CURRICULUM VITAE **Peter J. Diggle**

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Born: 24.2.1950, Lancashire, England.
Nationality: Australian and British
Home address: 5 Meadowside, Lancaster LA1 3AQ, UK

Academic qualifications

1972: B.Sc. (Liverpool) with First Class Honours in Computational and Statistical Science.
1973: M.Sc. (Oxford) by thesis, "Contagion and Allied Processes".
1977: Ph.D. (Newcastle-upon-Tyne) by thesis, "Spatial Processes with Applications in Ecology".

Current posts

Distinguished University Professor Emeritus, Lancaster University
Adjunct Professor of Biostatistics, Johns Hopkins University School of Public Health
Adjunct Professor, Yale University School of Public Health

Previous posts

University of Newcastle-upon-Tyne Lecturer in Statistics, January 1974 to December 1983; Reader in Statistics, January 1984 to December 1984

CSIRO Division of Mathematics and Statistics e Senior Research Scientist, January 1985 to June 1986; Principal Research Scientist, July 1986 to June 1987; Chief Research Scientist and Chief of Division, July 1987 to June 1988.

University of Liverpool Professor, Department of Epidemiology and Population Health (part-time), December 2011 to September 2015.

Health Data Research UK Head of Training, then Director of PhD Programme, June 2018 to April 2021 (part-time)

Academic Leadership at Lancaster University

Professor of Statistics, 1988–2007; Founder and Director of Medical Statistics Unit, 1995 to 2001; University Dean for Research, 1998 to 2001; EPSRC Senior Fellow, 2004 to 2008; Associate Dean for Research, School of Health and Medicine, 2007-2011; Founding leader of CHICAS Research Group 2007-2017; Distinguished University Professor since 2007

Named lectures and awards

1986. H.O. Hartley Lecture, Texas A&M University, USA
1997. Royal Statistical Society Guy Medal in Silver
2001. American Statistical Association, Elected Fellow.
2006. Armitage Lecture, Cambridge, UK.
2015. John Stuart Hunter Lecture, United Arab Emirates University, UAE
2017. David Sprott Lecture, University of Waterloo, Canada
2017. Pascal Fellow and Lecture, Durham University, UK
2018. Colin White Lecture, Yale University, USA
2018. Francqui Chair, Universities of Hasselt and Leuven, Belgium
2018. Royal Statistical Society Vic Barnett Lecture, Cardiff, UK
2020. Sally Hollis Memorial lecture, Manchester, UK
2023. Dean's Medal, Johns Hopkins University School of Public Health

Other professional activities

Royal Statistical Society. Fellow since 1974. Honorary Secretary, North Eastern Local Group, 1977-1979. Chairman, North Eastern Local Group, 1980-1982. Member of Research Section Committee, 1980-1987. Member of Council 1983-1985. Joint Editor of JRSSB, 1984-1987. Honorary Secretary, 1990-1996. Associate Editor of Applied Statistics, 1998-2000. Chair of Research Section Committee, 1998-2000. President, 2014-2016.

Biometric Society Member since 1978. Joint organiser of one day meeting "Biometric Aspects of Spatial Processes" October 1978. Joint organiser of residential workshop "Spatial Analysis in Ecology" September 1982 (for Mathematical Ecology Study Group). Session organiser, 12th International Biometrics Conference IBC, Tokyo, 1984; Session organiser, 16th IBC, Hamilton, 1990. Associate Editor of *Biometrics*, 1984-1989. Invited speaker, 24th IBC, Cairns, 2006. Invited speaker, 25th IBC, Dublin, 2008. Session organiser, 26th IBC, Florianopolis, 2010. Invited speaker, 28th IBC, Florence, 2014

Medical Research Council Member of Public Health and Health Services Research Board, 2007-2008. Member of Population and Systems Medicine Research Board, 2008-2011. Chair of Strategic Skills Fellowships Schemes Panel, 2012-2016 Member of Training and Careers Group, 2012-2016 Member of Population Health Sciences Group, 2014-2016

Wellcome Trust Member of Sustaining Health Committee, 2013-2017

Biometrika Associate Editor, 1991-1992. Member, Board of Trustees, since 1993.

International Statistical Institute Invited speaker, 43rd ISI Session, Buenos Aires, 1983. Elected Ordinary Member, 1985. Invited Speaker, First World Congress of Bernoulli Society, Tashkent, 1986. Invited Speaker, 46th ISI Session, Tokyo, 1987. Member, Programme Committee, 48th ISI Session, Cairo, 1991. Organiser of meeting, "Epidemiological studies of industrial pollutants", at 48th ISI Session, Cairo, 1991. Member of Programme Committee, 50th ISI Session, Beijing, 1995. Invited speaker, 56th ISI Session, Lisbon, 2007. Invited speaker, 58th ISI Session, Dublin, 2011

Bernoulli Society Member, 1981-2004. Member of Council, 1987-1991. Programme Coordinator, European Regional Committee, 1994-1996. Invited speaker, Bernoulli World Congress, Tashkent, 1986. Invited speaker, European Meeting of Statisticians, Barcelona, 1991. Invited plenary speaker, Bernoulli World Congress, Istanbul, 2011.

