

Curriculum Vitæ

Ian L. Dryden

School of Mathematical Sciences, University of Nottingham, University Park, Nottingham, NG7 2RD, UK.

Telephone: +44 115 846 7412

e-mail: Ian -DOT- Dryden -AT- Nottingham -DOT- ac -DOT- uk

Web: <http://www.maths.nottingham.ac.uk/~ild>

Academic History

1986-89 University of Leeds, UK.

Ph.D. in Statistics: 'The Statistical Analysis of Shape Data'

1983-86 University of Nottingham, UK.

B.Sc (Hons) Mathematics with Statistics (1st class).

Employment

2000-2010, September 2012- Professor of Statistics, School of Mathematical Sciences, University of Nottingham, UK.

January 2014-July 2018 Head of School, School of Mathematical Sciences, University of Nottingham, UK.

January 2009-August 2012 Professor, Department of Statistics, University of South Carolina, Columbia, South Carolina, USA.

1998-1999 Senior Lecturer, Department of Statistics, University of Leeds, UK

1996-1997 Visiting Assistant Professor, Department of Statistics, University of Chicago, USA.

1989-1998 Lecturer, Department of Statistics, University of Leeds, UK

Honours and Awards

2012-2017 Royal Society Wolfson Research Merit Award

2012 Elected Fellow of the Institute of Mathematical Statistics

2007 Leverhulme Research Award

2004 Elected member of the International Statistical Institute

2002 Chartered Statistician (CStat) of the Royal Statistical Society (revalidated 2016)

1999 John Wiley and Sons Statistics Book of the Year.

Publications

Books

1. Dryden, I. L. and Mardia, K. V. (2016). *Statistical Shape Analysis, with Applications in R (Second Edition)* John Wiley, Chichester. 454 + xxiii pages.
2. Dryden, I. L. and Kent, J. T. (Editors) (2015). *Geometry Driven Statistics*. John Wiley, Chichester. 394 + xviii pages.

3. Dryden, I. L. and Mardia, K. V. (1998). *Statistical Shape Analysis*. John Wiley, Chichester. 347 + xvii pages.

Research Papers

4. Severn, K. E., Dryden, I. L. and Preston, S. P. (2021). Manifold valued data analysis of samples of networks, with applications in corpus linguistics. *Annals of Applied Statistics*. To appear.
5. Severn, K. E., Dryden, I. L. and Preston, S. P. (2021). Non-parametric regression for networks. *Stat* **10**, e373 <https://doi.org/10.1002/sta4.373>
6. Laurence Burroughs, Mahetab H. Amer, Matthew Vassey, Britta Koch, Graziela P. Figueredo, Blessing Mukonoweshuro, Paulius Mikulskis, Aliaksei Vasilevich, Steven Vermeulen, Ian L. Dryden, David A. Winkler, Amir M. Ghaemmaghami, Felicity R.A.J. Rose, Jan de Boer, and Morgan R. Alexander. (2021). Discovery of synergistic material-topography combinations to achieve immunomodulatory osteoinductive biomaterials using a novel in vitro screening method: The ChemoTopoChip, *Biomaterials*, **271** <https://doi.org/10.1016/j.biomaterials.2021.120740>
7. Kim, K., Dryden, I.L., Le, H. and Severn, K.E. (2021). Smoothing splines on Riemannian manifolds, with applications to 3D shape space. *Journal of the Royal Statistical Society, Series B*. **83**, 108-132. <https://doi.org/10.1111/rssb.12402> First published online: December 2nd, 2020.
8. Dryden, I.L. (2021). *shapes* package, R Foundation for Statistical Computing, Vienna, Austria, Contributed package. Version 1.2.6, March 31, 2021. (Version 1.0, September 16, 2003) <http://www.R-project.org/package=shapes>
9. Dryden, I.L., Kume, A., Paine, P.J. and Wood, A.T.A. (2020). Regression modelling for size-and-shape data based on a Gaussian model for landmarks. *Journal of the American Statistical Association* Published online: March 30th, 2020. <https://doi.org/10.1080/01621459.2020.1724115>
10. Varano, V., Piras, P., Gabriele, S., Teresi, L., Nardinocchi, P., Dryden, I. L., Torromeo, C., Schiariti, M. and Puddu, P. E. (2020). Local and global energies for shape analysis in medical imaging. *International Journal for Numerical Methods in Biomedical Engineering* **36**:e3252, <https://doi.org/10.1002/cnm.3252>
11. Severn, K.E., Dryden, I.L. and Preston, S.P. (2020). Discussion of the paper by P.Dubey and H.Müller. *Journal of the Royal Statistical Society, Series B*, **82**, 319–320.
12. Dryden, I.L., Goulding, J., Preston, S.P. and Chan, L. (2020). Discussion of the paper by B.W. Silverman. *Journal of the Royal Statistical Society, Series A*, **183**, 726–727.
13. Dryden, I.L., Kim, K., Laughton, C.A. and Le, H. (2019). Principal nested shape space analysis of molecular dynamics data. *Annals of Applied Statistics*, **13**, 2213–2234.
14. Dryden, I.L., Kim, K. and Le, H. (2019). Bayesian linear size-and-shape regression with applications to face data. *Sankhya A*, **81**, 83–103. <https://doi.org/10.1007/s13171-018-0136-8>.
15. Dryden, I.L., Preston, S.P. and Severn, K.E. (2019). Discussion: Object-Oriented Data Analysis, Power Metrics, and Graph Laplacians. *Journal of the American Statistical Association*, **114**, 1097–1098. <https://doi.org/10.1080/01621459.2019.1635477>
16. Acheampong, E., Dryden, I.L., Wattis, J.A.D., Twycross, J., Scrimshaw, M.D. and Gomes, R.L. (2019). Modelling emerging pollutants in wastewater treatment: A case study of the pharmaceutical 17α -ethinylestradiol. *Computers and Chemical Engineering*, **128**, 477–487. <https://doi.org/10.1016/j.compchemeng.2019.06.020>

17. Lewis, N. H., Hitchcock, D. B., Dryden, I. L. and Rose, J. R. (2018). Peptide Refinement Using A Stochastic Search. *Journal of the Royal Statistical Society, Series C*, **67**, 1207–1236. <https://doi.org/10.1111/rssc.12280>
18. Dryden, I. L. and Hodge, D. J. (2018). Journeys in Big Data Statistics. *Statistics and Probability Letters*, **136**, 121–125. <https://doi.org/10.1016/j.spl.2018.02.013>
19. Vasiliu, D., Dey, T., and Dryden, I. L. (2018). Penalized Euclidean distance regression. *Stat*, **7**, e175. <https://doi.org/10.1002/sta4.175>.
20. Valerio Varano, Paolo Piras, Stefano Gabriele, Luciano Teresi, Paola Nardinocchi, Ian L. Dryden, Concetta Torromeo and Paolo E Puddu. (2018). The Decomposition of Deformation: new metrics to enhance shape analysis in medical imaging. *Medical Image Analysis*, **46**, 35–56. <https://doi.org/10.1016/j.media.2018.02.005>
21. Gudrun A. Fridgeirsdottir, Robert J. Harris, Ian L. Dryden, Peter M. Fischer, and Clive J. Roberts (2018). Multiple linear regression modelling to predict the stability of polymer-drug solid dispersions: Comparison of the effects of polymers and manufacturing methods on solid dispersion stability *Mol. Pharmaceutics*, **15**, 1826–1841. <https://doi.org/10.1021/acs.molpharmaceut.8b00021>.
22. Kenobi, Kim and Atkinson, Jonathan A. and Wells, Darren M. and Gaju, Oorbessy and deSilva, Jayalath G. and Foulkes, M. John and Dryden, Ian L. and Wood, Andrew T.A. and Bennett, Malcolm J. (2017). Linear discriminant analysis reveals differences in root architecture in wheat seedlings by nitrogen uptake efficiency. *Journal of Experimental Botany*. **68(17)**, 4969–4981. <https://doi.org/10.1093/jxb/erx300>.
23. Tan, Francisca M. and Caballero-Gaudes, Cesar and Mullinger, Karen J. and Cho, Siu-Yeung and Zhang, Yaping and Dryden, Ian L. and Francis, Susan T. and Gowland, Penny A. (2017). Decoding fMRI events in sensorimotor motor network using sparse paradigm free mapping and activation likelihood estimates. *Human Brain Mapping*, **38**, 5778-5794. <https://doi.org/10.1002/hbm.23767>
24. Varano V., Piras P., Teresi L., Gabriele S., Dryden I.L., Nardinocchi P., Evangelista A., Torromeo C., Puddu P.E. (2017). A Threefold Deformation Decomposition in Shape Analysis for Medical Imaging: Spherical, Deviatoric and Non Affine Components. In: J.M.R.S. Tavares and R.M. Natal Jorge (eds.), *VipIMAGE 2017, Lecture Notes in Computational Vision and Biomechanics 27*, Springer International Publishing AG 2018, 1125-1134. https://doi.org/10.1007/978-3-319-68195-5_124
25. Varano, V. and Gabriele, S. and Teresi, L. and Dryden, I.L. and Puddu, P.E. and Torromeo, C. and Piras, P. (2017) The TPS Direct Transport: a new method for transporting deformations in the Size-and-shape Space. *International Journal of Computer Vision*, **124**, 384–408. <https://doi.org/10.1007/s11263-017-1031-9>
26. Dryden, I.L., Hill, B.C., Wang, H. and Laughton, C.A. (2017). Covariance analysis for temporal data, with applications to DNA modelling. *Stat*. **6**, 218–230. <https://doi.org/10.1002/sta4.149>.
27. Cheng, W., Dryden, I. L. and Huang, X. (2016). Bayesian registration of functions and curves. *Bayesian Analysis*, **11**, 447–475. <https://doi.org/10.1214/15-BA957>
28. Zhou, D., Dryden, I. L., Koloydenko, A. A., Audenaert, K. , Li, B. (2016). Regularisation, interpolation and visualisation of diffusion tensor images using non-Euclidean statistics. *Journal of Applied Statistics*, **43**, 943–978. <https://doi.org/10.1080/02664763.2015.1080671>
29. Dryden, I.L., Le, H., Preston, S.P., Wood A.T.A. (2016). Nonparametric statistical methods on manifolds. In: Rabi N. Bhattacharya: selected papers. Edited by Denker, M. and Waymire, E.C., Birkhäuser, Boston. 587–597.

