The Open University

Statistics Department

1998 Report

1.   Membership

Professor D.J. Hand (Head of Department)
Professor J.C. Gower
Dr N. Adams
Dr C.P. Farrington (from August)
Dr G.E. Iossif
Dr M.C. Jones
Dr M.G. Kelly (from October)
Dr A.D. Lunn
Dr K.J. McConway
Dr R. Ngouenet (to March)
Dr P. Sebastiani (from October)
Dr P.C. Taylor (to May)
Dr S.K. Vines
Mrs J.E. Williams

Visitors

Dr M.J. Faddy (University of Queensland)
Professor C.E. Lunneborg (University of Washington)
Dr P.C. Taylor (University of Hertfordshire)

Full-time research students

Mr T.C. Benton
Mr M.G. Kelly (to September)
Miss M.N. Kanaan
Mr R.J. Till
Mr B.E.T.H. Twala
Mrs J. Warwick

Part-time research students

Mr G. Blunt
Ms J. Burrett
Mr S. Cresswell
Mr P.M. Fayers (to January)
Mr A. Garrett
Ms E.K. Kemsley (to May)
Dr M. King

Mr M. Lunt
Mr D.F. Signorini (to July)

Support staff

Ms E. Ostrowski, Departmental Secretary

2.   Introduction

This year was another very productive and successful one for the Department. We hold a grade 4 rating from the 1996 Research Assessment Exercise, and research activity continued strongly in 1998, particularly in the areas of statistics in finance, classification methods, smoothing and biplots. During 1998, Department members published 3 books and 48 papers, book chapters etc. In addition, our teaching continued to flourish, particularly with the first, successful presentation of our new third level course in linear modelling. This brought back to four the number of core statistics courses presented by the Department.

We were delighted to welcome Paddy Farrington (formerly of the Public Health Laboratory Service, London) and Paola Sebastiani (formerly of City University, London) to take up lectureships in the department. Paul Taylor joined the University of Hertfordshire but, happily, has retained a visiting position with us.

Information on the Department is available through our Web pages at http://Statistics.open.ac.uk/index.html

3.   Teaching

Presentation

The Department presented four courses (30 CATS points each), MDST242 *Statistics in Society*, M246 *Elements of Statistics*, M343 *Applications of Probability*, and M346 *Linear Statistical Modelling*. Altogether the Department's courses attracted a total of about 2,100 students.

1998 saw the first presentation of M346 *Linear Statistical Modelling*. This went with very little in the way of problems, and has been received very positively by students, associate lecturers and other readers alike. M346 takes an applied line following on from M246 *Elements of Statistics*, and involves the students in heavy use of *Genstat for Windows* on a home computer. As well as linear models *per se*, the new course covers generalized linear models and some aspects of experimental design. The course team have produced a book version of the course text which is going to be published commercially.

Each of the Faculty of Mathematics and Computing's first level courses, MU120 *Open Mathematics* and MST121 *Using Mathematics*, contains substantial amounts of statistical material (roughly one quarter of each) with which Gillian Iossif is heavily involved.

Both MST121 and M246 are also presented to students of the Singapore Institute of Management. Jane Williams, Staff Tutor in the Department, has been to Singapore to train and advise local tutors of these courses.

Production

The department began the task of planning and outlining a revitalised and more coherent pair of second level courses (MU247/M248 to replace MDST242/M246). Gillian Iossif is Course Team Chair.

Other

The preparatory work was performed for the introduction of an award of *Diploma in Statistics* in 1999. This undergraduate diploma will be awarded to students who successfully study M246, M343 and M346 (or their predecessors) plus one other course from a list of electives.

Kevin McConway also contributed to the presentation of U205 *Health and Disease* and D300 *Professional Judgement and Decision Making*.

4.   PhD's awarded

The following four PhD's were awarded:

Peter Fayers, *Causal Variables in Quality of Life Measurement* (supervisor: D.J. Hand)

Mark Kelly, *Tackling Change and Uncertainty in Credit Scoring* (supervisor: D.J. Hand)

Kate Kemsley, *Some Problems in Quantitative Mid-Infrared Spectroscopy* (supervisor: A.D. Lunn)

Dave Signorini, *Practical Aspects of Kernel Smoothing for Binary Regression and Density Estimation* (supervisor: M.C. Jones)

5.   Research interests

The Department is the home of two research groups, in *Statistics in Finance* (Hand, Adams, Kelly, McConway) and *Classification Methods* (Hand, Adams, Gower, Ngouenet, Taylor). In addition, Dr McConway is a member of the University's *Ecology and Conservation* research group.

