010	Co-I on a £3.6 mln EPSRC grant for a Bristol Centre of Complexity Sciences

Professional activities

Sept 2019	Co-organiser of a mini-symposium on "Recent advances in time-delayed systems", Dynamics Days Europe, Rostock, Germany
July 2019	Organiser of a mini-symposium on "Mathematical models of epidemics and awareness", International Conference on Industrial and Applied Mathematics, Valencia, Spain
June 2018	Organiser of a mini-symposium on "Time-delayed models of neural networks", 14th IFAC Workshop on Time Delay Systems, Budapest, Hungary
June 2017	Co-organiser of a mini-symposium on "Complex Networks: Delays and Collective Dynamics", Dynamics Days Europe, Szeged, Hungary
May 2017	Co-organiser of a mini-symposium on "Recent advances in time-delayed models of gene regulatory networks", SIAM Conference on Applications of Dynamical Systems, Snowbird, USA
April 2017	Invited co-organiser of a mini-symposium on "Applied delay differential equations", British Applied Mathematics Colloquium, University of Surrey, UK
July 2016	Organiser of a mini-symposium on "Recent advances in mathematical modelling of gene regulatory circuits", European Conference on Mathematical and Theoretical Biology, Nottingham, UK
2014 - present	Editor of the "Computational and Mathematical Methods in Medicine" journal
May 2013	Co-organiser of a mini-symposium on "Complex systems with delays", SIAM Conference on Applications of Dynamical Systems, Snowbird, USA
July 2011	Co-organiser of a mini-symposium on "Time delays and synchronization in biological systems", ICIAM 2011, Vancouver, Canada
Sept 2009	Organiser of a two-day Workshop on "Mathematical Modelling of Epidemics", University of Bristol, UK

Invited presentations

3-7 July 2023	Mini-symposium on "Qualitative analysis of dynamical system", 29th Nordic Congress of Mathematicians, Aalborg, Denmark
14-18 May 2023	Mini-symposium on "Mathematical and Data Analysis of Biological and Physiological Systems", SIAM Conference on Applications of Dynamical Systems, Portland, USA
4-8 Feb 2023	Keynote talk at 14th Conference on Dynamical Systems Applied to Biology and Natural Sciences, Bilbao, Basque Country Spain
8-11 Feb 2022	Keynote talk at 13th Conference on "Dynamical Systems Applied to Biology and Natural Sciences, Virtual
19-22 Sept 2021	Invited talk at International Conference on "Nonlinear dynamics of oscillatory systems", Nizhny Novgorod, Russia
23-27 Aug 2021	Mini-symposium on "Time delayed systems: theory and experiment", Dynamics Days Europe, Nice, France
2-5 Feb 2021	Keynote presentation at a Virtual International Workshop on "Dynamical Systems Applied to Biology and Natural Sciences"
24-27 Aug 2020	Mini-symposium on "Modelling the dynamics of Covid19 pandemic", Dynamics Days Digital 2020
12 May 2020	Oberseminar "Nonlinear dynamics"Weiestrass Institute, Berlin, Germany
4-7 Feb 2020	Keynote presentation at an International Workshop on "Dynamical Systems Applied to Biology and Natural Sciences", Trento, Italy
11-13 Sept 2019	Keynote talk, Workshop on "Stochastic methods in health and disease", University of Leeds, Leeds, UK
2-6 Sept 2019	Mini-symposium on "Dynamics of delay differential equations, and application", Dynamics Days Europe, Rostock, Germany
15-19 July 2019	Mini-symposium on "Mathematical models of epidemics and awareness", International Conference on Industrial and Applied Mathematics, Valencia, Spain
3-6 Feb 2019	Keynote presentation at an International Workshop on "Dynamical Systems Applied to Biology and Natural Sciences", Naples, Italy