Biostatistics Founding co-editor, 1999-2009; Member of Advisory Board, since 2010

Statistical Science Associate Editor, 2014-2016

Fisher Memorial Trust Trustee, 2015-2018

Teaching experience

I have developed and taught a wide range of courses in a university context, including undergraduate and postgraduate degree courses in probability and statistics, a limited amount of mathematics teaching, and statistics service teaching aimed at particular client groups.

I have developed and taught short courses for CPD programmes in the UK and overseas, in topic areas related to my research interests in spatial point processes, geostatistics, time series and longitudinal data.

I taught on the UK's EPSRC-funded national Academy for PhD Training in Statistics from its inception in 2008 until 2014.

I was instrumental in the formation of a partnership agreement between the Royal Statistical Society and the African Institute for Mathematical Sciences (AIMS), and have taught at AIMS Tanzania.

I have co-authored text-books in statistics and in pure mathematics.

Research Interests

My main areas of methodological research interest concern spatial statistics and longitudinal data analysis, especially as applied in the biomedical, health and environmental sciences. I have also worked in time series, Monte Carlo inference and non-parametric smoothing.

My main substantive research interests are in environmental epidemiology, tropical disease epidemiology and real-time health surveillance.

Research student supervision

Newcastle upon Tyne

Richard Gratton, Hana Ameen, David Coates, Ann-Lee Wang (PhD)
Arthur Pewsey (MPhil)

Lancaster graduating

Ibrahim Al Wasel, Julia Kelsall, Helen Wilson, Sara Morris, Louise Harper, Jon Barry, Jan Currie, Paulo Ribeiro, Patrick Brown, David Smith, Ting-Li Su, Ines Sousa, Irene Kaimi, Gerwyn Green, John Speakman, Tom Fanshawe, Annette Dobson, Susan Gooding, Alexandre Rodrigues, Michelle Stanton, Lisha Deng, Lydiane Agier, Nicola Reeve, Ozgur Asar, Emanuele Giorgi, Irene Larbi, Justice Aheto, Kamarul Musa, Rhiannon Edge, Michael Chipeta, James Chirombo, Benjamin Amoah, Poppy Miller, Jillian Gauld, Max Eyre (PhD)
Ann-Marie Jones (MPhil)
Alex Oldroyd, Katy Mitchell, Alexandria Walton (MSc)

Lancaster visiting

Isabel Natario (Lisbon), Victoria Ibanez (Valencia), Angela D'Elia (Florence), Jorge Mateu (Castellon), Turid Follestadt (Oslo), Andrei Tscheschel (Freiberg), Ole Christensen (Aalborg), Soren Lophaven(Copenhagen), Marina Paez (Rio de Janeiro), Raquel Menenzes (Santiago de Compostela), Dora Kocmanova (Leuven), Virgilio Gomez (Valencia), Massimiliano Copetti (Rome), Rosa Abelana (Barcelona), Rebeca Ramis (Madrid), Diego Giuliani (Rome), Audrey Dugué (Bordeaux), Nicolas Capian (Paris), Ibon Tamayo (Bilbao), Monica Hernandez (Mexico City), Marcelo Da Cunha (Rio De Janeiro), Katherine Grell (Copenhagen), Vanessa Sehaba (Parana State), Claudio Fronterre (Padua), Dileepa Ediriweera (Sri Lanka)

Liverpool

David Taylor-Robinson, Dan Wootton, Amanda Minter, Gabriel Pedra (PhD)

Liverpool School of Tropical Medicine

Shelui Collinson (current)

Yale graduating

Katie Owers, Kate Hacker (PhD)

African Institute for Mathematical Sciences

Eke Arua, Idelphonse Sode (current)

Publications

Books

1. DIGGLE, P.J. (1983). *Statistical Analysis of Spatial Point Patterns.* London: Academic press.
2. DIGGLE, P.J. (1990). *Time Series: a biostatistical introduction.* Oxford: Oxford University Press.
3. DIGGLE, P.J., LIANG, K.Y. and ZEGER, S.L. (1994). *Analysis of Longitudinal Data.* Oxford: Oxford University Press.
4. CHETWYND, A. and DIGGLE, P (1995). *Discrete Mathematics.* London: Edward Arnold.
5. GREGOIRE, T.G., BRILLINGER, D.R., DIGGLE, P.J., RUSSEK-COHEN, E, WARNER, W.G. and WOLFINGER, R.D. (eds) (1997). *Modeling Longitudinal and Spatially Correlated Data.* New York: Springer-Verlag.
6. DIGGLE, P.J. (2003). *Statistical Analysis of Spatial Point Patterns (second edition).* London : Edward Arnold.
7. Diggle, P.J., Heagerty, P., Liang, K.Y. and Zeger, S.L. (2002). *Analysis of Longitudinal Data (second edition).* Oxford: Oxford University Press.
8. Diggle, P.J. and Ribeiro, P.J. (2007). *Model-based Geostatistics.* New York : Springer.
9. Gelfand, A., Diggle, P.J., Fuentes, M. And Guttorp, P. (2010). *Handbook of Spatial Statistics.* Boca Raton: CRC Press.
10. Diggle, P.J. and Chetwynd, A.G. (2011). *Statistics and Scientific Method: an Introduction for Students and Researchers.* Oxford: Oxford University Press.
11. Diggle, P.J. (2013). *Statistical Analysis of Spatial and Spatio-Temporal Point Patterns (3rd edition)* Boca Raton: CRC Press
12. Diggle, P.J. and Giorgi, E. (2019). *Model-based Geostatistics: Methods and Applications in Global Public Health.* Boca Raton: CRC Press