Members of the Department are involved in a variety of research projects, including:

• _Statistics of infectious diseases (estimation of epidemic parameters and of vaccine efficacy; evaluation of vaccine safety; epidemic detection systems)_ (Farrington)

• _Interval-censored survival data_ (Farrington)

• _Goodness of fit of GLMs with sparse data_ (Farrington)

• _Applied multivariate analysis_ (Gower)

• _Multidimensional scaling, Procrustes methods_ (Gower)

• _Biplots_ (Gower, Hand, Ngouenet)

• _Measurement theory and metadata_ (Hand)

• _Assessing classification rules_ (Hand, Adams)

• _Credit risk scoring_ (Hand, Adams, Kelly, McConway)

• _Discrimination and classification_ (Hand, Adams, Taylor, Webb (DERA))

• _Distribution theory_ (Jones)

• _Local dependence_ (Jones, Koch (University of Newcastle, Australia))

• _Minimum distance estimation_ (Jones, Warwick, Basu (Indian Statistical Institute), Harris (University of Northern Arizona), Hjort (University of Oslo))

• _Semiparametric density and probability estimation_ (Jones, Faddy (University of Queensland), Hjort (University of Oslo))

• _Miscellaneous smoothing topics_ (Jones, Faddy (University of Queensland), Gijbels (Universite Catholique de Louvain), Hall (Australian National University), Lloyd (University of Hong Kong), Yao (University of Kent))

• _Bayesian methods in meta-analysis_ (Lunn)

• _Medical statistics, clinical trials (categorical data, repeated measures, generalised estimating equations, Bayesian methods)_ (Lunn)

• _Performance-based handicapping systems in sport_ (Lunn, Cresswell)

- *Analysis of spectroscopic data (discrimination, multivariate methods of density reduction)* (Lunn, Kemsley)

- *Bayesian statistics* (Lunn, McConway, Sebastiani, Vines)

- *Statistical methods in plant ecology and evolution* (McConway)

- *Comparative methods using phylogenies* (McConway, Silvertown (Biology, OU), Smith (University of Warwick))

- *The determinants of species richness in flowering plants* (McConway, Silvertown (Biology, OU), Chase (Royal Botanical Gardens, Kew))

- *Methods for comparing cladogenesis rates in phylogenies* (McConway, Silvertown (Biology, OU), Dodd (Biology, OU))

- *Ecological and genetic correlates of long-term population trends in plants* (McConway, Silvertown (Biology, OU), Miller (Rothamsted Experimental Station), Lupton (Rothamsted Experimental Station), Macnair (University of Exeter))

- *Reasoning under uncertainty* (Sebastiani)

- *Decision theoretic foundations of statistical methods* (Sebastiani)

- *Statistical methods in machine learning, artificial intelligence and robotics* (Sebastiani, Ramoni (KMI, OU))

- *Graphical modelling* (Sebastiani, Ramoni (KMI, OU))

- *Statistical experimental design* (Sebastiani, Wynn (University of Warwick))

- *Spatial statistics* (Taylor, Kanaan, Mugglestone (Rothamsted Experimental Station), Alexander (Rothamsted Experimental Station))

- *Bayesian analysis of case-control studies* (Vines)

- *Principal components analysis* (Vines)

- *Parameterisation of random effects models* (Vines, Gilks (MRC Biostatistics Unit))

6.   Publications

6.1   Books

Gierl, L., Cliff, A.D., Valleron, A.J., Farrington, C.P. and Bull, M. (eds) (1998) *GEOMED '97, Proceedings of the International Workshop on Geomedical Systems*, B.G. Teubner, Leipzig.

Hand, D.J. and Jacka, S.D. (eds) (1998) *Statistics in Finance*, Edward Arnold, London.

