Preface

The Medical Statistics Group (MSG) is located within the Health Services Research (HSR) Section of the School of Health and Related Research (ScHARR) at the University of Sheffield and works closely with the Medical School, the National Institute for Health Research (NIHR) Research Design Service for Yorkshire and Humber (previously the Trent Research Development and Support Unit (RDSU) and the Clinical Trials Research Unit (CTRU)).

The MSG aims to:

1. develop new statistical methodology relevant to medical and health services research;
2. help ScHARR achieve a high rating at the next Research Assessment Exercise (and its successor the Research Excellence Framework (REF)) by providing high quality advice on research proposals and using modern statistical methods in the analysis and display of data;
3. provide direct input to medical and health services research projects through collaborative research and consulting;
4. develop and deliver statistics modules for undergraduate and postgraduate degree schemes within ScHARR; the Faculty of Medicine, Dentistry and Health and the University of Sheffield;
5. train medical and health services professionals in the theory and application of appropriate statistical methods in their own research;
6. train the next generation of medical statisticians (by introducing an MSc in Medical Statistics).

The Group operates in three main areas of research, teaching and consultancy.
Highlights of 2008

All five core academic members of the group were submitted to the Health Services Research Unit of Assessment (UoA 7), for the 2008 Research Assessment Exercise, and contributed to the excellent ScHARR RAE result.

We have a strong list of peer reviewed publications with 23 joint-authored papers in 2008 and a further 6 non-refereed papers, letters or books. We also have a strong list of successful grant collaborations worth approximately £13.4 million.

In 2008 the Medical Statistics Group worked on 39 new grant applications, to various funders, from outline stage to full application. Of those that made it to full application a total of £43 million was applied for. This resulted in 11 new research grants with a value of approximately £9 million.

The MSc in Medical Statistics has been approved and will run for the first time in October 2009.

‘How to display data’ by Jenny Freeman, Stephen Walters and Mike Campbell was one of Wiley/Blackwell’s best sellers for 2008, having sold more than 3,000 copies in its first 9 months.

Jenny Freeman was awarded a second Senate award for Excellence in Teaching and Learning and is only one of two individuals to have received this prestigious award twice.

Mike Campbell gave a course on cluster randomised trials on behalf of the International Society for Clinical Biostatistics with Rumana Omar from University College London, in Isfahan, Iran. He served on Panel C12 (Professions Allied to Medicine) in the recent RAE.

Jenny has been appointed to Chair of the Royal Statistical Society Local Group. Jenny organised a well-attended study day on ‘Futility analyses in clinical trials’ at the Royal Statistical Society in London in November. In collaboration with Nottingham Trent University and the University of Leicester, she again ran the Statistic Poster Challenge, a successful event in which over 500 children across the region (http://www.schoolspoc.org.uk/) participated.

And finally, we look forward to two further statisticians, Dawn Teare and Richard Jacques joining us in January 2009. Dawn is coming from the Medical School where she worked with Chris Cannings and Richard will be working on the UniPath project with Richard Eastell from the Medical School. Steven Julious and Jenny Freeman will be on study leave for the second semester in 2009. Georgina Jones is on study/maternity leave for all of 2009.

MJC January 2009
The Medical Statistics Group

Mike Bradburn (MB) Statistician
Mike Campbell (MJC) Professor of Medical Statistics
Jenny Freeman (JF) Senior Lecturer in Medical Statistics
Georgina Jones (GL) Senior Lecturer in Social Sciences
Steven Julious (SAJ) Senior Lecturer in Medical Statistics
Stephen Walters (SJW) Reader in Medical Statistics

Members of ScHARR with an Interest in Statistics

Jon Nichol (JPN) Professor of HSR MCRU
Alicia O’Cathain (AOC) Senior Research Fellow MCRU
John Stevens Director, CHEBS HEDS
Tracey Young (TY) Lecturer HEDS
Mark Strong (MS) Clinical Lecturer Public Health
Patrick Fitzgerald (PF) Research Fellow HEDS
Dave Saxon (DS) Research Associate Mental Health
Teaching 2008 by the Medical Statistics Group