Refereed journal articles: published

1. DIGGLE, P.J. (1975). Robust density estimation using distance methods. *Biometrika*, **62**, 39-48.

2. DIGGLE, P.J. (1976). A spatial stochastic model of inter-plant competition. *J. Appl. Prob.*, **13**, 662-71.

3. DIGGLE, P.J., BESAG, J. and GLEAVES, J.T. (1976). Statistical analysis of spatial point patterns by means of distance methods. *Biometrics*, **32**, 659-67.

4. DIGGLE, P.J. (1977). A note on robust density estimation for spatial point patterns. *Biometrika*, **64**, 91-5.

5. DIGGLE, P.J. (1977). The detection of random heterogeneity in plant populations. *Biometrics*, **33**, 390-4.

6. BESAG, J. and DIGGLE, P.J. (1977). Simple Monte Carlo tests for spatial pattern. *Appl.Statist.*, **26**, 327-33.

7. AHERNE, W.A. and DIGGLE, P.J. (1978). The estimation of neuronal population density by a robust distance method. *J. Micr.*, **114**, 285-93.

8. DIGGLE, P.J. (1978). On parameter estimation for spatial point processes. *J R. Statist. Soc. B*, **40**, 178-81.

9. DIGGLE, P.J. (1979). On parameter estimation and goodness-of-fit testing for spatial point patterns. *Biometrics*, **35**, 87-101.

10. DIGGLE, P.J. and KNUTELL, H. (1980). Estimating the width of a forest strip-road. *Scand. J. Statist.*, **7**, 85-9.

11. DIGGLE, P.J. and MATERN, B. (1980). On sampling designs for the study of nearest neighbour distributions in R^2. *Scand. J. Statist.*, **7**, 80-4.

12. DIGGLE, P.J. (1981). Statistical analysis of spatial point patterns. *N Z Statistician*, **16**, 22-41.

13. DIGGLE, P.J. (1981). Binary mosaics and the spatial pattern of heather. *Biometrics*, **37**, 531-9.

14. FORD, E.D. and DIGGLE, P.J. (1981). Competition for light in a plant monoculture modelled as a spatial stochastic process. *Ann. Bot.*, **48**, 481-500.

15. DIGGLE, P.J. (1982). Some statistical aspects of spatial distribution models for plants and trees. *Studia Forestalia Suecica*, **162**, 47pp.

16. GILL, G.V., BAYLIS, P.H., FLEAR, C.T.G., SKILLEN, A.W. and DIGGLE, P.J. (1982). Acute biochemical responses to moderate beer drinking. *Brit. Med. J.*, **285**, 1770-3.

17. DIGGLE P.J. and COX, T.F. (1983). Some distance-based tests of independence for sparsely-sampled multivariate spatial point patterns. *Int. Statist. Rev.*, **51**, 11-23.

18. DIGGLE, P.J. and MILNE, R.K. (1983). Bivariate Cox processes: some models for bivariate spatial point patterns. *J. R. Statist. Soc. B*, **45**, 11-21.

19. DIGGLE, P.J. and MILNE, R.K. (1983). Negative binomial quadrat counts and point processes. *Scand. J. Statist.*, **10**, 257-67.

20. DIGGLE, P.J. and GRATTON, R.J. (1984). Monte Carlo methods of inference for implicit statistical models (with discussion). *J. R. Statist. Soc. B*, **46**, 193-227.

21. DIGGLE, P.J. (1985). A kernel method for smoothing point process data. *Appl. Statist.*, **34**, 138-47.

22. DIGGLE, P.J and FISHER, N.I. (1985). SPHERE: a contouring program for spherical data. *Computers and Geosciences*, **11**, 725-66.

23. DIGGLE, P.J., FISHER, N.I. and LEE, A.J. (1985). A comparison of tests of uniformity for spherical data. *Austral. J. Statist.*, **27**, 53-9.

24. HENZELL, R.F., PHILLIPS, J.N. and DIGGLE, P.J. (1985). Influence of subtoxic concentrations of herbicides and growth regulators on the viability of Arabadopsis thaliana progeny. *Weed Sci.*, **33**, 430-4.

25. MURDOCH, A.P., DIGGLE, P.J., DUNLOP, W. and KENDALL-TAYLOR, P. (1985). Determination of the frequency of pulsatile luteinising hormone secretion by time series analysis. *Clin. Endocrin.*, **22**, 341-6.