17-19 Dec 2018	Plenary talk, Workshop on "Perspectives on Complex Systems" Technical University Berlin, Berlin, Germany
21 Nov 2018	Research seminar, Department of Mathematics and Applications University of Naples Federico II, Naples, Italy
28-30 June 2018	Mini-symposium on "Time delays in biological systems", 14th IFAC Workshop on Time Delay Systems, Budapest, Hungary
7-9 Feb 2018	Keynote presentation at an International Workshop on "Dynamical Systems Applied to Biology and Natural Sciences", Torino, Italy
5-9 June 2017	Mini-symposium on "Complex Networks: Delays and Collective Dynamics", Dynamics Days Europe, Szeged, Hungary
21-25 May 2017	Mini-symposium on "Dynamical Models of Plant Response to Threats", SIAM Conference on Applications of Dynamical Systems, Snowbird, USA
10-12 April 2017	Mini-symposium on "Applied delay differential equations", British Applied Mathematics Colloquium, University of Surrey, Guildford, UK
22 March 2017	Research seminar, Institute for Cross-Disciplinary Physics and Complex Systems, Palma, Mallorca, Spain
31 Jan-3 Feb 2017	Keynote presentation at an International Workshop on "Dynamical Systems Applied to Biology and Natural Sciences", Évora, Portugal
6 Sept 2016	Research seminar, John Innes Centre, Norwich, UK
2-5 Feb 2016	Keynote presentation at an International Workshop on "Dynamical Systems Applied to Biology and Natural Sciences", Évora, Portugal
11-15 May 2015	Short Thematic Program on "Delay-Differential equations in physical sciences and engineering", Fields Institute, Toronto, Canada
19 Mar 2015	Mathematics research seminar, Leicester University, UK
4-6 Feb 2015	Keynote presentation at an International Workshop on "Dynamical Systems Applied to Biology and Natural Sciences", Lisbon, Portugal

10-12 Feb 2014	Keynote presentation at an International Workshop on "Dynamical Systems Applied to Biology and Natural Sciences", Lisbon, Portugal
19-23 May 2013	Mini-symposium on "Delayed Network Dynamics, SIAM Conference on Applications of Dynamical Systems, Snowbird, USA
9 Jan 2013	Infection and Immunity Workshop, Bristol, UK
20-27 May 2012	International Workshop "Emergent Dynamics in Oscillatory Networks", Crimea, Ukraine
6 Mar 2012	Mathematics research seminar, Imperial College, UK
8-10 Feb 2012	Keynote presentation at an International Workshop on "Dynamical Systems Applied to Biology and Natural Sciences", Lisbon, Portugal
23 Nov 2011	Mathematics research seminar, Portsmouth, UK
5-8 Sept 2011	Mini-symposium on "Noise and oscillations in biological systems", 5^{th} International Conference on Physics and Control, León, Spain
3 Dec 2010	Mathematical biology seminar, Bath, UK
15 Dec 2009	Theoretical physics research seminar, Cottbus, Germany
20 Nov 2009	Severnside Alliance for Translational Research, Bristol, UK
18 Nov 2009	Complexity Forum, Warwick, UK
11 March 2009	Theoretical Physics seminar, Manchester, UK
23 Jan 2009	Applied mathematics seminar, Surrey, UK
9 Oct 2008	Mathematics seminar, Sussex, UK
12 March 2008	2^{nd} Colloquium on Models of Population Dynamics and Evolution, Leicester, UK
11 Oct 2007	Applied mathematics seminar, Essex, UK
27 Oct 2005	Research seminar at Isaac Newton Institute, Cambridge, UK
21 January 2005	Applied nonlinear mathematics seminar, Bristol, UK

6 January 2005	Departmental seminar, Institute for Theoretical Physics TU Berlin, Germany
14 May 2004	Applied mathematics seminar, Exeter, UK
21 January 2003	Physics colloquium, Cottbus, Germany

Contributed presentations

3-8 September 2023	Dynamics Days Europe, Naples, Italy
4-8 June 2012	Delayed Complex Systems, Palma, Spain
20-27 May 2012	7^{th} Crimean School and Workshop on "Emergent Dynamics of Oscillatory Networks", Crimea, Ukraine
1-5 August 2011	Equadiff, Loughborough, UK
31 May - 4 June 2010	Emerging Topics in Dynamical Systems and Partial Differential Equations, Barcelona, Spain
6-9 April 2010	British Applied Mathematics Colloquium, Edinburgh, UK
5-9 Oct 2009	Delayed Complex Systems, Dresden, Germany
2 June 2009	Mathematics, Computation and Biology, Bristol, UK
7-9 April 2009	British Applied Mathematics Colloquium, Nottingham, UK
17-19 Nov 2008	Complex Dynamics in Large Coupled Systems, Berlin, Germany
9-11 Sept 2008	Emergence in Complex Systems, Bath, UK
25-29 August 2008	Dynamics Days Europe 2008, Delft, Netherlands
3-7 Sept 2007	3^{rd} International Conference on Physics and Control, Potsdam, Germany
9-13 July 2007	Dynamics Days Europe 2007, Loughborough, UK
4-7 April 2007	British Applied Mathematics Colloquium, University of Bristol, UK
25-29 Sept 2006	Dynamics Days Europe 2006, Crete, Greece
15-26 May 2006	6^{th} Crimean School and Workshop on "Nonlinear Dynamics, Chaos and Applications", Crimea, Ukraine
19-23 Sept 2005	Theoretical aspects of pattern formation, Surrey, UK
5-8 Sept 2005	Successes and failures of continuous models for discrete systems, Bristol, UK
25-28 July 2005	XXV Dynamics Days Europe, Berlin, Germany

