

Curriculum Vitae Professor Sylvia Richardson PhD

Personal Details

Full name Professor Sylvia Richardson
Nationality French
Address MRC Biostatistics Unit, Institute of Public Health, University Forvie Site, Robinson Way, Cambridge, CB2 0SR
Email sylvia.richardson@mrc-bsu.cam.ac.uk
Web <http://www.mrc-bsu.cam.ac.uk/People/SRichardson.html>

Current Position

June 2012 Appointed to a Research Chair in Biostatistics, University of Cambridge
April 2012 Director, MRC Biostatistics Unit, Cambridge

Professional Experience

1974 - 1977 Teaching assistant, Mathematics Department, University of Nottingham (UK)
1977 - 1979 Lecturer, Statistics Department, University of Warwick (UK)
1979 - 1981 Research assistant, INSERM Unité 170 (FR)
1981 - 1987 Maître de Conférences, Université René Descartes (FR)
1987 - 1992 Chargée de Recherches, INSERM, U.170 (FR)
1992 - 2000 Directeur de Recherches, INSERM, U.170 (FR) - Head of Biostatistics group.
Jan 2000 Promoted to Directeur de Recherches, 1st Class – (en détachement)
2000- 2012 Chair of Biostatistics, Imperial College London
2012- Present Chair of Biostatistics, University of Cambridge

Educational Qualifications

1978 PhD (Nottingham University) "Ergodic properties of stopping time transformations"
1989 Doctorat d'Etat Es Sciences Mathematiques (Université de Paris Sud – Orsay) "Processus spatialement dépendants: convergence vers la normalité, tests d'association et applications".

Honours and Awards

1998 Elected to the International Statistics Institute
2009 Awarded the Royal Statistical Society Guy medal in Silver
2009-2014 Awarded a Royal Society Wolfson Research Merit award
2011 IMS Medallion Lecturer

2014	Elected Fellow of the International Society for Bayesian Analysis
2015	Elected Fellow of the Institute of Mathematical Statistics
2016	Elected Fellow of the Academy of Medical Sciences
2016	Suffrage Science Award – Mathematics
2017	Doctor Philosophiae Honoris Causa from the University of Oslo

Recent Grants

- PI Biostatistics Unit Quinquennial Review Award (April 2013 – March 2018) £13.7 M
- Co-I Medical Research Council grant “A systems based approach to integrating genetic and longitudinal omics data to support diagnosis and prediction of common chronic disease” (Spector PI) £159,300. 2014-2019
- PI Medical Research Council grant “Bayesian Discovery of Regression Structures (BDRS): a tool kit for genetic epidemiology and integrative genomics analyses” £670,000. 2011-2014
- Co-I Medical Research Council grant “Tools for characterising multi-pollutant patterns of exposure” (Molitor PI, Hansell, Richardson) £493,000. 2010-13
- PI INSERM/INCA, Modified lung cancer risk by multiple exposures at work and environmental risk factors combined, £123,261. 2009-12

Previous Key Grants

- Principal Investigator (PI) on a joint EPSRC-BBSRC grant £460,184. “*Flexible clustering of gene expression data*”, in collaboration with Prof T Aitman (CSC, Hammersmith) and Prof P.J. Green FRS (Mathematics department, Bristol University) (2003-2007)
- Co-PI Wellcome Trust “*Biological Atlas of Insulin Resistance*” (£67,270). PI for Statistical Analysis Work Package, (2004)
- Co-PI ESRC Research Node (PI Prof N Best) “*Bayesian methods for combining multiple individual and aggregate data sources in Observational studies (BIAS)*” (£650,514) (2005-2008).
- Co-PI ESRC Research Node (PI Prof N Best) “*Bayesian methods for integrating bias modeling and analysis of multiple data sources in Observational studies (BIAS II)*” (£1.2M). (2008-2011).
- PI Medical Research Council grant £300,000 “Strategy for analysing epidemiological data involving genetic, endogenous, environmental factors and their interactions”. (2007-2010)
- PI UK National Research Council (BBSRC) grant £504,458 “Bayesian methods for modelling and integrating metabolic data” (2008- 2011)
- Co-Investigator in the UK National Research Council (BBSRC) Systems Biology Centre at Imperial College.
- Co-PI in the MRC Centre for Environment and Health at Imperial College (2009-2012).