Posts School Examinations Office (JVF), Course Director MPH(HSR) SJW)

Undergraduate

MBChB (MJC, JF*, SAJ, SJW, GLJ)

HAR202 BMedSci (ScHARR) (JF*, SAJ, MJC)

HAR6250 BMedSci (ScHARR) (MB)

Undergraduate/Postgraduate

Statistics for the Medical and Health Sciences (HAR6036) (SAJ*, SJW, JF, MB)

Postgraduate

An Introduction to Statistics and Critical Appraisal (HAR6035) (MJC, JF, SJW*, SAJ, TY)

An Introduction to Research Methods (HAR6030) (MJC, JVF*)

MSc Genetic Epidemiology, Epidemiology II (MJC*)

MPH (SJW,MJC)

MSc (HSR) (MJC)

MSc Medical and Health Sciences (JF)

MSc Health and Social Care (distance learning) (including RTP and MSc in Psychological Research Students (GLJ, MB)

Specialist Registrars short course (JF)

MSc Renal Medicine (JF)

MRCPsych Part II Social Science (GLJ)

Trent RDSU Short courses (JF, SJW, TY)

Trent RDSU Statistics Clinics (MJC, JF, SAJ, SJW, TY)

* Course Coordinator
**PhD graduates**

Spencer Boyle (Supervised by Stephen Walters and Georgina Jones) ‘minor corrections’.

Adriana Ismail (supervised by Mike Campbell and Georgina Jones) ‘major corrections.’

**MD**

Tom Locker, a part-time university staff candidate, (supervised by Sue Mason (HSR) and Stephen Walters).

**Ongoing PhD Students**

Elton Chanakira (full-time): supervised by Liddy Goyder (Public Health), JVF & Alicia O’Cathain

Nicola Clibbens (part-time university staff candidate): supervised by Wendy Baird (Public Health) and SJW

Khadija Rerhou (part-time university staff candidate): supervised by MJC

Chirk Jeng Ng (full time): supervised by Nigel Mathers and MJC

Olivier Wong (external) supervised by Nigel Mathers, Mike Campbell and Jenny Freeman

Feng Lui (part-time): supervised by Steven Julious and Stephen Walters

Joseph Akanuwe: supervised by Liddy Goyder and Steven Julious

Sally Hartnell: supervised by Liddy Goyder and Steven Julious

Mamdooh Alonazi (full-time): supervised by Allan Hutchinson and Jenny Freeman

Victoria Brennan FT (Supervised by Jones GL, Radley SC, Dixon S)

Kay Bowen FT (Supervised by Jones GL, Anumba DOC)

Rosalind Haddrill PT (Supervised by Jones GL, Anumba DOC Mitchell C)

**MD**

Li Wei Water (Supervised by Jones GL, Li TC)
**MPH Students 2008**

Saadia Chaudhry. Do partners of mothers at risk of PND have different QoL outcomes than partners of mothers without PND (SJW)

Jennifer Lai. An investigation of childhood obesity in Sheffield and Derbyshire (SAJ)

Ugoji Ngozi. Environmental determinants of peak levels of asthma in children: an association between asthma hospital admissions in children in Doncaster and outdoor pollutants (SAJ)

Kevin Anu. Analysis of environmental triggers of peak in children’s asthma hospital admissions in Aberdeen. (SAJ)

**BMedSci Students 2008**

Holly Ingham (MJC)

Frances Waller (JVF)

**Intercalated BMedSci Students**

Helen Bowes (GLJ, and Bill Ledger)

Sarah Kingdom (Supervised by GLJ, Derrick Rosario D)