30. Brignell, C.J., Dryden, I.L. and Browne, W.J. (2016). Covariance weighted Procrustes analysis. In: Riemannian Computing in Computer Vision, Edited by Turaga, P.K. and Srivastava, A., pp.189–209, Springer, New York,
31. Brown, D.M., Williams, H., Ryan K.J.P., Wilson, T.L., Daniel, Z.C.T.R., Mareko, M.H.D., Emes, R.D., Harris, D.W., Jones, S., Wattis, J.A.D., Dryden, I.L., Hodgman, T.C., Brameld, J.M. and Parr, T. (2016). Mitochondrial phosphoenolpyruvate carboxykinase (PEPCK-M) and serine biosynthetic pathway genes are co-ordinately increased during anabolic agent-induced skeletal muscle growth. *Scientific Reports*, **6**, Article number: 28693.
32. Maskrey, S.A., Mount, N.J., Thorne, C.R., Dryden, I. (2016). Participatory modelling for stakeholder involvement in the development of flood risk management intervention options. *Environmental Modelling and Software*, **82**, 275-294. <https://doi.org/10.1016/j.envsoft.2016.04.027>
33. Du, J., Dryden, I. L. and Huang, X. (2015). Size and shape analysis of error-prone shape data. *Journal of the American Statistical Association*, **110**, 368–379. <https://doi.org/10.1080/01621459.2014.908779>
34. Nurzyńska, K., Booth, J., Roberts, C. J., McCabe, J., Dryden, I., and Fischer, P. M. (2015). Long-term amorphous drug stability predictions using easily calculated, predicted, and measured parameters. *Molecular Pharmaceutics*. **12**, 3389–3398. <https://doi.org/10.1021/acs.molpharmaceut.5b00409>.
35. Varano, V., Gabriele, S., Teresi, L., Dryden, I., Puddu, P.E., Torromeo, C. and Piras, P. (2015). Comparing shape trajectories of biological soft tissues in the size-and-shape space. BIOMAT 2014, chapter 23, 351-365, World Scientific, Hackensack. https://doi.org/10.1142/9789814667944_0023
36. Cheng, W., Dryden, I.L. and Huang, X. (2015). Ambient space inference for functional data. In: K.V. Mardia, A. Gusnanto, C. Nooney & J. Voss (eds), *Geometry-Driven Statistics and its Cutting Edge Applications: Celebrating Four Decades of Leeds Statistics Workshops*, pp. 65–68, Leeds, Leeds University Press.
37. Cheng, W., Dryden, I. L., Hitchcock, D. B. and Le, H. (2014). Analysis of Proteomics Data: Bayesian Alignment of Functions *Electronic Journal of Statistics*, **8**, 1734–1741. <https://doi.org/10.1214/14-EJS900C>
38. Cheng, W., Dryden, I. L., Hitchcock, D. B. and Le, H. (2014). Analysis of spike train data: classification and Bayesian alignment. *Electronic Journal of Statistics*, **8**, 1786–1792. <https://doi.org/10.1214/14-EJS865C>
39. Cheng, W., Dryden, I. L., Hitchcock, D. B. and Le, H. (2014). Analysis of AneuRisk65 data: internal carotid artery shape analysis *Electronic Journal of Statistics*, **8**, 1905–1913. <https://doi.org/10.1214/14-EJS938B>
40. Pigoli, D., Aston, J. A. D., Dryden, I. L. and Secchi, P. (2014). Distances and inference for covariance operators. *Biometrika*, **101**, 409–422. <https://doi.org/10.1093/biomet/asu008>
41. Dryden, I. L., Le, H., Preston, S. P. and Wood, A. T. A. (2014). Mean shapes, projections and intrinsic limiting distributions. *Journal of Statistical Planning and Inference*. **145**, 25–32. <https://doi.org/10.1016/j.jspi.2013.08.003>
42. Pigoli, D., Aston, J. A. D., Dryden, I. L. and Secchi, P. (2014). Permutation tests for comparison of covariance operators. In: *Contributions in infinite-dimensional statistics and related topics* Edited by Enea G. Bongiorno, Ernesto Salinelli, Aldo Goia, Philippe Vieu. Third Edition of the International Workshop on Functional and Operatorial Statistics held in Stresa, Italy. Chapter 38, 215–220. Societa Editrice Esculapio, Bologna.
43. Dryden, I. L. (2014). Discussion: Shape and Object Data Analysis. Discussion of the paper: ‘Overview of object oriented data analysis’ by J.S. Marron and A.M. Alonso. *Biometrical Journal*. **56**, 758–760.

<https://doi.org/10.1002/bimj.201300220>

44. Dryden, I. L. (2014). Discussion on the paper by S. Byrne and M. Girolami. *Scandinavian Journal of Statistics*, **41**, 8–9. <https://doi.org/10.1111/sjos.12072>
45. Caballero Gaudes, C., Petridou, N., Francis, S., Dryden, I.L. and Gowland, P. (2013). Paradigm Free Mapping with sparse regression automatically detects single-trial fMRI BOLD responses. *Human Brain Mapping*. **34**, 501–518. <https://doi.org/10.1002/hbm.21452>
46. Petridou, N., Caballero Gaudes, C., Dryden, I.L., Francis, S.T. and Gowland, P.A. (2013). Periods of rest in fMRI contain transient events which are related to slowly fluctuating spontaneous activity. *Human Brain Mapping*. **34**, 1319–1329. <https://doi.org/10.1002/hbm.21513>
47. Zhou, D., Dryden, I.L., Koloydenko, A.A. and Bai, L. (2013). Procrustes Analysis for Diffusion Tensor Image Processing. *International Journal of Computer Theory and Engineering*, **5**, 108–113.
48. Bhattacharya, R.N., Buibas, M., Dryden, I.L., Ellingson, L.A., Groisser, D., Hendriks, H., Huckemann, S., Le, H., Liu, X., Marron, J.S., Osborne, D.E., Patrângenaru, V., Schwartzman, A., Thompson, H.W., and Wood, A.T.A. (2013). Extrinsic data analysis on sample spaces with a manifold stratification. *Advances in Mathematics, Invited Contributions at the Seventh Congress of Romanian Mathematicians, Brasov, 2011*, The Publishing House of the Romanian Academy (Editors: Lucian Beznea, Vasile Brîzanescu, Marius Iosifescu, Gabriela Marinoschi, Radu Purice and Dan Timotin), pp.227–240.
49. Guță, M., Kypraios, T. and Dryden, I.L. (2012). Rank-based model selection for multiple ions quantum tomography. *New Journal of Physics*. **14**, 105002. <https://doi.org/10.1088/1367-2630/14/10/105002>
50. Chernyavsky, I.L., Dryden, I.L. and Jensen, O.E. (2012). Characterising the multiscale structure of fluctuations of transported quantities in a disordered medium. *IMA Journal of Applied Mathematics*, **77**: 697–725. <https://doi.org/10.1093/imamat/hxs063>
51. Jung, S., Dryden, I.L. and Marron, J.S. (2012). Analysis of principal nested spheres. *Biometrika*, **99**, 551–568. <https://doi.org/10.1093/biomet/ass022>
52. Kenobi, K. and Dryden, I.L. (2012). Bayesian matching of unlabelled point sets using Procrustes and configuration models. *Bayesian Analysis*. **7**, 547–566. <https://doi.org/10.1214/12-BA718>
53. Higgins, H.M., Dryden, I.L. and Green, M.J. (2012). A Bayesian elicitation of veterinary beliefs regarding systemic dry cow therapy: variation and importance for clinical trial design. *Preventive Veterinary Medicine*, **106**, 87–96.
54. Su, J., Dryden, I.L., Klassen, E., Le, H. and Srivastava, A. (2012). Fitting optimal curves to time-indexed, noisy observations of stochastic processes on nonlinear manifolds. *Journal of Image and Vision Computing*. **30**, 428–442. <https://doi.org/10.1016/j.imavis.2011.09.006>
55. Czogiel I., Dryden, I.L. and Brignell, C.J. (2011). Bayesian matching of unlabeled point sets using random fields, with an application to molecular alignment. *Annals of Applied Statistics*, **5**, 2603–2629.
56. Chernyavsky, I.L., Leach, L., Dryden, I.L. and Jensen, O.E. (2011). Transport in the placenta: homogenizing haemodynamics in a disordered medium. *Philosophical Transactions of the Royal Society A*, **369**, 4162–4182.
57. Cao, Y., Zhang, Z., Czogiel, I., Dryden, I.L. and Wang, S. (2011). 2D non-rigid partial shape matching using MCMC and contour subdivision. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2345–2352, Colorado Springs, CO.