Postdoctoral Associates:

Laurent Leblond (1995-2000), Shaun Seaman (1999-2001), James Bennett (2001-2002), Alex Lewin (2002-2008), Anne Mette Hein (2003-2006), Natalia Bochkina (2003—2006), Leonardo Bottolo (2005-2008), Chris Jackson (2005-2007), Virgilio Gomez (2005 -2008), Marta Blangiardo (2005-2009), Michael Papatomas (2007–2009), Sara Geneletti (2005- 2009), Jassy Molitor (2006-2010), Lawrence McCandless (2007-2008), Philip Li (2008-2012), Alexina Mason (2009-2012), Georgios Papageorgiou (2010 – 2013), Silvia Liverani (2011 – 2014), Habib Saadi (2012 – 2014), Paul Newcombe (2012- 2017), Catalina Vallejos (2014 - 2016), Gwen Leday (2014-present), Paul Kirk (2015-present).

Research Students

Currently supervising 4 PhD students.

Completed PhDs: Annie Mollie (1990), JF Viel (1992), Laurence Watier (1993), Cecile Chouquet (1998), Isabelle Deltour (1999), Valerie Viallefont (2000), Angela Crook (2004), Andrew Brown (2008), Arturo Gonzales (2008), Manuela Zucknick (2009), Alexina Mason (2009), Oliver Ratmann (2010), Ernest Turro (2010), Cedric Ginestet (2011), Juan Gonzales (2013) , James Peters (2016)

Supervised 15 Master thesis students in France (1981 - 1999), 2 Master thesis students at Imperial.

Advisory Positions

Member of PSMB (Population and Systems Medicine Board) (2015-2017)
Chair of the Institute of Mathematical Statistics Committee on Special Lectures (2013-2014)
Member of the Research Committee of the Health Effects Institute, Boston, US (2005 - 2013)
Conseil Scientifique de l'ANSES (Agence Française de Sécurité sanitaire de l'alimentation, l'environnement et du travail) (2010 - 2018)
Member of INSERM Research Evaluation Committee CSS 3 Sciences and techniques applied to medicine and public health) (2008 – 2012)
Member of the International Advisory Board of the programme “Statistics for Innovation, SFI”, University of Oslo (2009-2014)
Member of the Scientific Steering Committee of the Isaac Newton Institute, Cambridge (2012-2016).
Nominated to the National Research Assessment Exercise Panel for Statistics (2006 – 2008)
Conseil Scientifique de L'AFSSET” (Agence Française de Sécurité sanitaire de l'environnement et du travail) (2006 - 2010)
Honorary Secretary and Theme Director for Publication at the Royal Statistical Society and Member of the Executive council (2003-2006)
Chair of the Publication Review working party of the Royal Statistical Society (2001-2002)

Member of Council of the Royal Statistical Society (1998- 2002)
Member of the Research Section of the Royal Statistical Society (1995-1998)
Vice-chairman of European Science Foundation (ESF) programme "Highly Structured Stochastic Systems (HSSS)" (1997 - 2000). Scientific secretary to the ESF HSSS Network (1994 - 1996)
President of the International Society for Bayesian Analysis (2005), Executive committee (2004-2006)
Member of Council of the International Statistics Institute (2001 -2004)
Member of Council of the International Biometric Society (1996-1999)