26. COATES, D.S. and DIGGLE, P.J. (1986). Tests for comparing two estimated spectral densities. *J. Time Series Anal.*, **7**, 7-20.

27. DIGGLE, P.J. and HALL, P. (1986). On the selection of terms in an orthogonal series density estimator. *J. Amer. Statist. Assn.*, **81**, 230-3.

28. DIGGLE, P.J. (1986). Displaced amacrine cells of a rabbit : analysis of a bivariate spatial point pattern. *J. Neurosci. Meth.*, **18**, 115-25.

29. SPAIN, A.V., SINCLAIR, D.F. and DIGGLE, P.J. (1986). Spatial distributions of the mounds of harvester and forager termites (Isoptera: Termitidae) at four locations in tropical North-Eastern Australia. *Acta Oecologica Oecol. Gener.*, **7**, 335-52.

30. BYRNE, G.F., DUNIN, F.X. AND DIGGLE, P.J. (1987). Forest evaporation and meteorological data : a test of a complementary theory advection-aridity approach. *Water Resources Research*, **24**, 30-4.

31. DIGGLE, P.J., GATES, D.J. and STIBBARD. A. (1987). A non-parametric estimator for pairwise-interaction point processes. *Biometrika*, **74**, 763-70.

32. DIGGLE. P.J. (1988). An approach to the analysis of repeated measurements. *Biometrics*, **44**, 959-71.

33. DIGGLE, P.J. and MARRON, J.S. (1988). Equivalence of smoothing parameter selectors in density and intensity estimation. *J. Amer. Statist. Assn.*, **83**, 793-800.

34. BERMAN, M. and DIGGLE, P.J. (1989). Estimating weighted integrals of the second-order intensity of a spatial point process. *J. R. Statist. Soc. B*, **51**, 81-92.

35. DIGGLE, P.J. (1989). Testing for random drop-outs in repeated measurements. *Biometrics*, **45**, 1255-8.

36. DIGGLE, P.J. and DONNELLY, J.B. (1989). The analysis of repeated measurements : a bibliography. *Austral. J. Statist.*, **31**, 183-93.

37. DIGGLE, P. J. and HUTCHINSON. M. F. (1989). On spline smoothing with autocorrelated errors. *Austral. J. Statist*, **31**, 194-9.

38. DIGGLE, P.J. and ZEGER, S.L. (1989). A non-Gaussian model for time-series with pulses. *J. Amer. Statist. Assn.*, **84**, 354-9.

39. MURDOCH, A.P., DIGGLE, P.J., WHITE, M.C, KENDALL-TAYLOR, P. and DUNLOP. W.(1989 a). Luteinizing hormone in women is secreted in superimposed pulse patterns. *Clin. Sci.*, **76**, 125-35.

40. MURDOCH, A.P., DIGGLE, P.J., WHITE, M.C., KENDALL-TAYLOR, P. and DUNLOP. W. (1989b). Luteinising hormone in polycystic ovary syndrome: reproducibility and pulsatile secretion. *J. Endocrinology*, **121**, 185-91.

41. NOBLE, J.C.. DIGGLE, P.J. and WHITFORD, W.G. (1989). The spatial distribution of termite pavements and hummock feeding sites in a semi-arid woodland in eastern Australia. *Oecologia Generalis*, **10**, 355-76.

42. ZEGER, S.L., SEE, L.C. and DIGGLE, P.J. (1989). Statistical methods for monitoring the AIDS epidemic. *Statistics in Medicine*, **8**, 3-21.

43. BJAALIE, J.G. and DIGGLE, P.J. (1990). Statistical analysis of corticopontine neuron distribution in visual areas 17, 18 and 19 of the cat. *J. Compar. Neurol.*, **295**, 15-32.

44. DIGGLE P.J. (1990). A point process modelling approach to raised incidence of a rare phenomenon in the vicinity of a pre-specified point. *J. R. Statist. Soc. A.*, **153**, 349-62.

45. MURDOCH, A.P., DIGGLE, P.J., WHITE, M.C., KENDALL-TAYLOR, P. and DUNLOP, W. (1990). Rapid pulses of luteinsing hormone during the ovarian cycle. *Br. J. Obstetrics and Gynaecology*, **97**, 329-33.

46. BJAALIE, J.G., DIGGLE, P.J., NIKUNDIWE, A., KARAGULLE, T. and BRODAL. P. (1992). Spatial segregation between populations of ponto-cerebellar neurons: statistical analysis of multivariate spatial interactions. *Anat. Rec.*, **231**, 510-23.

47. DIGGLE, P.J. and CHETWYND, A.G. (1991). Second-order analysis of spatial clustering for inhomogenous populations. *Biometrics*, **47**, 1155-63.

48. DIGGLE, P.J. and FISHER, N.I. (1991). Nonparametric comparison of cumulative periodograms. *Appl. Statist.*, **40**, 423-34.

49. DIGGLE, P.J., LANGE, N. and BENES, F.M. (1991). Analysis of variance for replicated spatial point patterns in clinical neuroanatomy. *J. Amer. Statist. Assn.*, **86**, 618-25.