58. Czogiel, I., Dryden, I.L. and Brignell, C.J. (2011). Bayesian molecular alignment using random fields. In: K.V. Mardia, A. Gusnanto, A.D. Riley & J. Voss (eds), *Next Generation Statistics and Bioinformatics*, pp. 95–98, Leeds, Leeds University Press.
59. Caballero Gaudes, C., Petridou, N., Dryden, I.L., Bai, L., Francis, S.T. and Gowland, P.A. (2011). Detection and characterization of single-trial fMRI BOLD responses: Paradigm Free Mapping. *Human Brain Mapping*. **32**, 1400–1418. <https://doi.org/10.1002/hbm.21116>
60. Dryden, I.L. (2011). Discussion on the paper by Girolami and Calderhead. *Journal of the Royal Statistical Society, Series B*, **73**, 180.
61. Higgins, H. M., Dryden, I. L. and Green, M. J. (2011). A Bayesian approach demonstrating that incorporation of practitioners' clinical beliefs into research design is crucial for effective knowledge transfer. In: Hogeveen, H. and Lam, T. J. G. M. (eds), *Udder Health and Communication*, pages 133–140, Wageningen Academic Publishers, Wageningen.
62. Kenobi, K., Dryden, I.L. and Le, H. (2010). Shape curves and geodesic modelling. *Biometrika*, **97**, 567–584.
63. Brignell, C.J., Dryden, I.L., Gattone, S.A., Park, B., Leask, S., Browne, W.J. and Flynn, S. (2010). Surface shape analysis, with an application to brain surface asymmetry in schizophrenia. *Biostatistics*, **11**, 609–630.
64. Amaral, G.J.A., Dryden, I.L., Patrangenaru, V. and Wood, A.T.A. (2010). Bootstrap confidence regions for the planar mean shape. *Journal of Statistical Planning and Inference*. **140**, 3026–3034.
65. Dryden, I.L., Kume, A., Le, H., and Wood, A.T.A. (2010). Statistical inference for functions of the covariance matrix in the stationary Gaussian time-orthogonal principal components model. *Annals of the Institute of Statistical Mathematics*. **62**, 967-994.
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69. Evison M.P., Dryden I.L., Fieller N.R.J., Mallett X.G.D., Morecroft L., Schofield D., Vorder Bruegge R.W. (2010). Key parameters of face shape variation in 3D in a large sample. *Journal of Forensic Sciences*, **55**, 159–162.
70. Madouasse, A., Huxley, J.N., Browne, W.J., Bradley, A.J., Dryden, I.L. and Green, M.J. (2010). Use of individual cow milk recording data at the start of lactation to predict the calving to conception interval. *J. Dairy Sci.*, **93**, 4677–4690.
71. Marron, J.S., Jung, S. and Dryden, I.L. (2010). Speculation on the Generality of the Backward Stepwise View of PCA. Proceedings of MIR 2010: 11th ACM SIGMM International Conference on Multimedia Information Retrieval, Association for Computing Machinery, Inc., Danvers, MA, 227–230.
72. Morecroft, L., Fieller, N.R., Dryden, I.L. and Evison, M.P. (2010). Shape Variation in Anthropometric Landmarks in 3D. In: M.P. Evison and R.W. Vorder Bruegge (eds), *Computer-Aided Forensic Facial Comparison*, pp.35-52, CRC Press, Boca Raton.

73. Evison, M.P., Morecroft, L., Fieller, N.R.J., and Dryden, I.L. (2010). A Large Database Sample of 3D Facial Images and Measurements. In: M.P. Evison and R.W. Vorder Bruegge (eds), *Computer-Aided Forensic Facial Comparison*, pp. 53–69, CRC Press, Boca Raton.
74. Srivastava, A. and Damon, J. N. and Dryden, I. L. and Jermyn, I. H. (2010). Guest Editors' Introduction to the Special Section on Shape Analysis and Its Applications in Image Understanding. *IEEE Pattern Analysis and Machine Intelligence*, **32**, 577 - 578.
75. Dryden, I.L., Koloydenko, A. and Zhou, D. (2009). Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging. *Annals of Applied Statistics*, **3**, 1102–1123.
76. Dryden, I.L., Bai, L., Brignell, C.J. and Shen, L. (2009). Factored principal components analysis, with applications to face recognition. *Statistics and Computing*, **19**, 229–238.
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78. Dryden, I.L., Koloydenko, A., and Zhou, D. (2009). Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging. In A. Gusnanto, K.V. Mardia, & C.J. Fallaize (eds), *Statistical Tools for Challenges in Bioinformatics*, pp.43-46. Leeds, Leeds University Press.
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82. Zhou, D., Dryden, I.L., Koloydenko, A. and Bai, L. (2009). Procrustes analysis of Diffusion Tensor Data. *Proc. Intl. Soc. Mag. Reson. Med.* **17**, 3583.
83. Dryden, I.L., Kume, A., Le, H., and Wood, A.T.A. (2008). A multidimensional scaling approach to shape analysis. *Biometrika*, **95** 779–798.
84. Dryden, I.L., Oxborrow, N. and Dickson, R. (2008). Familial relationships of normal spine shape. *Statistics in Medicine*, **27**, 1993–2003.
85. Ball, F.G., Dryden, I.L. and Golalizadeh, M. (2008). Brownian Motion and Ornstein-Uhlenbeck Processes in Planar Shape Space. *Methodology and Computing in Applied Probability*, **10**, 1–22.
86. Czogiel, I., Dryden, I.L., and Brignell, C.J. (2008). Bayesian alignment of continuous molecular shapes using random fields. In S. Barber, P.D. Baxter, A. Gusnanto and K.V. Mardia (eds), *The Art and Science of Statistical Bioinformatics*, pp.85-88. Leeds, Leeds University Press.
87. Zhou, D., Dryden, I.L., Koloydenko, A., and Bai, L. (2008). Bayesian multi-tensor diffusion MRI and tractography. In S. Barber, P.D. Baxter, A. Gusnanto and K.V. Mardia (eds), *The Art and Science of Statistical Bioinformatics*, pp.111-115. Leeds, Leeds University Press.
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92. Kume, A., Dryden, I.L., and Le, H. (2007). Shape space smoothing splines for planar landmark data. *Biometrika*, **94**, 513–528.
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95. Dryden, I.L., Hirst, J.D. and Melville, J.L. (2007). Statistical analysis of unlabeled point sets: comparing molecules in chemoinformatics. *Biometrics*, **63**, 237–251.
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98. Dryden, I.L. (2007). Book review of ‘Stereology for Statisticians’ by A.Baddeley and E. B. Vedel Jensen, *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, **170**, 252.
99. Arato, N.M., Dryden, I.L. and Taylor, C.C. (2006). Hierarchical Bayesian modelling of spatial age-dependent mortality. *Computational Statistics and Data Analysis*, **51**, 1347–1363.
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101. Dryden, I.L. and Zempléni, A. (2006). Extreme shape analysis. *Journal of the Royal Statistical Society, Series C (Applied Statistics)*, **55**, 103–121.
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123. Dryden, I.L. (2001). Discussion to the paper by Glasbey and Mardia. *Journal of the Royal Statistical Society, Series B*, **63**, 497–498.
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131. Mardia, K. V., Aykroyd, R. G. and Dryden, I. L. (1999). Editors. *Proceedings in Spatial Temporal Modelling and Applications*. Leeds University Press.
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134. Dryden, I. L., Mardia, K. V. and Walder, A. N. (1997). Review of the use of context in statistical image analysis. *Journal of Applied Statistics*, **24**, 513–538.
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138. Scarr, M. R., Taylor, C. C. and Dryden, I. L. (1997). Automatic Recognition of Weeds and Crops. In J. V. Stafford editor, *Proceedings of Precision Agriculture '97*, Warwick BIOS Scientific Publishers. Volume