Kemsley, E.K. (1998) *Discriminant Analysis and Class Modelling of Spectroscopic Data*, Wiley, Chichester.

6.2   Publications in refereed academic journals

Basu, A., Harris, I.R., Hjort, N.L. and Jones, M.C. (1998) Robust and efficient estimation by minimising a density power divergence. *Biometrika*, 85, 549-59.

Bowman, A.W., Jones, M.C. and Gijbels, I. (1998) Testing monotonicity of regression. *Journal of Computational and Graphical Statistics*, 7, 489-500.

Brugha, R., Heptonstall, J., Farrington, C.P., Andren, S., Perry, K. and Parry, J. (1998) Risk of hepatitis A infection in sewerage workers. *Occupational and Environmental Medicine*, 55, 567-9.

Faddy, M.J. and Jones, M.C. (1998) Semiparametric smoothing for discrete data. *Biometrika*, 85, 131-8.

Fayers, P.M., Curran, D. and Machin, D. (1998) Incomplete quality of life data in randomised trials: missing items. *Statistics in Medicine*, 17, 679-96.

Gower, J.C. (1998) The role of constraints in determining optimal scores. *Statistics in Medicine*, 17, 2709-21.

Gower, J.C. and Zielman, B. (1998) Orthogonality and its approximation in the analysis of asymmetry. *Linear Algebra and its Applications*, 278, 183-93.

Hand, D.J. (1998) Breaking misconceptions—statistics and its relationship to mathematics (with discussion). *Journal of the Royal Statistical Society*, Series D, 47, 245-50, 284-6.

Hand, D.J. (1998) Strategy, methods and solving the right problem. *Computational Statistics*, 13, 5-14.

Hand, D.J. (1998) Data mining: statistics and more? *The American Statistician*, 52, 112-8.

Hand, D.J., Oliver, J.J. and Lunn, A.D. (1998) Discriminant analysis when the classes arise from a continuum. *Pattern Recognition*, 31, 641-50.

Hitchcock, S.E. (1997) Two queues with a single server. *Communications in Statistics—Stochastic Models*, 13, 95-104.

Jones, M.C. (1998) Constant local dependence. *Journal of Multivariate Analysis*, 64, 148-55.

Jones, M.C. (1998) On some kernel density estimation bandwidth selectors related to the double kernel method. *Sankhya*, Series A, 60, 249-64.

Jones, M.C., Samiuddin, M., al-Harbey, A.H. and Maatouk, T.A.H. (1998) The edge frequency polygon. *Biometrika*, 85, 235-9.

Jones, M.C. and Vines, S.K. (1998) Choosing the smoothing parameter for unordered multinomial data. *Test*, 7, 413-26.

Jones, M.C. and Yu, K. (1998) Local linear quantile regression. *Journal of the American Statistical Association*, 93, 228-37.

Kemsley, E.K. (1998) A genetic algorithm approach to the calculation of canonical variates. *Trends in Analytical Chemistry*, 17, 24-34.

Laurichesse, H.A.A., Mortimer, J., Evans, B.G. and Farrington, C.P. (1998) Pre-AIDS mortality in HIV infected individuals: surveillance data from England, Wales and Northern Ireland, 1982-96. *AIDS*, 12, 651-8.

Lunn, A.D. and Davies, S.J. (1998) A note on generating correlated binary variables. *Biometrika*, 85, 487-90.

Ramoni, M. and Sebastiani, P. (1998) Parameter estimation in Bayesian networks from incomplete databases. *Intelligent Data Analysis*, 2.

Sebastiani, P. and Settimi, R. (1998) First-order optimal design for nonlinear problems. *Journal of Statistical Planning and Inference*, 74, 177-92.

6.3   Refereed conference contributions and book chapters

Adams, N.M., Hand, D.J. and Li, H.G. (1998) A simulation study of indirect prognostic classification. In *COMPSTAT 1998, Proceedings in Computational Statistics*, eds R. Payne and P. Green, Physica-Verlag, 149-54.

Farrington, C.P. (1998) Communicable diseases. In *Encyclopedia of Biostatistics*, vol. 1, eds P. Armitage and T. Coulton, Wiley, 795-815.