50. BHOPAL, R.S. , DIGGLE, P.J. and ROWLINGSON, B.S. (1992). Pinpointing clusters of apparently sporadic cases of legionnaires' disease. *Brit. Med. J.*, **304**, 1022-7.

51. DIGGLE, P.J. and HALL, P. (1993). Fourier approach to nonparametric deconvolution of a density estimate. *J. R. Statist. Soc. B*, **55**, 523-31.

52. DIGGLE, P.J. and RICHARDSON, S. (1993). Epidemiological studies of industrial pollutants: an introduction. *Int. Statist Rev.*, **61**, 203-6.

53. ROWLINGSON, B.S. and DIGGLE, P.J. (1993). SPLANCS: Spatial point pattern analysis code in S-plus. *Computers in Geosciences*, **19**, 627-55.

54. ZEGER, S.L., CAREY, V. and DIGGLE, P.J. (1993). Modelling multivariate binary data with alternating logistic regressions. *Biometrika*, **80**, 517-26.

55. MOYEED, R.A. and DIGGLE, P.J. (1994). Rates of convergence in semi-parametric modelling of longitudinal data. *Austral. J. Statist.*, **36**, 75-93

56. ZEGER, S.L. and DIGGLE, P.J. (1994). Semi-parametric models for longitudinal data with application to CD4 cell numbers in HIV seroconverters. *Biometrics*, **50**, 689-99.

57. AZZALINI, A. and DIGGLE, P. (1994). Prediction of soil respiration rates from temperature moisture and soil type. *Appl. Statist.*, **43**, 505-26.

58. DIGGLE, P.J. and KENWARD, M.G. (1994). Informative dropout in longitudinal data analysis (with Discussion). *Appl. Statist.*, **43**, 49-93.

59. DIGGLE, P.J. and ROWLINGSON, B.S. (1994). A conditional approach to point process modelling of raised incidence. *J. R. Statist. Soc. A.*, **157**, 433-40.

60. DIGGLE, P.J., FIKSEL, T., GRABARNIK, P., OGATA, Y., STOYAN, D. and TANEMURA, M. (1994). A comparative study of methods of parameter estimation for pairwise-interaction point processes. *Int. Statist Rev.*, **62**, 99-117.

61. BARRY, J.T. and DIGGLE, P.J. (1995). Choosing the smoothing parameter in a Fourier approach to nonparametric deconvolution of a density estimate. *J. Nonparametric Statist.*, **5**, 224-32.

62. KELSALL, J. and DIGGLE, P.J. (1995). Kernel estimation of relative risk. *Bernoulli*, **1**, 3-16.

63. DIGGLE P.J., CHETWYND, A.G., HAGGKVIST, R. and MORRIS, S. (1995). Second-order analysis of space-time clustering. *Statist. Meth. Med Res.*, **4**, 124-36.

64. KELSALL, J. and DIGGLE, P.J. (1995). Nonparametric estimation of spatial variation in relative risk. *Statistics in Medicine*, **14**, 2335-42.

65. DIGGLE, P. and ELLIOTT, P. (1995). Disease risk near point sources: statistical issues for analyses using individual or spatially aggregated data. *J. Epidemiology and Community Health*, **49**, S20-27.

66. WOLFENDEN, J. and DIGGLE, P.J. (1995). Canopy gas exchange and growth of upland pasture swards in elevated CO_2. *New Phytologist*, **130**, 369-80.

67. GATRELL, A.C., BAILEY, T.C., DIGGLE, P.J. and ROWLINGSON, B.S. (1996). Spatial point pattern analysis and its application in geographical epidemiology. *Transactions of the Institute of British Geographers*, **NS21**, 256-74.

68. DIGGLE, P.J. and AL WASEL, I. (1997) Spectral analysis of replicated biomedical time series (with Discussion). *Applied Statistics*, **46**, 31-71.

69. DIGGLE, P., ELLIOTT, P., MORRIS, S. and SHADDICK, G. (1997). Regression modelling of disease risk in relation to point sources. *J. R. Statist. Soc. A*, **160**, 491-505.

70. LUCAS, P.W. and DIGGLE, P.J. (1997). The use of longitudinal data analysis to study the multi-seasonal growth responses of Norway and sitka spruce to summer exposure to ozone: implications for the determination of critical levels. *New Phytologist*, **137**, 315-23.

71. STANLEY, K.N., WALLACE J.S., CURRIE, J.E, DIGGLE, P.J. and JONES, K. (1997). The seasonalility of thermophilic Campylobacter populations in chickens. *Journal of Applied Bacteriology*, **82**, 219-24.

72. STANLEY, K.N., WALLACE, J.S, CURRIE, J.E, DIGGLE, P.J. and JONES, K. (1998). Seasonality of thermophilic campylobacters in lambs at slaughter. *Journal of Applied Microbiology*, **84**, 1111-6.

73. CHETWYND, A.G. and DIGGLE, P.J. (1998). On estimating the reduced second moment measure of a stationary spatial point process. *Australian and New Zealand Journal of Statistics*, **40**, 11-15.