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147. O’Higgins, P. and Dryden, I. L. (1993). Sexual dimorphism in hominoid: further studies of craniofacial shape differences in *Pan*, *Gorilla*, *Pongo*. *Journal of Human Evolution*, **24**, 183–205.
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152. Dryden, I. L. and Mardia, K. V. (1991). Theoretical and distributional aspects of shape analysis. In Heyer, H., editor, *Probability Measures on Groups X*, pages 95–116, New York. Plenum.
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154. Mardia, K. V. and Dryden, I. L. (1989). The statistical analysis of shape data. *Biometrika*, **76**, 271–281.
155. Mardia, K. V. and Dryden, I. L. (1989). Shape distributions for landmark data. *Advances in Applied Probability*, **21**, 742–755.

Research Funding

- **2020-2022** NERC Developing a statistical methodology for the assessment and management of peatland

(StAMP). Co-I. PI D.Large. £294,570.

- **2019-2021** EPSRC Risk prediction for Women's Health and Rights in Tanzania: novel statistical methodology to target effective interventions (BEADS). EP/T003928/1. £553,446. PI.
- **2015-2021** EPSRC Horizon Digital Economy Research Institute: From Human Data to Personal Experience £4,062,954. Co-I. PI D.McAuley. EP/M02315X/1
- **2014-2017** Knowledge Training Partnership. Innovate UK. Resonate Group Limited. £99,332. Co-I. PI D.Hodge. Partnership Number 3493.
- **2013-2016** EPSRC. Statistical Analysis of Manifold-Valued Data £611,045. EP/K022547/1. Co-I. PI A.Wood. Co-Is. H. Le, S. Preston.
- **2012-2017** Royal Society Wolfson Research Merit Award. WM110140. PI. Object data analysis, with applications to medical images and molecular shapes.
- **2010-2013** National Science Foundation. QuasiNovo: An Information Theoretic Approach to De Novo Peptide Sequencing. Co-PI. PI: John Rose. (\$643,747). Award Id : 0959427
- **2010** SAMSI Research Fellow, SAMSI, Research Triangle Park, North Carolina.
- **2007-2012** BBSRC/EPSCRC Centre for Integrative Plant Biology (£9.2M). Co-investigator
- **2007-2008** Leverhulme Research Fellowship. Stochastic modelling and inference for medical image analysis. (£30K)
- **2006** Royal Society Travel Award. (£1,370)
- **2005-2006** EPSRC Discipline-hopping grant, as Principal Investigator (PI). EP/C549066/1 Stochastic and Computational Face Recognition (£57,484)
- **2005-2006** Nuffield Summer Undergraduate Research Bursary. Statistical analysis of archaeological field survey data using Bayesian techniques, with C.D.Litton. (£1,400)
- **2003-2005** Collaborator on a £1M+ funded project on face identification with Universities of Sheffield, Nottingham and Kent, sponsored by the US government (TSWG/FBI). (£10,000)
- **2003** NERC-EPSRC EMS workshop on modelling uncertainty in complex environmental and biological systems (£15,000) [held April, 2004, Nottingham], with N.Crout and A.T.A.Wood.
- **2001-2004** EPSRC Research Assistant, as PI. GR/R55757/01. Identifying structure from shape and image data, with H. Le and A.T.A. Wood (£157,196)
- **2001-2004** JREI/EPSCRC Compute-intensive facility for mathematical and stochastic modelling in biomedicine, with P. Matthews, F. Ball, P. O'Neill, H. Byrne, J. Wattis. (£121,735)
- **2000** St James Hospital, Leeds: Spinal Shape (£1000)
- **1999-2002** The British Council and Hungarian Science Academy. (£10,100) Principal UK investigator on a project on investigating a karstwater basin in Hungary using spatial statistics, image analysis and shape analysis, with Dr. C.C. Taylor, M. Arato, L. Markus, A. Zemleni.
- **1998** Royal Society and Indian National Science Academy (£900): study visit to India.
- **1998** Collaborator with Dr. P. O'Higgins on a project with the Institute of Neurology, London to further examine brain shape in MR images of epileptic patients. Travel costs.
- **1996** EPSRC (£4600) Image fusion and shape variability workshop (jointly with Prof. K.V. Mardia).

- **1995** Collaborator with Drs. P. O’Higgins on a project with the Institute of Neurology, London to examine brain shape in MR images of epileptic patients. Travel costs.
- **1995-1998** EPSRC (£125,904) Multi-scale approaches to shape change and image warping (jointly with Prof. K.V. Mardia, Prof. J.T. Kent, Dr. C.C. Taylor, Dr. R.G. Aykroyd).
- **1994** IMS Young Researchers Travel Fund (US\$600) Travel to Toronto ASA conference.
- **1993-1996** Silsoe/MAFF (£42,000) Automatic identification of crops and weeds (jointly with Dr. C.C. Taylor).
- **1993** British Gas (£7000) A review into the use of context in image analysis (jointly with Prof. K.V. Mardia).
- **1993** Enterprise in Higher Education (£6000) To devise and implement task-focused group projects (jointly with E.J. Redfern).
- **1993** and **1994** EPSRC earmarked studentships (with Prof. J.T. Kent and with Dr. C.A. Glasbey, BioSS).
- **1992** and **1993** Royal Society (£2700) Short study and travel awards to Australia and USA.
- **1992-1995** EPSRC (£108,000) Shape analysis in 2D and 3D images (jointly with Prof. K.V. Mardia, Prof. J.T. Kent, Dr. C.C. Taylor, Prof. M.A. Smith). Post-doctoral research fellow (3 years) and computing equipment.

Teaching and Learning

University of Nottingham: (2019-2020)

MATH3027 Optimization (130 students)

MATH4022/MATH3026 Times Series and Forecasting (130 students)

MATH3030/MATH4068 Multivariate Analysis (150 students)

First year tutorials in Mathematics

G14DIS Undergraduate MMath Dissertation (3 dissertations)

G14SDS MSc Statistics Dissertation (6 dissertations)

Personal tutorials (21 students).

University of Nottingham: (2010, 2012-2019)

HG2MPS Probabilistic and statistical techniques for engineers (150 students)

G14TFG: Time Series and Forecasting (40 students)

HG1M11: Engineering Mathematics I (250 students)

G14CST: Computational Statistics (8 students)

G13TST/G13TS2: Topics in Statistics (60 students)

G14ANS: Applications of Statistics (25 students)

First year tutorials in Mathematics

G14DIS Undergraduate MMath Dissertation

G14SDS MSc Statistics Dissertation

G13PJA/G13PJS Undergraduate Project

Short course: An Introduction to Time Series Analysis

Personal tutorials.

University of South Carolina: (2009, 2011-2012)

STAT 205: Elementary Statistics for Biology and the Life Sciences (100 students)

STAT 714: Linear Statistical Models (10 students)

STAT 705: Data Analysis II (twice, 9 students and 18 students)

STAT 718A: Statistical shape and image analysis (9 students)

STAT 714: Linear Statistical Models. (14 students)

University of Nottingham: (2000-2008)

Level 1: G1ASTA Statistics (three times, 250 students)

Level 1: HGBMPS/HG1IST Probabilistic and Statistical Techniques for Engineers (twice, 150 students)

Level 2: G12LIN Linear models (three times, 50 students)

Level 2: G12PRT Probability Techniques (once, 150 students)

Level 2: G12SCM Statistical Concepts and Methods (twice, 100 students)

Level 3: G13INF Statistical Inference (once, 80 students)

Level 3: G13TST Topics in Statistics (once, 20 students)

Level 3 and 4: G13AOD/G14FOS: Analysis of Data (once, 10 students)

Level 4: G14TS2 Topics in Statistics (Spatial Statistics and Image Analysis) (three times, 2-6 students)

Level 4: G14TFG Time series and forecasting (once, 10 students)

Level 4: G14CST Computational statistics (once, 10 students)

First year tutorials in Mathematics

MMath Dissertation supervisions

BSc/MMath Project supervisions

Introduction to R (workshops)

Personal Tutorials (pastoral support for undergraduates)

University of Leeds: (1989-1996, 1997-1999)

Level 1: MATH1730/1740 Introduction to Statistics I, II (89-96: 15 times, including repeated lectures)

Level 1: MATH1910 Modelling and Investigations (97-99: twice)

Level 3: MATH3722 Statistical Inference (89-91,93-94, 97-99: four times)

Level 3: MATH3761 Sequential and Bayesian Analysis (91-94, three times)

Level 3: MATH3792 Statistics and Images (94-96, twice)

Level 3: MATH3750 Project supervision (94-96,97-99)

Consultancy courses in Elementary and Introductory Statistics.