**External examining**

MJC

PhD University of Leeds, PhD University of Cardiff, PhD LSHTM

External adviser: MSc Medical Statistics. University of Hong Kong

JF

MPhil University of Glasgow, MSc Statistical Epidemiology University of Leeds, Postgraduate Medical Statistics (various courses) University of Central Lancashire

**External Courses**

Cluster Randomised Trials : afternoon course MSc Med Stats (Leicester) (MJC)

‘Cluster Randomised Trials’. One day Erasmus Winter Course, Rotterdam (MJC)
‘Cluster Randomised Trials’. Two day ISCB Course, Isfahan, Iran (MJC)

‘Using problem-solving to teach statistics’ Half-day workshop at Royal Statistical Society Conference (Nottingham) (JF)

**Medical Statistics Group peer-reviewed publications 2008**


Robinson CN, van Aswegen A, Julious SA, Nunan TO, Tindale WB, Thomson WH, Tout DA, Underwood SR The relationship between administered


Other publications (non refereed)

Books


Book Chapters


Reviews


**Invited Conference Talks and seminars**

**MJC**

‘Complex interventions, cluster trials, modelling and complexity’ Aberdeen conference on complex interventions March

‘Sample size calculations: Past, present and future’ Statisticians in the Pharmaceutical Industry one day meeting on sample size calculations, London, April

‘30 years of Medical Statistics what has changed and what hasn’t’ RSS Local Group meeting Edinburgh May

‘A statistician on a NICE Appraisals Committee: a personal view’ Sheffield Department of Probability and Statistics December.

**JVF**

‘Conducting research into Statistical Education’. Annual UK meeting of Teachers of Medical Statistics. Bristol

‘How (not) to Display Data’. RSS Local Group meeting Sheffield July

‘Innovations in curriculum design: involving subject specialists when teaching statistics to non-statistics students’. University of Lancaster. June

**SAJ**

Julious SA.  Analysis of Safety Data.  Plenary talk at the PSI Conference, Brussels, .

Julious SA.  Sample size calculations with multiple “and” endpoints.  PSI Scientific Meeting on Sample Sizes.  London,

**SJW**


**GLJ**

‘Quality of life in endometriosis’ Endometriosis UK conference (Sheffield, January )
Contributed talks and posters

Talks

Society for Social Medicine Southampton Sept

‘Relative Risks, Odds Ratios and Cluster Trials’ MJC

The impact of Government-set time targets on patient care and outcomes: a retrospective analysis of routine data. JVF with, S Mason, S Croft, C Yap, S Cross


Issues with indirect comparisons in clinical trials particularly with respect to non-inferiority trials. (SAJ with Wang SJ)

Annual Conference of Royal Statistical Society. Nottingham UK; September,

Models for analysing data from individually randomised trials in primary care with clustering effects due to health professional variation (SJW)

29th Annual Conference of the International Society for Clinical Biostatistics (ISCB). Copenhagen, Denmark; August,

Models for analysing data from individually randomised trials with clustering by health professional. (SJW)

International Conference of Midwifery. Glasgow June

J Freeman, J Munro, P Dowling. The impact of continuity of maternity care on outcomes of labour: an evaluation of the effects of caseload midwifery.


Posters


**Internal Positions**

Mike Campbell. Head of Health Services Research Section; University Court.

Steven Julious. Chair of the CTRU and University Senate.

Stephen Walters. Course Director MPH (Health Services Research); the University Senate; Staff Promotion Panel (for Grades 1 to 6); Appeals Committee of Senate and Discipline Committee.

Jenny Freeman. University Court, Faculty Student Review committee, Maths and Statistics Help centre (MASH) steering committee.

**External Positions**

Mike Campbell is a member of Appraisal Committee C for the National Institute for Health and Clinical Excellence. He completed his terms as a member of Panel C12 (Professions Allied to Medicine) for the Research Assessment Exercise 2008. He was a member of the National Institute for Health Research (NIHR) panel assessing grants for the regional Research Design Services, He continues on the Education Committee of the International Society for Clinical Biostatistics (ISCB). Mike is a member of Data Monitoring and Ethics Committees for the FACS trial (University of Nottingham). He is on the TSG for VULCAN (Anti-microbial treatment for venous ulcers) University of Sheffield.

