

CURRICULUM VITAE

Peter J. Diggle

Updated March 19, 2012

Born: 24.2.50, Lancashire, England.

Nationality: Australian and British

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, Lancaster University (0.5FTE)

Professor, Department of Epidemiology and Population Health, University of Liverpool (0.5FTE)

Adjunct Professor of Biostatistics, Johns Hopkins University School of Public Health (honorary)

Adjunct Senior Researcher, Columbia University International Research Institute for Climate and Society (honorary)

Previous posts

University of Newcastle-upon-Tyne

Lecturer in Statistics, 1974 to 1984.

Reader in Statistics, 1984.

CSIRO Division of Mathematics and Statistics

Senior Research Scientist, 1985 to 1986.

Principal Research Scientist, 1986 to 1987.

Chief Research Scientist and Chief of Division, 1987 to 1988.

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.

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. Awarded the Guy Medal in Silver, 1997. Associate Editor of Applied Statistics, 1998-2000.

Chair of Research Section Committee, 1998-2000.

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 Organiser of session "Interface of geographic information systems and statistical analysis tools" at 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.

American Statistical Association

Elected Fellow, 2001

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, 1st World Congress of Bernoulli Society, Tashkent, 1986. Invited Speaker, 46th ISI Session, Tokyo, 1987. Member of Council of the Bernoulli Society from September 1987. Member of Program 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

Committee of Professors of Statistics.

Member since 1988. Chair 2004-2006.

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, from 2012.

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 have taught on the UK's EPSRC-funded national Academy for PhD Training in Statistics since its inception in 2008.

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, non-parametric smoothing and statistical genetics.

My main substantive research interests are in environmental epidemiology, tropical disease epidemiology, real-time health surveillance, and statistical modelling for e-health applications.

Research student supervision

Newcastle upon Tyne

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

Lancaster

Ibrahim Al Wasel, Julia Kelsall, Helen Wilson, Sara Morris, Louise Harper, Jon Barry, Jan Currie, Paulo Ribeiro, Patrick Brown, Ting-Li Su, Ines Sousa, Irene Kaimi, Gerwyn Green, John Speakman, Tom Fanshawe, Alexandre Rodrigues, Michelle Stanton (PhD)
Ann-Marie Jones (MPhil)
Alex Oldroyd (MSc)
Lisha Deng, Lydiane Agier, Nicola Reeve, Irene Larbi, Kamarul Musa(current)

Lancaster visiting

Isabel Natario (Lisbon), Victoria Ibanez (Valencia), Angela D'Elia (Florence), Turid Follestadt (Oslo), Andrei Tscheschel (Freiberg), Ole Christensen (Aalborg), Soren Lophaven(Copenhagen), Marina Paez (Rio de Janeiro), Raquel Menezes (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 Tamaro (Bilbao), Monica Hernandez (Mexico City), Marcelo Da Cunha (Rio De Janeiro)

Liverpool

David Taylor-Robinson, Dan Wooton (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.

Papers in Journals (all refereed)

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 *Arabidopsis 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 in the retina 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 luteinising 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 seasonality 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.
95. RABBITT, P.M., DIGGLE, P.J., SMITH, D.M., HOLLAND, F. AND McINNES, L. (2001). Identifying and separating the effects of practice and cognitive ageing during a large longitudinal study of elderly community residents. *Neuropsychologia*, **39**, 532–43.
96. DIGGLE, P., MOYEED, R., ROWLINGSON, B. and THOMSON, M. (2002). Childhood Malaria in the Gambia : a Case-study in Model-based Geostatistics. *Applied Statistics*, **51**, 493–506.
97. DIGGLE, P.J. and RIBEIRO, P.J. (2002). Bayesian inference in Gaussian model-based geostatistics. *Geographical and Environmental Modelling*, **6**, 129–46.
98. HENDERSON, R., DIGGLE, P. and DOBSON, A. (2002). Identification and efficacy of longitudinal markers for survival. *Biostatistics*, **3**, 33–50.
99. JARNER, M.F., DIGGLE, P.J. and CHETWYND, A.G. (2002). Estimation of spatial variation in risk using matched case-control data. *Biometrical Journal* **44**, 936–45.
100. PENDLETON, N., PAYTON, A., VAN DEN BOOGERD, E., HOLLAND, F., DIGGLE, P., RABBITT, P.M.A., HORAN, M.A., WORTHINGTON, J. and OLLIER, W.E.R. (2002). Apolipoprotein E genotype does not predict decline in intelligence in healthy older adults. *Neuroscience Letters*, **324**, 74–6.
101. FEYEN, L., RIBEIRO Jr, P.J., De SMEDT, F. and DIGGLE, P.J. (2002) Bayesian methodology to stochastic capture zone determination: conditioning on transmissivity measurements. *Water Resources research*, **38**, 1–11

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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 (with Tony Gatrell, Robin Flowerdew, Peter Vincent).
- 1990-93, £63,964 from SERC, Stochastic Modelling and Inference for Collections of Short Time Series (with Granville Tunnicliffe-Wilson).
- 1991, £12,000 from SERC, for Advanced Students' Short Course : Time Series and Measurements (with Granville Tunnicliffe-Wilson).
- 1992-1994, £72,710 from ESRC, for Space-Time Statistical Models in GIS (with Tony Gatrell, Robin Flowerdew).
- 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 (with Richard Davies, Brian Francis, Joe Whittaker).
- 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 P. Young).

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

1997-2000, £102,570 from EPSRC, for Model-based Geostatistics (with S.Coles, J.Tawn).

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

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

1998-2000, £160,581 from ESRC, for Case-control Methodology in Spatial Epidemiology (with A. Chetwynd, P. Elliott, J. Wakefield).

1999-2002, £123,043 from EPSRC, for Quality Control for Continuous Sheet Production (with R Henderson).

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 P. Young).

2000-2002, £451,255 from Food Standards Agency, for Ascertainment and Enhancement of Gastrointestinal Infection, Surveillance and Statistics (AEGISS) (with P Hawtin, T Bryant).

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 N P French).

2002-2003, £30,000 from World Health Organisation, for Spatial Analysis of Loa loa 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, Brian Francis).

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

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

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, David Mann, Douglas Mitchell)

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

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

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

2010-2013 £484,968 from MRC, for Statistical Modelling for Real-time Spatial Surveillance and Forecasting (with Barry Rowlingson)

2011-2015 4,273,887 from MRC, for Sources, Seasonality, Transmission and Control: Campylobacter and Human Behaviour in a Changing Environment (with PI Sarah O'Brien, Malcolm Bennett, Ken Forbes, Rachel Griffith, Tom Humphrey, Paul Hunter, Iain Lake, Daniel Rigby)

Leisure Interests

Sport: I enjoy social badminton, and cycling with my children.

Music: I enjoy listening to most styles, but especially early music, jazz and folk music. I play folk 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.

Referees

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