Tutorials in Statistics, Projects and Dissertations.

University of Chicago: (1996-1997)

Level 1: STAT200 Elementary Statistics

Level 1: STAT220 Introduction to Statistics for Economists

Level 2: STAT224 Applied Regression Analysis

Level 4: STAT338 Statistical Shape Analysis

External Undergraduate Examiner

University of Cambridge, 2019-2020. Part II, Statistics.

University of York, 2012-2013. Statistics

University of Warwick, 2004-2007. BSc, MMorse, MSc Statistics

Open University, 2005-2007. Course MDST242

University of Surrey, 2001-2004, BSc, MMath Mathematics and Statistics

Lancaster University, 1999-2002, BSc, MStat Mathematics and Statistics.

Outreach Activities

2015-2018 Offer holder visit welcome presentations

2014-2018 Open Day casino presentations

2016 Mathsoc undergraduate student society talk

2013 Nottingham Experience Summer School, Open Day

2010, 2013, 2014 Mathematics presentation/demonstration for University of Nottingham Open Day

2010 UCAS presentation for undergraduate degree applicants and parents

2006, 2007, 2008 Sutton Trust Summer School presentation.

2007 EPSRC Showcase Event at the House of Commons, UK Parliament, London, launching EPSRC's brochure on Engaging Maths which had an article on my work on face recognition.

Research supervision

Current PhD students

1. Lorna Burnell (Joint supervisors: Simon Gosling, Nick Mount, Markus Owen). Risks to global water resources from geoenvironmental climate with solar radiation management.
2. Noha Ghazi (Joint supervisors: Clive Roberts, Jonathan Burley). 2-D Microarray Printing for Screening of Pharmaceutical Solid Dispersions.

Former PhD students

3. Mohammad Faghihi (joint supervisor: Dr. C.C. Taylor: PhD awarded 1996). Shape analysis of spatial point patterns.
4. Catherine Anderson (joint supervisor: Prof. J.T. Kent: PhD awarded 1997). Object recognition using statistical shape analysis.
5. Mark Scarr (joint supervisor: Dr. C.C. Taylor: PhD awarded 1998). Texture modelling and classification using statistical image analysis.
6. Gary Walker (joint supervisor: Prof. J.T. Kent: PhD awarded 1999). The automatic matching of 2D electrophoretic gel images.
7. Rahman Farnoosh (joint supervisor: Dr. C.C. Taylor: PhD awarded 2000). Size analysis of spatial point patterns.
8. Paul McDonnell (Leeds: joint supervisor: Prof. K.V. Mardia, PhD awarded 2001). Image averaging and shape distributions.
9. Getulio Amaral (joint supervisor: Prof. A.T.A. Wood, PhD awarded 2004). Bootstrap and empirical likelihood methods in statistical shape analysis.
10. Ali Alshabani (joint supervisor: Dr. C.D. Litton, PhD awarded 2005). Statistical analysis of human movement data.
11. Mousa Gholizadeh (joint supervisor: Prof. FG Ball, PhD awarded 2006). Statistical modelling and inference for shape diffusions.
12. Kim Evans (joint supervisor: Dr. H. Le, PhD awarded 2007). Statistical analysis of shape curves and surface matching.
13. Christopher Brignell (joint supervisor: Dr WJ Browne, PhD awarded 2007). Shape analysis and statistical modelling in brain imaging.
14. Kelly Handley (joint supervisor: Dr. WJ Browne, PhD awarded 2007). Statistical analysis of mass-spectrometry data.
15. Ciprian-Ionut Duduiala (joint supervisor: Dr. J. Wattis, PhD awarded 2009). Stochastic nonlinear models of DNA breathing at a defect.

16. Irina Czogiel. Statistical inference for molecular shapes (joint supervisor: Dr CJ Brignell, PhD awarded 2010). Winner of a 2012 Gustav-Adolf-Lienert-Preis, International Biometric Society, German region.
17. Cesar Caballero Gaudes (joint supervisors: Bai Li, Penny Gowland, PhD awarded 2010). Single trial fMRI analysis.
18. Diwei Zhou (joint supervisors: Alexey Koloydenko, Bai Li, PhD awarded 2010). Statistical analysis of diffusion tensor imaging.
19. Aurélien Madouasse (joint supervisor: Martin Green, PhD awarded 2010). Statistical modelling and analysis of diary milk herd infections.
20. Nicola Stone (joint supervisor: Andrew Cliffe, 2011, PhD awarded 2011). Statistical analysis of computer models.
21. Igor Chernyavsky (joint supervisors: Oliver Jensen, Lopa Leach, PhD awarded 2011). Modelling placenta blood flow.
22. Jiejun Du. (joint advisor: Xianzheng Huang, PhD 2012, UofSC) Measurement error models in shape analysis.
23. Nicole Lewis (Joint advisor: David Hitchcock, PhD 2013, UofSC) Protein Identification using Bayesian Stochastic Search.
24. Blake Hill (joint advisor: Hao Wang, PhD 2013, UofSC) Permutation Testing for Covariance Matrices, with Applications in Shape Analysis.
25. Wen Cheng (joint advisor: Xianzheng Huang, PhD 2014, UofSC) Bayesian analysis of continuous curve functions.
26. Heather Pettitt (joint supervisor: Chris Brignell, PhD awarded 2015) Statistical analysis of computed tomography lung images.
27. Hannah Williams (joint supervisors: Jonathan Wattis, Tim Parr, John Brameld, Chungui Lu, PhD awarded 2017). Mathematical modelling of metabolic pathways in pig muscle.
28. Jonathan Davies (joint supervisor: Chris Brignell, PhD awarded 2017). Sparse regression methods with measurement-error for magnetoencephalography.
29. Anthony Hennessey (joint supervisors: Chris Fallaize, Huiling Le, PhD awarded 2018). Statistical shape analysis of large molecular data sets.
30. Andrew Hyde (joint supervisors: Andy Wood, Charlie Hodgman, Craig Sturrock, PhD awarded 2018). Statistical shape analysis of wheat root systems.
31. Katie Severn (Joint supervisor: Simon Preston, PhD awarded 2019). Manifold-valued data analysis of samples of networks.
32. Edward Acheampong (Joint supervisors: Rachel Gomes, Jamie Twycross, Jonathan Wattis, PhD awarded 2020). The impact of user behaviour on wastewater treatment and consequent water treatment.

Postdoctoral Researchers

- Emily Mitchell funded by NERC
- Katie Severn funded by EPSRC
- Rachel Carrington funded by EPSRC

- Madeleine Ellis funded by EPSRC
- Rowland Seymour (new EPSRC Prize holder, University of Nottingham) funded by EPSRC
- Alfred Kume (now Senior Lecturer, University of Kent) funded by EPSRC
- Kim Kenobi (now Lecturer, University of Aberystwyth) funded by ERC
- Kwang-Rae Kim (now SAS Korea) funded by EPSRC

Dissertations

Several Masters dissertations, with topics including:

The analysis of genetic SNP data in a study of Alzheimer's Disease using functional mixed effect models. Elicitation of the effect of treatment in veterinary medicine. Using Gaussian Graphical Models to estimate gene networks. Analysis of a questionnaire of HPV vaccine knowledge in Greek women. High dimensional sparse regression. DNA shape analysis. Symbolic data analysis. Network analysis.

Undergraduate projects and dissertations. I have supervised a very large number of individual undergraduate projects and dissertations on a wide range of topics, e.g. extreme value theory, survival analysis, shape analysis, mass spectrometry analysis, microarray analysis, spatial statistics, directional data analysis, university league tables, classification.

Mentor

Royal Society University Research Fellowship scheme.

PhD and habilitation examinations conducted

External PhD examiner: 1999: Imperial College, University of Wales Swansea, University of Glasgow; 2000: University of Edinburgh, University of Sheffield, University of Newcastle; 2001: University of Bath, Open University, University of Trondheim (Norway); 2003: University of Lancaster; 2005: University of Leeds; 2006: University of Sheffield; 2007: University of Cambridge, University of Hertfordshire; 2008: University of Glasgow, Imperial College, University of Cambridge, University of Leeds; 2011: University of Warwick; 2014: University of Bath; 2016: University of Côte d'Azur (France); 2017: University of Paris-Saclay (France), University of Glasgow; 2019: École Polytechnique Fédérale de Lausanne (Switzerland); University of Jyväskylä (Finland); 2020: University of Oxford; University of Edinburgh.