28 June 2005	Workshop on Dynamics, Dept. of Mathematical Sciences, University of Exeter, UK
4-7 Apr 2005	British Applied Mathematics Colloquium, University of Liverpool, UK
14 May 2004	Applied mathematics seminar, Exeter, UK
27 January 2004	Research seminar, Surrey, UK
28 July - 03 Aug 2002	Dynamical System Methods in Fluid Mechanics, Oberwolfach, Germany
25-26 March 2002	Dynamics with Symmetry, one-day workshop, Leeds, UK
9-15 July 2001	IV International Conference: Symmetry in Nonlinear Mathematical Physics, Kiev, Ukraine
20-23 June 1999	Dynamics Days Europe 1999, Como, Italy
18-21 May 1999	XXXI Symposium on Mathematical Physics, Torun, Poland

Teaching experience

Oct 2010 - present **University of Sussex**:

"Financial Investment and Corporate Risk A", MSc module
"Linear algebra 1", 1st year undergraduate module
"Geometry", 1st year undergraduate module
"Cryptography", MSc/MMath/3rd year module
"Numerical solution of ODEs", MSc/MMath/4th year module
"Analysis 2", 2nd year undergraduate module
"Applied Mathematical Models", 3rd year undergraduate module

Aug 2008 - Sept 2010 **University of Bristol**:

"Mathematical Modelling", 1st year DTC Complexity Postgraduate module

"Mathematical and Data Modelling", 3rd year Engineering Mathematics module

Oct 2006 - July 2008 **Keele University**:

"Numerical Methods", 2nd year undergraduate module

"Advanced Mathematics for Economics and Business",
1st year undergraduate module

"Mathematical modelling", 2nd year undergraduate module

Oct 2003 - Sept 2006 **University of Exeter**:

"Numerical methods and computing with Matlab", 1st year undergraduate module

"Mathematical biology and ecology", 3rd year undergraduate module

"Differential equations and chaos", 4th year MMath module

Student supervision

2005-2006 Peter Basharan, Final year project, University of Exeter, UK

2005-2006 Vicky Brown, MSc project, University of Exeter, UK

2006-2007 Michael Lawton, Final year project, Keele University, UK

2009-2010 Laura Jones, MEng project, University of Bristol, UK

2009-2010 Terry Norton, MEng project, University of Bristol, UK

2010-2011 Wanyun Zheng, MMath project, University of Sussex

2011-2012 Giannis Neofytou, MSc project, University of Sussex

2012-2013 Edward Trinkwon, MMath project, University of Sussex

2012-2013 Emma Atakpa, MMath project, University of Sussex

2013-2014 Beth Boulton, MMath project, University of Sussex

2013-2014 Rosanna Barnard, MMath project, University of Sussex

2014-2015 Stephen Ashton, MMath project, University of Sussex

2014-2015 Helen Christmas, MMath project, University of Sussex

2017-2018 Khalid Aldawsari, MSc project, University of Sussex

Supervision of PhD students

2010-2013 Tom Irving, University of Bristol (PhD in 2013)

2011-2014 Muhammad Yau, University of Sussex (PhD in 2014)

2012-2016 Giannis Neofytou, University of Sussex (PhD in 2016)

2014-2016 Grace Agaba, University of Sussex (PhD in 2016)

2014-2018 Neil Sherborne, University of Sussex (PhD in 2018)

2015-2019 Farzad Fatehi, University of Sussex (PhD in 2019)

Examination of PhD theses

2013	Rubi Bilal, University College London, UK
2015	David Haw, University of Bristol, UK
2017	Abdullah Aldurayhim, University of Exeter, UK
2019	Raj Kumar Rai, Banaras Hindu University, India
2020	Anna Zincenko, University of Leicestershire, UK
2021	Obias Chimbola, Botswana International University of Science and Technology, Botswana
2021	Nicholas Burgess, University of Surrey, UK
2023	Bevelyn Williams, University of Leeds, UK
2023	Amer Alsulami, University of Leicestershire, UK

Refereeing activity

2004-present	Referee for Applied Mathematics and Computation, Bulletin of Mathematical Biology, Chaos, Dynamical Systems, IMA Journal of Applied Mathematics, International Journal of Bifurcation and Chaos, Journal of Fluid Mechanics, Journal of Mathematical Biology, Journal of Theoretical Biology, Journal of the Royal Society Interface, Mathematical Biosciences, Nonlinear Analysis RWA, Physica A, Physics Letters A, PLoS ONE, SIGMA, Scientific Reports, Theoretical Population Biology
	Medical Research Council, BBSRC, CRC Press