Farrington, C.P. and Beale, A.D. (1998) The detection of outbreaks of infectious disease. In: *GEOMED '97, Proceedings of the International Workshop on Geomedical Systems*, eds L. Gierl, A.D. Cliff, A.J. Valleron, C.P. Farrington and M. Bull, B.G. Teubner, 97-117.

Gower, J.C. (1998) Classification, overview. In *Encyclopedia of Biostatistics*, vol. 1, eds P. Armitage and T. Coulton, Wiley, 656-67.

Gower, J.C. (1998) Principal coordinates analysis. In *Encyclopedia of Biostatistics*, vol. 5, eds P. Armitage and T. Coulton, Wiley, 3514-8.

Gower, J.C. (1998) Similarity, dissimilarity, and distance measure. In *Encyclopedia of Biostatistics*, vol. 5, eds P. Armitage and T. Coulton, Wiley, 4097-100.

Gower, J.C. and Harding, S.A. (1998) Prediction regions for categorical variables. In *Visualization of Categorical Variables*, eds J. Blasius and M.J. Greenacre, Academic Press, 405-19.

Gower, J.C. and Ngouenet, R.F. (1998) Some new types of biplot. In *Proceedings of the Fourth Sensometrics Meeting, Copenhagen*, ed P.B. Brockhoff, Royal Veterinary and Agricultural University, 60-3.

Gower, J.C. and Ross, G.J.S. (1998) Non-probabilistic classification. In *Advances in Data Science and Classification*, eds A. Rizzi, M. Vichi and H. Bock, Springer, 21-8.

Hand, D.J. (1998) The importance of statistics in the gathering and analysis of data. In *Statistics, Science, and Public Policy*, eds A.M. Herzberg and I. Krupka, Queen's University, Canada, 103-5.

Hand, D.J. (1998) Reject inference in credit operations. In *Credit Risk Modelling: Design and Application*, ed E.F. Mays, Glenlake Publishing.

Hand, D.J. (1998) Artificial intelligence. In *Encyclopedia of Biostatistics*, vol. 1, eds P. Armitage and T. Coulton, Wiley, 193-6.

Hand, D.J. (1998) Discriminant analysis. In *Encyclopedia of Biostatistics*, vol. 2, eds P. Armitage and T. Coulton, Wiley, 1168-79.

Hand, D.J. (1998) Measurement scale. In *Encyclopedia of Biostatistics*, vol. 3, eds P. Armitage and T. Coulton, Wiley, 2521-4.

Hand, D.J. (1998) Scientific method and statistics. In *Encyclopedia of Biostatistics*, vol. 5, eds P. Armitage and T. Coulton, Wiley, 3967-71.

Kelly, M.G., Hand, D.J. and Adams, N.M. (1998) Defining the goals to optimise data mining performance. In *Proceedings of the Fourth*

International Conference on Knowledge Discovery and Data Mining, eds R. Agrawal, P. Stolorz and G. Piatesky-Shapiro, AAAI Press, 234-8.

Lunn, A.D. (1998) An overview of statistical education at a distance. In *Proceedings of the Fifth International Conference on Teaching of Statistics*, eds L. Pereira-Mendoza, L.S. Kea, T.W. Kee and W.K. Wong, International Statistical Institute, 399-400.

Mertens, B.J.A. and Hand, D.J. (1997) Biased methods of classification in high dimensions: a comparative assessment. In *Classification and Knowledge Organization*, eds R. Klar and O. Opitz, Springer, 162-70.

Miller, E., Waight, P. and Farrington, C.P. (1998) Safety assessment post-licensure. In *Preclinical and Clinical Development of New Vaccines* (Developments in Biological Standardization, vol. 95), eds S. Plotkin, F. Brown and F. Horaud, Karger, 235-43.

Schiavo, R.A. and Hand, D.J. (1998) Neural networks, PAC learning, and error rate estimation. In *XXXIX Riunione Scientifica della Societa' Italiana di Statistica.*

Sebastiani, P. and Ramoni, M. (1998) Decision theoretic foundations of graphical model selection. In *Proceedings of the Fourteenth Conference on Uncertainty in Artificial Intelligence*, eds Morgan and Kaufmann, 464-71.