Internal PhD examiner: Leeds (x4), Nottingham (x3).

University of South Carolina (2011-2013): Several PhD Committees and an undergraduate honors dissertation committee.

Habilitation: Ecole Normale Supérieure Cachan, France (2013), Université d'Auvergne, France (2015).

Recent administrative experience

2019-2020 Postgraduate Research Admissions Director

2014-2018 Head of School, School of Mathematical Sciences (SoM)

2014-2018 Faculty of Science Leadership Group/Management Board

2014-2018 Chair, Executive Board, SoM

2014-2018 Chair, Examination Boards, SoM

2014-2018 Equality, Diversity and Inclusion Committee, SoM

2014-2018 Undergraduate Learning Community Forum, SoM

2014-2018 Research Board, SoM

2014-2018 University of Nottingham Senate

2014-2018 Chair, appointment panels, SoM
2015-2018 Chair, Data Driven Discovery Research Priority Area, University of Nottingham
2014-2015 Chair, Big Data Initiative, University of Nottingham
2013 Head of Statistics and Probability Research Group, SoM
2012-2018 Chair, Workload Model Group, SoM
2013 Royal Statistical Society. President Nominating Committee.

Presentations

I have given over 200 presentations in many countries, including Australia, Austria, Belgium, Brazil, Canada, Denmark, Finland, France, Greece, Germany, Hong Kong, Hungary, India, Italy, Lithuania, New Zealand, Romania, South Africa, Spain, Sweden, Switzerland, Turkey, UK, USA.

1. Manifold valued data analysis of samples of brain networks. Remote presentation at ENAR, Nashville, March 24, 2020.
2. Smoothing splines on Riemannian manifolds, with applications to 3D shape spaces. CMStatistics, London. December 15, 2019.
3. Object data driven discovery. Joint Statistical Meetings, Denver. July 31 2019.
4. Object data driven discovery. Congress of Romanian Mathematicians, Galati, Romania, June 30, 2019.
5. Object oriented data analysis of samples of networks, Oberwolfach, Germany, June 18, 2019.
6. 3rd David Finney Lecture, "Object data driven discovery", Centre for Statistics, University of Edinburgh, June 10, 2019.
7. Manifold-valued data analysis of samples of networks, Department of Mathematics and Statistics, University of Jyväskylä, Finland, June 4, 2019.
8. Object data driven discovery, Department of Mathematics and Statistics, University of Helsinki, Finland, June 3, 2019.
9. Manifold-valued data analysis of samples of networks: Department of Statistics, University of South Carolina, February 21, 2019.
10. Manifold-valued data analysis of samples of networks: Department of Statistics, Ohio State University, March 5, 2019.
11. Manifold-valued data analysis of samples of networks: Department of Statistics, Florida State University, March 8, 2019.
12. Object data driven discovery, Newton Institute, Cambridge, March 18, 2018.
13. Bayesian Top Space and Quotient Space inference for object data, Newton Institute, Cambridge, November 15, 2017.
14. Principal nested sub-space analysis on manifolds, Workshop on Applications-Driven Geometric Functional Data Analysis, Florida State University, USA, October 9, 2017.
15. Bayesian ambient space inference for object data, CIRM Luminy, France, September 1, 2017.
16. Object Data Driven Discovery, Italian Statistical Society Conference, Florence, June 29, 2017.
17. Sparsity and measurement error in the statistical analysis of MEG data. International Biometric Society Regional Meeting on *Statistical image analysis in medicine and biology*, London, May 23, 2017.
18. Penalized Euclidean Distance Regression, Eötvös Loránd University, Budapest, April 28, 2017.
19. Statistical shape analysis: faces, arteries and enzymes, Eötvös Loránd University, Budapest, April 25, 2017.
20. Principal Nested Shape Space Analysis of Molecular Dynamics Data statistics seminar, University of Cambridge, November 18, 2016.

21. Principal Nested Shape Space Analysis of Molecular Dynamics Data JSM 2016, Chicago, USA. August 2, 2016.
22. Principal nested spheres analysis of molecular dynamics data, Today's Data Predicting Tomorrow, Centre for Data Science, Loughborough University, April 12, 2016.
23. A statistical journey: from Florence Nightingale to Homer Simpson, Mathsoc Talk, University of Nottingham, March 15, 2016.
24. Principal nested shape spaces, with applications to molecular dynamics data CMStatistics, London, December 12, 2015.
25. Ambient space inference for functional data LASR 2015, University of Leeds, June 30, 2015.
26. Penalized Euclidean Distance Regression Statistics Seminar, University of York, May 14, 2015.
27. Penalized Euclidean Distance Regression STOR-i Annual Workshop, Lancaster University, January 8, 2015.
28. Sparse Paradigm Free Mapping Statistical Challenges in Neuroscience, University of Warwick, September 3, 2014.
29. High-dimensional manifold-valued data analysis: principal nested subspaces SIAM Imaging Science Conference, Minisymposium, Hong Kong, May 14, 2014.
30. Curve modelling in shape spaces Rome III University, Italy, December 16, 2013.
31. Sparse Paradigm Free Mapping: detection of brain activations and resting state networks in fMRI Newcastle University, December 6, 2013.
32. Discussant: Shape Analysis session. SCO 2013, Politecnico di Milano, Italy, September 11, 2013.
33. Bayesian Registration and Shape Analysis of Object Data, with Applications to Proteomics and Medical Imaging, Joint Statistical Meetings, Montreal, Canada. August 7, 2013.
34. 3D Shape Analysis European Meeting of Statisticians, Budapest, Hungary. July 25, 2013.
35. Sparse Paradigm Free Mapping: an inverse problem in fMRI, University College London, Centre for Inverse Problems Opening Workshop, March 18, 2013.
36. Bayesian peptide identification from mass spectrometry data, ISBA Regional Meeting/IWCBTA, Banaras Hindu University, Varanasi, India. January 10, 2013.
37. Bayesian registration and shape analysis of object data, with applications to proteomics and medical imaging, Statistics seminar, Durham University, December 3, 2012.
38. Registration Invariance, Bayesian protein analysis, Carotid Artery Analysis, Statistics of Time Warpings and Phase Variations, MBI, Columbus, Ohio, November 13-16, 2012.
39. Sparse Paradigm Free Mapping: detection of activations and resting state networks in fMRI, Statistische Woche, Technical University Vienna, September 19, 2012.
40. Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields, Department of Biostatistics, MD Anderson Cancer Center, Houston, May 10, 2012.
41. Sparse Paradigm Free Mapping: detection of activations and resting state networks in fMRI, NOGGINS Workshop, Department of Statistics, University of Georgia, April 19, 2012.
42. Sparse Paradigm Free Mapping: detection of activations and resting state networks in fMRI, Applied Mathematics Colloquium, New Jersey Institute of Technology, February 17, 2012.
43. Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields, Department of Biostatistics, Georgia Health Sciences University, Augusta, February 2, 2012.
44. Power Euclidean metrics for covariance matrices, with application to Diffusion Tensor Imaging, Biostatistics Forum, University of South Carolina, September 28, 2011.
45. Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields, Department of Mathematical Sciences, Clemson University, September 15, 2011.
46. Curve modeling in shape spaces, Computation for Anatomy Workshop, Banff International Research Station, Banff Canada, August 28, 2011.