74. CHETWYND, A.G., DIGGLE, P.J., DREWETT, R. and YOUNG, B. (1998). A mixture model for sucking patterns of breast-fed infants. *Statistics in Medicine*, **17**, 395-405.

75. DIGGLE, P.J., MOYEED, R.A. and TAWN, J.A. (1998). Model-based geostatistics (with Discussion). *Applied Statistics*, **47**, 299-350.

76. DIGGLE P. and VERBYLA, A. (1998). Nonparametric estimation of covariance structure in longitudinal data. *Biometrics*, **54**, 401-15.

77. KELSALL, J.E. and DIGGLE, P.J. (1998). Spatial variation in risk: a nonparametric binary regression approach. *Applied Statistics*, **47**, 559-73. (Corrigendum, **51**, 373.)

78. STANLEY, K.N., WALLACE, J.S., CURRIE, J.E, DIGGLE P.J. and JONES, K. (1998). The seasonal variation of thermophilic campylobacters in beef cattle, dairy cattle and calves. *Journal of Applied Microbiology*, **85**, 472-80.

79. MOLENBERGHS, G., MICHIELS, B., KENWARD, M.G. and DIGGLE, P. J. (1998). Monotone missing data and pattern-mixture models. *Statistica Neerlandica*, **52**, 153-61.

80. DIGGLE, P.J., MORRIS, S. and MORTON-JONES, A.J. (1999). Case-control isotonic regression for investigation of elevation in risk around a point source. *Statistics in Medicine*, **18**, 189–97.

81. MORTON-JONES, A.J, DIGGLE. P.J. and ELLIOTT, P. (1999). Investigation of excess environmental risk around putative sources: Stone's test with covariate adjustment. *Statistics in Medicine*, **18**, 189-197.

82. SMITH, D.M. and DIGGLE, P.J. (1999). Compliance in an anti-hypertension trial: a latent process model for binary longitudinal data. *Statistics in Medicine*, **18**, 357-70.

83. GILL.M.S., THALANGE, N.K.S., DIGGLE, P.J. and CLAYTON, P.E. (1999). Rhythms in urinary growth hormone, insulin-like growth factors-I (IGF-I) and IGF binding protein-3 excretion in children of normal stature. In *Saltation and Stasis in Human growth and development: evidence, methods and theory*, ed. M.Lampl, 59-70. London : Smith-Gordon.

84. GILL. M.S., THALANGE, N.K.S, FOSTER, P.J, TILLMANN, V., PRICE D.A., DIGGLE P.J. and CLAYTON, P.E. (1999). Regular fluctuations in growth hormone (GH) release determine normal human growth. *Growth Hormone and IGF Research*, **9**, 114-22.

85. THOMSON, M.C., CONNOR, S.J., D'ALESSANDRO, U., ROWLINGSON, B., DIGGLE, P.J. and CRESSWELL, M. (1999). Predicting malaria infection in Gambian children from satellite data and bed net use surveys: the importance of spatial correlation in the interpretation of results. *American Journal of Tropical Medicine and Hygiene*, **61**, 2–8.

86. DIGGLE, P.J., MORRIS, S.E. and WAKEFIELD, J.C. (2000). Point-source modelling using matched case control data. *Biostatistics*, **1**, 89-105.

87. Henderson R., Diggle, P. and Dobson, A. (2000). Joint modelling of longitudinal measurements and recurrent events. *Biostatistics*. **1**, 465–80.

88. MORTON-JONES, A.J., DIGGLE. P.J., PARKER L., DICKINSON, H.O. and BINKS, K. (2000). Additive isotonic regression models in epidemiology. *Statistics in Medicine*, **19**, 849–59.

89. DIGGLE, P.J., MATEU, J. and CLOUGH, H.E. (2000). A comparison between parametric and non-parametric approaches to the analysis of replicated spatial point patterns. *Advances in Applied Probability*, **32**, 331–43.

90. Brix, A. and Diggle, P.J. (2001). Spatio-temporal prediction for log-Gaussian Cox processes. *Journal of the Royal Statistical Society* B **63**, 823–41

91. BROWN, P.E., DIGGLE, P.J., LORD, M. and YOUNG PC, (2001). Space-time calibration of radar-rainfall data. *Applied Statistics*, **50**, 221–42.

92. CHETWYND, A.G, DIGGLE, P.J., MARSHALL, A. and PARSLOW, R. (2001). Investigation of spatial clustering from matched and stratified case-control studies. *Biostatistics* **2**, 277–93.

93. DUNN, C.E., KINGHAM, S., ROWLINGSON, B., BHOPAL, R.S., COCKINGS, S., FOY, C.J., ACQUILLA, S.D., HALPIN, J., DIGGLE, P. and WALKER, D. (2001). Analysing public health data: a comparison of three methodological approaches. *Health and Place* **7**, 1–12.

94. PRINCE, M., CHETWYND, A., DIGGLE, P., JARNER, M., METCALF, J. and JAMES, O (2001). The geographical distribution of primary biliary cirrhosis in a well-defined cohort. *Hepatology* **34**, 1083–8.