Sebastiani, P. and Ramoni, M. (1998) Induction of graphical models from incomplete samples. In *COMPSTAT 1998, Proceedings in Computational Statistics*, eds R. Payne and P. Green, Physica-Verlag, 449-54.

Sebastiani, P. and Wynn, H.P. (1998) Risk based optimal designs. In *Proceedings of the 1998 Conference on Model Oriented Data Analysis and Experimental Design*, eds A.C. Atkinson, L. Pronzato and H.P. Wynn, Physica-Verlag, 247-57.

6.4   Letters to the editor of refereed journals

Djuretic, T., Ramsay, M.E., Farrington, P.C., Fleming, D.M. and Brown, D. (1998) Risk factors for winter outbreak of acute diarrhoea in France. *British Medical Journal*, 317, 145.

Fayers, P.M., Groenvold, M., Hand, D.J. and Bjordal, K. (1998) Clinical impact versus factor analysis for quality of life questionnaire construction. *Journal of Clinical Epidemiology*, 51, 285-6.

7.   Seminars and conferences at the Open University

The Department runs an active seminar programme with invited external speakers. During the year we heard the following:

Professor S. Senn (University College London) *Is meta better or is pooling fooling?*

Professor S.W. Looney (University of Louisville) *How to use tests for univariate normality to assess multivariate normality*

Professor J. Fan (University of California Los Angeles) *Functional linear models for longitudinal data*

Mr S.J. Davies (CSIRO, Sydney) *Some experiences in the analysis of large and complex datasets*

Professor R.W. Payne and Dr S. Harding (IACR–Rothamsted) *STABLE: a visual environment for statistical analysis*

Dr F. Daly (Ninewells Hospital Dundee) *Hospital admissions, levels of reported crimes and other Scottish statistics*

Professor P.J. Green (University of Bristol) *Towards MCMC with guaranteed convergence for Bayesian statistics*

Professor K.V. Mardia (University of Leeds) *The art and science of Bayesian object recognition*

Dr N.I. Fisher (CSIRO, Sydney) *Measuring, monitoring and improving organisational performance*

The annual departmental statistics conference for 1998 ¾ held in honour of John Gower ¾ was actually held in January 1999 and will be reported in the next Annual Report (chief organisers: David Hand, Daniel Lunn, Niall Adams and Liz Ostrowski).

In January and December, the Department ran internal research afternoons. The speakers at the January session were John Gower, Paul Taylor, Cliff Lunneborg, Mona Kanaan and Daniel Lunn. In December, the main speakers were Paddy Farrington, Karen Vines and Paola Sebastiani.

8. Conference papers presented

N. Adams

OR40, the 40th Annual Conference of the Operational Research Society, Lancaster: *New methods for behavioural scoring and performance assessment* (Invited talk)

PCCSNA '98, the 1998 Joint Annual Meeting of the Classification Society of North America and the Psychometric Society, Urbana, Illinois, USA: *An improved method for comparing classifiers*

C.P. Farrington

Nineteenth meeting of the International Society for Clinical Biostatistics (ISCB), Dundee: *The distribution of time to extinction in subcritical branching processes: applications to outbreaks of infectious diseases*

Workshop on Critical Data and Statistical Uncertainties: the Statistics of Transmissible Spongiform Encephalopathies, Cambridge: *Trends in new variant CJD incidence: the first five years* (with N.J. Andrews and D. DeAngelis)

J.C. Gower

7th International Congress of Ecology, Florence, Italy*: The future of statistical ecology in the next millenium* (Invited talk)

Joint Meeting of the RSS Research and Medical Sections for Michael Healy's 75th Birthday, London: *Reminiscences of Michael Healy at Rothamsted* (Invited talk)

The Royal Statistical Society Annual Conference (RSS98), Glasgow: *Prediction by circular and normal projection with non-linear biplots* (Invited talk)

Fourth sensometrics meeting, Copenhagen, Denmark: *Some new types of biplot* (Invited talk)

Sixth Conference of the International Federation of Classification Societies, ICFS98, Rome, Italy: *Non-probabilistic classification* (Invited talk)

D.J. Hand

Equifax New Technology Forum Conference, Coventry: *Data mining: puff or potential?* (Keynote address)