47. Manifold data analysis, Joint Statistical Meetings, Miami Beach, August 3, 2011.
48. Bayesian molecular alignment using random fields, Leeds LASR Workshop, Leeds, UK, July 6, 2011.
49. Manifolds, metrics and geometric correspondence, AOOD Transitional Workshop, SAMSI, North Carolina, June 10, 2011.
50. Paradigm Free Mapping with Sparse Regression, SRCOS meeting, Hickory Knob State Park, McCormick, South Carolina, June 7, 2011.
51. Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields, Department of Electrical and Computer Engineering, North Carolina State University, April 15, 2011.
52. Face shape identification, South Carolina Chapter of the ASA, 41st Annual Meeting, April 8, 2011.
53. Mixed effect modelling of proteomic mass-spectrometry data, ENAR, Miami, March 21, 2011.
54. Curve modeling in shape spaces, Biostatistics seminar, University of North Carolina, Chapel-Hill. February 23, 2011.
55. 'Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields.' Statistics Seminar, Cornell University, October 1, 2010
56. Signal Processing and Communications Seminar, University of Cambridge, November 17, 2010.
57. Several presentations as part of the Analysis of Object Data Program: Paradigm Free Mapping in fMRI, Metrics for Covariance Matrices, Shape matching using random fields, Autumn 2010, SAMSI, North Carolina.
58. Three sessions on Statistical Shape Analysis as part of the 'Analysis of Object Data I' course, SAMSI, North Carolina, September/October, 2010.
59. 'Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields.' European Meeting of Statisticians, University of Piraeus, Greece, August 21, 2010.
60. 'Statistical analysis of brains using diffusion tensor images.' International Workshop on Statistical Modelling, University of Glasgow, July 8, 2010.
61. 'A Statistical Journey: Florence Nightingale Meets Homer Simpson.' Open Day, University of Nottingham, June 26, 2010.
62. 'Curve modelling in shape spaces.' Second UK One-day Meeting on Morphometrics and Statistical Shape Analysis, University of Kent, June 7, 2010.
63. 'Statistics of faces.' UCAS talk, University of Nottingham, March 3, 2010.
64. 'Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields.' Department of Statistics, Florida State University, December 4, 2009.
65. 'Face shape identification: how different are we?' Research Seminar, Department of Statistics, University of South Carolina. November 24, 2009.
66. 'Bayesian Alignment of Unlabeled Marked Point Sets Using Random Fields.' Department of Statistical Science, Duke University, November 13, 2009.
67. 'Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging.' Shape Stats/Medial Geometry Group. University of North Carolina, Chapel Hill. October 9, 2009.
68. 'Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging', Department of Statistics Colloquium, University of Georgia, October 1, 2009.
69. 'Non-Euclidean statistical analysis of covariance matrices and diffusion tensors' ISI Congress, Durban, South Africa, August 19, 2009.
70. 'Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging' Leeds LASR Workshop 2009, July 7, 2009.
71. 'Face shape identification' RSS East Kent Local Group, July 2, 2009.

72. 'Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging' SRCOS 2009, Jekyll Island, Georgia , June 10, 2009.
73. 'Mixed effect modeling of proteomic mass-spectrometry data' Department of Statistics Colloquium, University of South Carolina, February 26th, 2009.
74. 'A short introduction to Bayesian statistics' Sir Peter Mansfield MR Centre, University of Nottingham, December 5th, 2008.
75. 'Non-Euclidean statistics for diffusion tensors in brain imaging', RSS General Applications Section, RSS Headquarters, December 3rd, 2008.
76. 'Face shape identification', Young Statisticians Training Day, Royal Statistical Society International Conference 2008, University of Nottingham, September 1st, 2008.
77. 'Non-Euclidean statistics for covariance matrices, with applications to diffusion tensor imaging', University of Warwick, June 19th, 2008.
78. 'Non-Euclidean statistics for shapes and covariance matrices', INRIA, Sophia Antipolis, France, June 6th, 2008.
79. 'Shape analysis and molecule matching', Shape and Size in Medicine, Biotechnology and Materials Science, Workshop, Università degli Studi di Milano, Italy, April 29th, 2008.
80. 'Face shape identification', Research Students Conference, Plenary presentation, University of Nottingham, March 31st, 2008.
81. 'Multilevel modelling of proteomic mass spectrometry data', Newton Institute, University of Cambridge, March 13th, 2008.
82. 'The statistical analysis of diffusion tensor images', Seminar, University of Lancaster, February 15th, 2008.
83. 'Shape analysis and molecule matching', RSS North East Group, University of Newcastle, January 17th, 2008.
84. 'Shape analysis and molecule matching', Isaac Newton Institute Workshop, January 7th, 2008 (poster).
85. 'Face shape identification', Internal Seminar, Division of Statistics, University of Nottingham, December 19th, 2007.
86. 'Shape analysis and molecule matching', Seminar, University of Southampton, December 6th, 2007.
87. 'The statistical analysis of diffusion tensor images', Seminar, University of Bristol, November 30th, 2007.
88. 'Shape analysis and molecule matching' Seminar, University of South Carolina, USA, September 27th, 2007.
89. 'Factored principal components analysis and likelihood based face recognition' International Workshop on Statistical Modelling, Barcelona, July 4th, 2007.
90. 'Face shape identification: how different are we?' Seminar, University of Bath, April 27th, 2007.
91. 'Travels in Shape Spaces' Seminar, University of Glasgow, November 29th, 2006.
92. 'Statistical shape analysis and its applications' Data Sciences Meeting, Unilever, Port Sunlight, Wirral, October 4th, 2006.
93. 'Face shape identification: how different are we?' RSS Conference, Belfast, September 11th, 2006.
94. 'Ornstein-Uhlenbeck shape processes, simulation and inference' IMS Annual Meeting, Rio de Janeiro, Brazil, July 30th, 2006.
95. 'Travels in Shape Spaces' Swiss Statistics Seminar, Berne, Switzerland, May 19th, 2006.
96. 'Shape space smoothing splines for planar landmark data' IMA workshop on Shape Spaces, Minneapolis, USA, April 3rd-7th, 2006 (poster).
97. 'Summarizing shape variability and hypothesis testing'. MICCAI Tutorial on Statistics of Anatomic Geometry, Palm Springs, USA, October 26th, 2005.
98. 'Statistical analysis of unlabelled point sets: comparing molecules'. Stochastic geometry and its applications, Berne, Switzerland, October 7th, 2005.

99. 'Statistical analysis of SELDI protein chip data from breast cancer cell lines exposed to chemotherapeutic agents LASR workshop', University of Leeds, July 4th, 2005.
100. 'Shape densities, shape diffusions and some old friends'. RSS General Applications and Statistical Computing Sections, London. June 8th, 2005.
101. 'Non-stationary spatio-temporal analysis of karst water levels' RSS/EPSRC funded workshop on Spatio-temporal Modelling, University of Southampton, May 26th, 2005.
102. 'Surface shape analysis, with applications to MR brain images and spine profiles' RSS Medical Section, London. April 26th, 2005.
103. 'Statistical analysis on high-dimensional spheres and shape spaces' Bernoulli World Congress, Barcelona. July 30th, 2004.
104. 'Shape analysis in mathematical medicine' Keynote, ECCOMAS, Jyväskylä, Finland. July 25th, 2004.
105. 'Size and shape analysis of DNA molecular dynamics simulations' Minisymposium, ECCOMAS, Jyväskylä, Finland. July 25th, 2004.
106. 'Hierarchical Bayesian modelling of spatial age-dependent mortality' EPSRC/NERC EMS workshop, Nottingham. April 15th, 2004.
107. 'Statistical shape analysis [short course]' 3e cycle romand de statistique et probabilités appliqués, Les Diablerets, Switzerland. March 7th-10th, 2004.
108. 'Statistical shape analysis of points, functions, curves and surfaces' Young Researcher's Day, Université Catholique Louvain, Belgium. 19th May, 2003.
109. Three lectures at the CNRS funded workshop Mathematics in Computer Vision, Cachan, France, May, 2003.
110. 'Surface shape analysis from MR images' Sesto Convegno Internazionale Metodi Quantitativi per le Scienze Applicate, Sienna, Italy, September 19th, 2002.
111. 'Statistical Shape Analysis [short course]' Jyväskylä Summer School, Jyväskylä, Finland. August 12-16, 2002.
112. 'Statistical Shape Analysis [short course]' SINAPE (Brazilian National Symposium of Probability and Statistics), Aguas de Lindoia, Brazil. 29th July-2nd August, 2002.
113. 'Surface shape analysis from MR images' SINAPE (Brazilian National Symposium of Probability and Statistics), Aguas de Lindoia, Brazil. 29th July-2nd August, 2002.
114. 'Nonparametric shape analysis' Nonparameterics conference, Crete, Greece. July 17th, 2002.
115. 'Surface shape analysis from MR images' Stochastic geometry, spatial statistics and statistical physics workshop. Oberwolfach, Germany. 10th-16th, February, 2002.
116. 'Statistical Shape Analysis [short course]' Danish Technical University, Copenhagen. November, 2001.
117. 'Statistical Shape Analysis [short course]' RSS conference Glasgow, July, 2001.
118. 'Surface shape from MR images' Leeds LASR conference on Functional and spatial data, July 2001.

plus approximately 90 presentations 1987-2000

2000 Computational Stochastics workshop, Århus, Denmark; Leeds LASR Workshop: Shape, directions and images; Pescara, Italy: Spatial Statistics in Archaeology; Minnesota, USA: Computer Vision Workshop; RSS Statistics in Image Analysis and Processing study group meeting Bath.

1999 A series of 8 workshops and a conference presentation on shape analysis at the Indian Statistical Institute, Calcutta; Statistical image analysis workshop, Gothenburg, Sweden; Shape Analysis short course at the JSM, Baltimore, USA.