Georgina Jones continues to be on the Executive Board for the national charity PCOS UK. She is on the Editorial Board for the journal of Health and Quality of Life Outcomes. She is an expert member of the South Sheffield Ethics Committee.

Stephen Walters is a member of and Secretary to Royal Statistical Society Medical Section Committee. He is also a judge for Royal Statistical Society Manchester Student Project Prize and a member of the conference organising committee for RSS 2009. In November 2008 Stephen joined the Public Health Interventions Advisory Committee (PHIAC) of the National Institute for Health and Clinical Excellence. He is also a member of the Editorial Board for the journal of Health and Quality of Life Outcomes and a member of the International Advisory Board for the journal of
Quality of Life Research. Stephen is an independent statistician member on four trial data and safety monitoring committees: Control of Hypertension and Hypotension Immediately Post Stroke (CHHIPS) study; Continue Or Stop post-Stroke Antihypertensives Collaborative Study (COSSACS) Data and Safety Monitoring Committee a randomised controlled trial of excisional surgery versus imiquimod 5% cream for nodular and superficial basal cell carcinoma (SINS) , Early Labour Support and Assessment (ELSA) Trial Steering committee a multi–centre RCT, funded by the NHS Service Delivery & Organisation of Care Programme. He is also a member of the Scientific Review Panel for Sheffield Health & Social Research Consortium.

Steven Julious is a member of the Advisory Board for Pharmaceutical Statistics and was the chair of the Drug Information Association (DIA) Statistics Meeting in 2008. Statistical advisor for NICE for companies seeking advice on their clinical programs from NICE

Jenny Freeman is a member of the Royal Statistical Society Medical Statistics committee and is the Medical Statistics examiner for the Royal Statistical Society.

Refereeing

Both Mike Campbell and Stephen Walters are reviewers for the BMJ, whilst Jenny Freeman is a statistical referee for the BJGP, the Journal of Health and Social Care and the Statistics Education Research Journal. Stephen has acted as a referee for the following: Quality of Life Research; Statistics in Medicine; Pharmaceutical Statistics; Health and Quality of Life Outcomes; International Journal of Surgery; Medical Research Council (MRC) Clinician Scientist Fellowship Scheme and the NHS R & D Health Technology Assessment (HTA) Programme; NIHR Programme Grants Scheme. GLJ is a reviewer for the academic journals, Family Practice, British Journal of Obstetrics & Gynaecology, European Journal of Obstetrics & Gynecology, Journal of Clinical Epidemiology & Public Health, Health & Quality of Life Outcomes, Quality of Life Research, International Journal of Clinical Practice and Social Science & Medicine. Steven Julious is a reviewer for many journals including Pharmaceutical Statistics, Statistics in Medicine and Statistical Methods in Medical Research and is a reviewer for the HTA, MRC and the RfPB programs.

Clinical Trials Research Unit

The Medical Statistic Group plays a key role in the success of the CTRU enabling it to grow from just one person (Steven Julious) to sixteen today. Mike Bradburn is whole time in the CTRU and Steven Julious is 20%. However the whole group contributes to the CTRU: writing grants; sitting on steering committees, providing advice.

One of many highlights this year is the rolling out of the Randomisation System for the CTRU which was developed by Steven and Mike. Previously SchARR has had to pay up to £30,000 for a randomisation for a trial but now we have the facility in house.
Research Awards and Grants (both new and ongoing)

In 2008 the Medical Statistics Group worked on 39 new grant applications, to various funders, from outline stage to full application. Of those that made it to full application a total of £43 million was applied for. This resulted in 11 new research grants with a value of approximately £9 million. The successful and ongoing grants are given below.