Statistics, Science, and Public Policy, Herstmonceux Castle, East Sussex: *Measurement and the nature of science: the impact on the relationship between science and the public* (Invited talk)

Knowledge Extraction for Statistical Data (KESDA98), Luxembourg: *Data mining—reaching beyond statistics* (Invited talk)

Statisticians in the Pharmaceutical Industry (PSI98), Harrogate: *Data mining and statistics* (Invited talk)

European Fifth Framework Information Day, London: *Key issues in statistical research* (Invited talk)

M.C. Jones

The Royal Statistical Society Annual Conference (RSS98), Glasgow: *Skewing symmetric distributions*

M.N. Kanaan

21st Research Students' Conference in Probability and Statistics, Lancaster: *Investigating the relationship between a point process and a lattice process using spectral analysis*

M.G. Kelly

OR40, the 40th Annual Conference of the Operational Research Society, Lancaster: *Making the most of credit data* (Invited talk)

S.K. Vines

6th Valencia International Meeting on Bayesian Statistics, Valencia, Spain: *Bayesian analysis of unmatched case-control studies*

The Royal Statistical Society Annual Conference (RSS98), Glasgow: *Exposure distribution specification in an analysis of an unmatched case-control study*

J.E. Williams

International Congress of Mathematics Instruction (ICMI) Working Group Meeting on Teaching and Learning of Mathematics at University Level, Singapore: *Comparing students at a distance* (with A Toon)

9.   Other seminars and talks given

N. Adams

Liverpool John Moores University: *Recent work on classification systems in consumer credit*

J.C. Gower

Open University: *Geometry, algebra and data analysis* (Inaugural lecture)

Pompeu Fabra University, Barcelona, Spain: *Applications of the Leverrier-Faddeev algorithm*

D.J. Hand

University of Surrey: *Assessing classification rules*

University of Newcastle: *Statistical aspects of credit scoring*

University of Southampton: *Statistics and computing: the interface*

Eurostat, Luxembourg: *Research topics in statistics and machine learning*

McGill University, Montreal, Canada: *Predicting customer behaviour in retail banking*

Université du Québec à Montréal: *Measuring the performance of supervised classification rules*

British Telecom, Martlesham, Ipswich: *Data mining*

RSS Statistical Computing Section, London: *Data mining – statistics and more?*

University of Leuven, Belgium: *Data mining*

Statisticians in the Pharmaceutical Industry, London: *Measurement theory, medicine, and statistics*

M.C. Jones

University of Kent: *Two separate topics: semiparametric discrete smoothing and a local dependence function*

University of Lancaster: *Two separate topics: semiparametric discrete smoothing and a local dependence function*

University of Bristol: *Two robustness topics: minimum distance estimation and a skew t distribution*

University of New South Wales, Sydney, Australia: *Two robustness topics: minimum distance estimation and a skew t distribution*

Australian National University, Canberra, Australia: *Two separate topics: local dependence and a skew t distribution*

K.J. McConway

University of Warwick: *What (if anything) to do with phylogenies*

R.F. Ngouenet

Unilever, Colworth, Bedford: *The development of software for producing biplots* (Two talks)

P. Sebastiani

University of Nottingham: *Bayesian knowledge discovery*

10.   Editorships

C.P. Farrington

- Editorial board member: *Statistics in Medicine*

- Editorial board member: *Epidemiology and Infection*

J.C. Gower

- Associate editor: *Psychometrika*

- Associate editor: *Journal of Classification*

- Consultant editor: *The Mathematical Scientist*

- Statistical editor: *Journal of Agricultural Science*

D.J. Hand

- Editor-in-Chief (Founding Editor): *Statistics and Computing*

- Joint Editor: *Royal Statistical Society Book Series*

- Editorial board member: *Journal of Applied Statistics*

- Editorial board member: *Statistical Methods in Medical Research*

- Editorial board member: *Data Mining and Knowledge Discovery*

- Editorial board member: *Studies in Classification, Data Analysis, and Knowledge Acquisition* (book series, Springer-Verlag)

- Editorial advisory committee member: *Research in Official Statistics*

- Editorial board member: *Evaluation of Intelligent Systems* (website)

M.C. Jones

- Joint Editor: *Journal of the Royal Statistical Society*, Series B

- Associate editor: *Statistics and Computing*

C.E. Lunneborg

- Software reviews editor: *Statistics and Computing*

P. Sebastiani

- Editorial board member: *Evaluation of Intelligent Systems* (website)

11.   Grants awarded

D.J. Hand

- Novel statistical problems in retail banking. £100,653 from Abbey National.