1998 Oberwolfach, Germany (Stochastic Geometry and Spatial Statistics meeting <https://doi.org/10.14760/TB-1998-1>); Sherbrooke, Canada (Statistical Society of Canada); Vilnius, Lithuania (EMS); Strathclyde (RSS98)

1997 Duke University, USA (Statistics workshop, three lectures); Auckland (New Zealand Statistical Association conference); Newcastle University, Australia (Image matching workshop); Istanbul, Turkey (ISI Biennial conference); Open University (8th one day conference on Spatial Statistics)

1996 Toulouse (Semstat3)

1995 Oberwolfach, Germany (Mathematische Stochastik meeting <https://doi.org/10.14760/TB-1995-10>); Leeds (CISSA shape conference)

1994 Toronto (ASA joint meetings); Newcastle (RSS94)

1993 Philadelphia (IMS/ENAR Regional Meeting); Paris (ORSA Probability in Engineering); Lithuania (European Young Statisticians Meeting); Leeds (Shape workshop).

1992 Hong Kong (Multivariate Analysis symposium); Sydney (Anatomy symposium); Sheffield (RSS92).

1990 Princeton, USA (SS Wilks Workshop); Oberwolfach, Germany (Probabilities on Groups conference).

1989 Leuven, Belgium (Statistics, Earth and Space Sciences); Glasgow (Research students' conference).

1988 Surrey (Research students' conference)

and additional statistics seminars at

2004 Sheffield. **2003** Lancaster, Kent, York. **2001** Newcastle, Manchester, Cambridge. **2000** Sheffield, Bristol, Eötvös Loránd University (Budapest), Edinburgh. **1999** Bath, Stathclyde. **1998** University of Western Ontario, Canada; Joint Reading/Surrey/Royal Holloway seminar at Reading; Birmingham. **1997** Australian Statistical Association, Canberra Chapter; ANU, Canberra and University of Queensland, Brisbane, Australia. **1996** Imperial College, University of Chicago (USA). **1995** Bristol, Birmingham, Highland RSS Group, Leeds (Medical Statistics). **1994** UMIST, Warwick. **1993** Penn State (USA), Rutgers (New Jersey, USA), Temple (Philadelphia, USA), Bell Labs (New Jersey, USA), Lancaster. **1992** Sydney (CSIRO), Western Australia (Mathematics), Western Australia (Biology), London (LSE). **1991** Surrey, Bristol, Glasgow, Edinburgh, Manchester. **1990** Sheffield, Nottingham, Leeds (Medical Statistics). **1988** Leeds. **1987** Leeds.

Professional and learned societies

Associate Fellow of the Higher Education Academy

Fellow of the Royal Statistical Society

Member of the American Statistical Association

Elected Fellow of the Institute of Mathematical Statistics (2012)

Elected Member of the International Statistical Institute (2004)

Chartered Statistician (CStat) of the Royal Statistical Society (2002, revalidated 2016).

Conference and Workshop Committees

2019 Mathematical Foundations of Computational Anatomy, Shenzhen, China.

2017 Mathematical Foundations of Computational Anatomy, Quebec City, Canada.

2016 Statistical analysis of manifold-valued data and beyond, University of Nottingham

2016, 2017 CVPR workshop on DIFFerential geometry in Computer Vision and Machine Learning (DIFF-CVML)

2015 Mathematical Foundations of Computational Anatomy, Munich, Germany.

2013 Mathematical Foundations of Computational Anatomy, Nagoya, Japan.

2010-11 SAMSI Program on the Analysis of Object Oriented Data, North Carolina.

2011 Mathematical Foundations of Computational Anatomy, Toronto.

2009 The 10th European Congress of Stereology and Image Analysis, Milan.

2008 Mathematical Foundations of Computational Anatomy, New York.

2006 Mathematical Foundations of Computational Anatomy, Copenhagen.

2004 NERC-EPSRC EMS workshop on modelling uncertainty in complex environmental and biological systems, Nottingham.

1995-96, 1998-99 Leeds Research Workshop joint organizer

1994-1997 Royal Statistical Society: Research Section Committee. Joint organizer of RSS/BMVA meetings.

1995-1996 The RSS96 Conference Planning Committee (Research Section Representative)

1995 European Young Statisticians' Meeting (EYSM95) UK Organizer

Editorial service and reviewing

I have carried out a large amount of refereeing for all the main Statistics journals. I have also reviewed for biomedical journals, image analysis journals, book publishers, and many research funding councils.

2018 EPSRC CDT outline stage panel (April 2018)

2016 EPSRC Mathematics Panel (September 2016)

2014-2016 Royal Society International Exchanges Committee

2007-2013 Member of the Editorial Board of Methodology and Computing in Applied Probability

2008-2010 Joint Guest Editor: Shape Analysis Special Issue in IEEE Pattern Analysis and Machine Intelligence (April 2010 issue)

2007-2008 Royal Statistical Society Research Section Committee Chair

The Research Section Committee deals with the editorial processes for handling the Royal Statistical Society's prestigious discussion papers, and other research related issues

2006 EPSRC Doctoral Training Grant Mathematics Panel (Postgraduate Training Allocations, December 2006)

2006 EPSRC Review panel for Statistics Mobility Fellowships (May 2006)

2003 Statistics assessor for University of Hong Kong RAE internal review

2006-2007 Royal Statistical Society Research Section Committee member

2002-2005 Associate Editor of the Journal of the Royal Statistical Society Series C

2002-2008 EPSRC Peer Review College member

2000-2002 EPSRC Cross-disciplinary panel

2000 FCT Portuguese Foundation of Science Mathematics visiting panel

1998-2000 RSS Research Section Honorary Secretary

1995-1998 Editorial board of Computerized Medical Imaging and Graphics Journal

1997-1998 Associate Editor of the Journal of the Royal Statistical Society Series B

1994-1997 Royal Statistical Society Research Section Committee member

1993-1998 Book Review Editor for Journal of Applied Statistics.

Earlier Service (1991-2012)

2011-2012 UofSC Department of Statistics Hiring Committee Member.

2011-2012 Colloquium Chair, Department of Statistics, University of South Carolina.

2011-2012 Palmetto Lecturer Chair, Department of Statistics.

2011-2012 May Qualifying Exam Committee (Chair in 2011), Department of Statistics, University of South Carolina.

2009-2011 Program Organizer SAMSI program on the Analysis of Object Data.

2011-2012 Department of Statistics Computing Committee Member, University of South Carolina.

2009 Department of Statistics Hiring Committee Member.

2009 Department of Statistics Computing Committee Chair, University of South Carolina.

2009-2012 Theme Leader, Highly Structured Data, Department of Statistics, University of South Carolina.

2006-2009 Management Group, Centre for Medical Imaging and Analysis on the GRID, UoN.

2007-2008 Bridging-the-Gaps Strategy Group. Large Datasets Theme Leader.

2007-2008 Knowledge Transfer Network (KTN) for Industrial Mathematics Scientific Committee member, Smith Institute.

2006-2008 Honours Committee, Royal Statistical Society

2006-2008 Royal Statistical Society Consultation Group

2004-2007 Director of Research and Chair of Research Committee, School of Mathematical Sciences.

2005-2006 Postgraduate Training Working Group (Chair). 2005-2007 Engineering and Physical Sciences Strategy Group for research, University of Nottingham.

2004-2005 Faculty of Science Postgraduate Taught Courses Committee

2002-2004 Honorary Secretary (Membership Secretary), Royal Statistical Society.

2002-2004 Member of Council, Royal Statistical Society,
2002-2004 Executive Committee member, Royal Statistical Society,
2002-2004 Professional Affairs Committee member, Royal Statistical Society.
2002-2004 Education Committee member, Royal Statistical Society
2002-2004 Examinations Committee member, Royal Statistical Society.
2002-2004 Membership Services Group (Chair), Royal Statistical Society.
2000-2004 Resources Committee Chair. 2000-2004 Examinations Monitoring Group. 2001 Major Course Review Committee; 2000-2008 Statistics Web Co-ordinator. 1997-2000 Postgraduate Research and Admissions Tutor for Statistics; 1998-2000 School of Mathematics Staff/Postgraduate Committee (Chair); 1998-2000 Programme Committee of the RSS; 1997-2000 Statistics Seminar Organizer; 1998-2000 PG training organizer for the School of Mathematics; 1990-96, 97-99 (Leeds), 2000-01 (Nottingham) UCAS Interviewer; 1998-1999 Faculty Research Committee; 1995-96, 97-2000 School of Mathematics IT Committee; 1997-2000 Department of Statistics Teaching and Learning Committee; 1994-2000 RSS Leeds-Bradford Local Group Committee; 1995-1996, 1997-1999 Centre of Medical Imaging Research steering group, University of Leeds; 1997-2000 School of Mathematics/Education Liason Committee; 1997-2000 School of Mathematics Public Relations Committee; 1998-2000 School of Mathematics Research Advisory Group; 1999-2000 School of Mathematics Staff Development Group; 1991-1997 University of Leeds: Board of the Faculty of Science; 1994-1996 Web developer for Department of Statistics, Leeds.

May 16, 2021.