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51. Diggle, P.J. and Richardson. S. (2020). A perspective on real-time epidemic surveillance for Covid-19 *Significance*, `https://www.significancemagazine.com/685`

52. Diggle, P.J. (2022). Peter J Diggle's discussion contribution to papers in Session 1 of the Royal Statistical Society's Special Topic Meeting on COVID-19 transmission: 9 June 2021. *Journal of the Royal Statistical Society* A DOI:10.1111/rssa.12888

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56. Diggle, P.J. (2023). Proposer of the vote of thanks and contribution to the discussion of 'the second discussion meeting on statistical aspects of the COVID-19 pandemic' Journal of the Royal Statistical Society A

Research Grants

1989, £300 from Lancaster University Research Committee, visit by Prof. S.L. Zeger (Johns Hopkins University).

1990, £762 from ESRC and SERC, visiting fellowship for Prof Nan Laird (Harvard University).

1990-92, £36,540 from ESRC, Spatial Statistical Modelling in GIS Framework

1990-93, £63,964 from SERC, Stochastic Modelling and Inference for Collections of Short Time Series

1991, £12,000 from SERC, for Advanced Students' Short Course : Time Series and Measurements

1992-1994, £72,710 from ESRC, for Space-Time Statistical Models in GIS

1993, £1,500 from Lancaster University Research Committee, pump-priming for Medical Statistics Unit.

1993-1996, £199,986 from ESRC, for Longitudinal Data Analysis Research Unit (PI Richard Davies).

1993-1995, £6,000 from Marshall Islands Nationwide Radiological Study, for Spatial Distribution of Radionuclides on Rongelap Island.

1994-1997, £80,000 from Westlakes Research Institute, for Environmental Epidemiology.

1994-1996, £105,960 from ESRC, for Spatial Statistical Methods in Environmental Epidemiology.

1994-1997, £36,000 from Lancaster University Research Committee, for Medical Statistics Unit.

1995, £6,000 from ESRC and Lancaster University, for Longitudinal Data Analysis Workshop.

1995-1998, £120,000 from North West Regional Health Authority, for Medical Statistics Unit.

1995-1996, £10,000 from North West Regional Health Authority for Health Services Research and Development Network.

1995-1997, £97,525 from ESRC, for Longitudinal Data Analysis Software Development.

1996, £26,559 from Commission of the European Community, for Geostatistical Software Development.

1996-1997, £3,600 from NATO, for Combined Analysis of Longitudinal and Survival Data.

1996-1999, £21,750 from Lancashire and Cumbria Foundation for Medical Research, for Epidemiological Study of factors Affecting Semen Quality.

1996-1999, £36,450 from NHS Executive North West, for Epidemiological Study of Insulin-dependent Diabetes.

1996-1997, £12,000 from Powergen for Time Series Analysis of Respiratory Mortality and Sulphur Emissions.

1997, £14,300 from Glaxo-Wellcome for Analysis of longitudinal Epilepsy Trial.

1997-1999, £69,553 from EPSRC, for Modelling, Recursive Estimation and Prediction of Space-time Data (with PI Peter Young).

1997-2000. £142,00 from European Commission, for Statistical and Computational Methods for the Analysis of Spatial Data (with PI Gareth Roberts).

1997-2000, £102,570 from EPSRC, for Model-based Geostatistics

1997-2000, £158,471 from ESRC, for Analysis of Data from a 15 year Longitudinal Study of 6500 Normal Elderly People (with PI Patrick Rabbitt).

1997-1999, £13,466 from ESRC, for Training Programme in Longitudinal Data Analysis (with PI R Davies).

1998-2000, £160,581 from ESRC, for Case-control Methodology in Spatial Epidemiology.

1999-2002, £123,043 from EPSRC, for Quality Control for Continuous Sheet Production.

1999-2004, £53,500 from MAFF, for Spatial and Temporal Patterns of Foodborne Pathogens.

2000-2003, Euros 144,396 from European Commission for Environmental Time Series Modelling (with PI Peter Young).

2000-2002, £451,255 from Food Standards Agency, for Ascertainment and Enhancement of Gastrointestinal Infection, Surveillance and Statistics (AEGISS)

2001-2004, £158,800 from Veterinary Laboratories Agency, for Spatial Statistical Procedures Appropriate for M.Bovis Type Clustering and Multivariate Diffusion Models.

2002-2004, £147,536 from DEFRA, for Development of Novel Statistical Methods for Strain-typing TSE's (with PI Nigel French).

2002-2003, £30,000 from World Health Organisation, for Spatial Analysis of Loaloa and Lymphatic Filariasis Prevalence in Africa.

2003-2008, $256,319 from National Institutes of Health (USA) for Statistical Methods for Environmental Epidemiology.

2004-2009, £386,840 from EPSRC, for Spatial and Longitudinal Data Analysis (Senior Fellowship).

2004-2008 £4,504,585 (PI Nigel French, Liverpool) from DEFRA/HEFCE for Veterinary Training and Research Initiative

2005 $80,000 from WHO, for Calibration and Mapping for Parasitological and RAPLOA estimates of Loa loa Prevalence.