New


UniPath M Campbell (PI), R Eastell. Unipath. Statistician to analyse data on osteoporosis. £153,361.


NHS NIHR Health Technology Assessment Programme. Infrastructure support for Clinical Trials Research Unit. Cooper C (PI) and Julious S. £600,000 (for 3 years to be reviewed and annually re-awarded depending on performance targets for the Clinical Trials Research Unit), 2008.

NHS NIHR Yorkshire and Humber Research Design Services (YHRDS) £5,000,000 Steven Walters, Co-applicant, 60 Months 2008-2013, Funding body: NHS National Institute for Health Research Principal Investigator: Professor R. Akehurst.

NHS NIHR Research for Patient Benefit (RfPB) programme Extension of mammographic breast screening to the over 70s: Assessment of efficacy, practicality and patient preferences £228,299 Stepem Walters 2007-2010 Principal Investigator: Dr Lynda Wyld.

NHS NIHR HTA Clinical Trials A randomised controlled trial and cost-effectiveness evaluation of "booster" interventions to sustain increases in physical activity in middle-aged adults in deprived urban neighbourhoods Stephen Walters £1,200,000 Co-applicant 48 Months 2008-2012 Principal Investigator: Dr Elizabeth Goyder.
NHS NIHR Research for Patient Benefit (RfPB) programme The long term effectiveness of 40% salicylic acid plasters on corns an RCT £250,000 Stephen Walters Co-applicant, 2008-2011 Principal Investigator: Professor Wesley Vernon.


MS Society JV Freeman. Computerised cognitive behavioural therapy for treatment of depression in people with MS: pre-clinical trial exploratory study (PI Cindy Cooper). Total £213k.


Diabetes UK JV Freeman. Kids In Control OF Food: A multi-centre, cluster randomised controlled trial comparing structured education (the KICK-OFF course) with standard care in 11-16 year olds with Type 1 Diabetes (T1DM) on intensive insulin therapy. (PI: K Price) £1,427,000.


SDTH GL Jones Various Grants Small Grant Scheme £13,375.

Ongoing

MJ Campbell 3Mg A trial of nebulised versus injected magnesium for acute asthma attacks (3Mg) (PI S Goodacre) Total £1,110,333 3 yrs Funding Body NHS HTA.

MJ Campbell Improving management of Type 1 diabetes in the UK: the DAFNE programme as a research test-bed (PI S. Heller) Total £1,983,000 over 3 years Funding body NIHR Programme Grant.

MJ Campbell The development and evaluation of the effectiveness of a patient decision aid (PtDA) to improve decision quality and health outcome in type 2 diabetic patients making treatment choices (PI N Mathers), Total £250,000 over 2 year Funding Body HTA Research for Patient Benefit.

JV Freeman Breast Cancer Aftercare: Preparing patients for discharge from routine hospital follow up (PI Joanne Thompson). Total £86k. Funding body: Weston Park Hospital Cancer Appeal.

SJ Walters A randomised 2x2 trial of community versus hospital rehabilitation followed by telephone or conventional follow up; impact on quality of life, exercise capacity and use of healthcare resources. £400,000. 48 months 2002-2006 Funding body: NHS R & D HTA PI: Dr R. Lawson.

MJ Campbell Does self monitoring of blood glucose as opposed to urinalysis provide additional benefit to newly diagnosed individuals with Type 2 diabetes receiving structured education? 2006-7. Funding Body: Diabetes UK £12,750 PI Simon Heller.

GL Jones (PI). Treatment for endometrial & vulval cancer: Measuring outcome from the patients’ perspective. 27 months Feb 2007 – May 2009. Funding body Weston Park Cancer Hospital, £45,072.

GL Jones (PI) A pilot study to develop a new chronic pelvic pain questionnaire Pfizer. £10,000. 24 months.

GL Jones (PI) Understanding why women present late for antenatal booking: a qualitative analysis Sheffield Health and Social Care Research Consortium £36,484.