- Predictive behavioural models in retail banking and credit scoring. £47,000 from EPSRC.

- Empirical versus theoretical models in credit scoring. £28,540 EPSRC Case studentship with additional funding from Barclaycard. Also, funding from Barclaycard separate from studentship, £11,610.

- A meta-analysis of supervised classification procedures. Research studentship funded by Open University.

P. Sebastiani

- Travel grant to visit University of Massachusetts. £750 from Royal Society.

P. Sebastiani and D.J. Hand

- (with M. Ramoni (KMI, OU)) Project BAKE (Bayesian Knowledge Extraction). 100,000 ECU from ESPRIT programme of European Union.

12.   Other activities

C.P. Farrington

- is a member of the CJD Epidemiology subcommittee of SEAC (Spongiform Encephalopathy Advisory Committee).

- is an honorary scientist at the Communicable Disease Surveillance Centre, London.

- is an honorary lecturer at the London School of Hygiene and Tropical Medicine.

J.C. Gower

- received a Distinguished Statistical Ecologist Award from the International Association for Ecology.

- is Honorary Secretary of the Sir Ronald Aylmer Fisher Memorial Committee of Great Britain.

- is a Foreign Member of the Advisory Board of IOPS (Interuniversitaire Onderzoekschool voor Psychometrie en Sociometrie).

- was an invited discussant of J. Meulman's paper at COMPSTAT '98.

D.J. Hand

- is external examiner for the BSc and MSc in Statistics at University College London, and for the MSc in Statistics at the University of Kent.

- was proposer of the vote of thanks to J.K. Lindsey's R.S.S. read paper.

- was a member of the programme committees and/or advisory boards for the following conferences: 2nd Pacific-Asia Conference on KDD (PAKDD98), Melbourne, Australia; 4th International Conference on KDD (KDD98), New York, USA; 1998 Seminar on New Techniques and Technologies for Statistics, Sorrento, Italy; 15th International Conference on Machine Learning, Madison, WI, USA; Principles of Knowledge Discovery in Databases, Nantes, France; SPIE Conference on Data Mining and Knowledge Discovery, Orlando, FL, USA; Intelligent Data Analysis-99, Amsterdam, Holland; Royal Statistical Society Conference on Risk (RSS99), Warwick; 7th International Workshop on Artificial Intelligence and Statistics (Uncertainty 99), Fort Lauderdale, FL, USA; Principles and Practice of Knowledge Discovery in Databases (PKDD99), Prague, Czech Republic. Also, organised a session for the ISI Conference in Helsinki.

- continued on the Statistics Expert Advisory Panel of Zeneca Pharmaceuticals and the Advisory Board of the Edinburgh University Credit Research Centre.

M.C. Jones

- spent six weeks study leave at the Australian National University.

- examined PhDs for the University of Plymouth and the University of Queensland, Brisbane, Australia.

- is a member of the Editorial Policy Board, the Programme Committee and the Research Section Committee of the Royal Statistical Society.

A.D. Lunn

- ran a two-day course on Advanced Regression Methods in Clinical Trials and a one-day research workshop on Bayesian Methods in the Analysis of Clinical Trials Data, both at the University of Sydney, Australia.

- was the main invited speaker at the conference dinner at the International Conference on Teaching Statistics in Singapore. Also, organised, chaired and spoke at the session on Distance Teaching.

K.J. McConway

- spent five months study leave at the University of Warwick.

P.C. Taylor

- is a member of Statistical Computing Section Committee and Programme Committee of the Royal Statistical Society.

S.K. Vines

- continues to act as advisor on statistical matters to all research students associated with the Open University, and to give appropriate courses and talks.

- is a member of the General Applications Section Committee of the Royal Statistical Society.

J.E. Williams

- in October, started a period as Faculty of Mathematics and Computing Sub-Dean (Courses in Presentation).