2005-2010 £4,480,000 from HEFCE, for Centre for Excellence in Postgraduate Statistics Teaching (with PI Amanda Chetwynd).

2005-2009 £433,126 from MRC, for Statistical Methodology for Longitudinal Studies in Clinical Research (with PI Paula Williamson).

2005-2008 £924,584 from ESRC, for Developing Statistical Modelling in the Social Sciences (with PI Brian Francis).

2007-2008 £60,000 from ROCHE for statistical analysis of longitudinal data on progression of renal disease (NEOERICA)

2007-2010 £600,000 (approx) from MRC for Biomarkers of Parkinson's disease (with PI David Allsop)

2009-2014 $81,000 from National Institutes of Health (USA) for Natural history of urban leptospirosis

2008-2011 £1,120,437 from ESRC, for Developing Statistical Modelling in the Social Sciences (Phase 2) (with PI Brian Francis).

2010-2013 £250,000 (approx) from NIHR (RfPB), for Self-hypnosis for Intraparetum Pain Management (SHIP) Trial (with PI Soo Downe)

2010-2013 £484,968 from MRC, for Statistical Modelling for Real-time Spatial Surveillance and Forecasting

2012-2016 £4,315,380 from MRC, for Sources, Seasonality, Transmission and Control: Campylobacter and Human Behaviour in a Changing Environment (with PI Sarah O'Brien)

2012-2016 £5,185,570 from DH/WT-HICF for Fully integrated, real-time detection, diagnosis and control of community diarrhoeal disease clusters and outbreaks (with PI Sarah J O'Brien)

2012-2016 £977,000 from BBSRC for Improving projections for the future of bluetongue and its vectors under scenarios of climate and environmental change (with PI Matthew Baylis)

2012-2016 $2,500,000 from National Science Foundation (USA) for Ecoepidemiology of leptospirosis in the urban slums of Brazil (with PI Albert Ko)

2013-2014 £167,000 from ESRC for Social assortativity and contagious processes in modern Britain (with PI Jonathan Read)

2013-2017. £4.7million from MRC for Health eResearch Centre (with PI Iain Buchan)

2013-2014. £1.0million from MRC for Farr Institute: e-health research infrastructure

2013-2014 £60,000 from Alder Hey NHS Trust, for Emergency Hospital Admissions Forecasting.

2014-2019 £150,000 from Stichting Dioraphte (Netherlands), for Community-based malaria control in the perimeter of Majete Wildlife Reserve, Malawi.

2014-2015. $41,479 from COR-NTD (USA) for Loa loa intensity modelling.

2015-2019. £747,259 from Cystic Fibrosis Trust, for Cystic Fibrosis Epidemiological Network

(with PI Diana Bilton).

2016-2021. $202,911 from NIH (USA) for Spatial Models of Intrahepatic Hepatitis C Virus Propagation in Humans

2016-2019. £311,707 from MNDA for Optimising quality of living throughout the course of Motor Neurone Disease (with PI Carolyn Young)

2017-2019. £506,985 from MRC for Health in a Changing Climate: the dynamic challenge of snakebite in South Asia (with PI David Lalloo)

2017-2021. £5,686,767 from NIHR for Global Health Research Unit on Improving Health in Slums (with PI Richard Lilford)

2017-2021. $447,364 from Bill and Melinda Gates Foundation for NTD Modelling Consortium: moving towards elimination.

2019-2020. $142,871 from COR-NTD (USA) for Loa loa geospatial and post-validation surveillance modelling

2020-2021. £826,352 Controlling COVID19 through enhanced population surveillance and intervention (Con-COV): a platform approach (PI Ronan Lyons).

2021-2021 £38,225 from UK Health Security Agency for Turing/RSS Health Data Laboratory

2021-2022 $200,000 (approx) from Task Force for Operational Research in Global Health for Efficient Post-elimination Surveillance Strategies for NTDs (with PI Emanuele Giorgi)

2021-2023 $182,111 from Task Force for Operational Research in Global HealthPredicting STH prevalence with minimal re-mapping

2021-2024 $404,004 from Bill and Melinda Gates Foundation for NTD Modelling Consortium: informing programme decision-making

Leisure Interests

Sport: I enjoy social badminton, especially mixed doubles with Mandy, Jono and Hannah

Music: I enjoy listening to most styles, but especially early music, jazz and folk music. I play folk and blues guitar, mostly at home when nobody is listening, and tenor recorder in an informal consort.

Cooking: my inspiration is Nigel Slater.

Classic cars: I enjoy watching historic motor racing, but modern formula one leaves me cold. My indulgence is my 1988 Porsche 924S.

Reading: my desert-island book is Primo Levi's *If This is a Man/The Truce*.

Referees

Prof. Sir David Cox FRS, Nuffield College, Oxford, UK. `david.cox@nuffield.ox.ac.uk`

Prof S.L. Zeger, Department of Biostatistics, Johns Hopkins University School of Public Health, Baltimore, USA. `szeger@jhu.edu`

Prof A Gatrell, Faculty of Health and Medicine, Lancaster University, UK. `a.gatrell@lancaster.ac.uk`