Editorial and Refereeing Services

Associate Editor Journal of the Royal Statistical Society – Series B (1996 – 2001)
Associate Editor Biometrics (1997 – 2001)
Editorial board of Statistics in Medicine (1993 – 1999)
Associate Editor Biostatistics (1999 – 2003)
Associate Editor International Statistics Review (2000 – 2003)
Editorial Board of Annual Review of Statistics and Its Application (2012-2017)

Conference organisation (from 2000)

Chair of Scientific Committee of the *International Biometrics Conference*, Berkeley, July 2000.
Co-Organiser, *International Workshop "Models and Inference in Highly Structured Stochastic Systems: Recent Developments and Perspectives"*. Centre International de Recherches Mathématiques at Luminy (France) November 2000.
Scientific Committee, *25th European Meeting of Statisticians* (Oslo, July 2005).
Scientific Committee, *Royal Statistical Society conference on Statistical Genetics and Bioinformatics*, Leuven, July 2003
Co-Organiser, *International Workshop on the "Statistical Analysis of Gene expression data"* (co-funded by the Royal Statistical Society and EPSRC), Wye (UK), July 2003
Organiser, *Workshop on "Data fusion in Genomics"*, Institute for Mathematical Sciences, Imperial College (September 2005)
Programme Committee, *8th World Congress in Probability and Statistics* (Bernoulli Society and IMS), Istanbul, July 2012
Chair of Scientific Committee of the *Medical Research Conference on Biostatistics* in celebration of the MRC Biostatistics Unit's Centenary Year, Cambridge, March 2014.

Publications (Journals, letters and discussion, books and chapters

171 Leday GG, Vértés PE, **Richardson S**, Greene JR, Regan T, Khan S, Henderson R, Freeman TC, Pariente CM, Harrison NA, Perry VH.
Replicable and coupled changes in innate and adaptive immune gene expression in two case-control studies of blood microarrays in major depressive disorder. *Biological Psychiatry*. 2017 Jul 6.

- 170 Petersen R, Lambourne JJ, Javierre BM, ..., Richardson S, ..., Turro E, Spivakov M, Astle WJ, Ouwehand W H, Downes K, Kostadima M & Frontini M. Platelet function is modified by common sequence variation in megakaryocyte super enhancers. *Nat Commun* **8**:16058 13 Jul 2017
- 169 D Greene, **S Richardson** and E Turro
A fast test for identifying pathogenic variants involved in rare diseases, *American Journal of Human Genetics* **101(1)**, 104-114 (2017)
- 168 C.C. Drovandi, C. Holmes, J.M. McGree, K. Mengersen, **S. Richardson** and E.G. Ryan
Principles of Experimental Design for Big Data Analysis, to appear in *Statistical Science* (2017)
- 167 D. Greene, E Turro and **S. Richardson**
ontologyX: A suite of R packages for working with ontological data. *Bioinformatics*, advanced access, 2017 (5th January)
- 166 **S Richardson**, GC Tseng and W Sun
Statistical Methods in Integrative Genomics. *Annual Review of Statistics and its Applications*, **3**: 181-209 (2016)
- 165 CA Vallejos, **S Richardson** and J. Marioni.
Beyond comparisons of means: understanding changes in gene expression at the single-cell level. *Genome Biology*, 17:70, (2016). DOI: 10.1186/s13059-016-0930-3
- 164 JE Peters, PA Lyons, JC Lee, AC Richard, MD Fortune, PJ Newcombe, **S Richardson** and KG Smith
Insight into Genotype-Phenotype Associations through eQTL Mapping in Multiple Cell Types in Health and Immune-Mediated Disease. *PLoS Genetics* 12(3):e1005908 (2016)
- 163 M. Papathomas and **S Richardson**.
Exploring dependence between categorical variables: Benefits and limitations of using variable selection within Bayesian clustering in relation to log-linear modelling with interaction terms. *Journal of Statistical Planning and Inference*, 173:47-63, (2016).
- 162 Liquet B., Bottolo L., Campanella G., **Richardson S.** and Chadeau-Hyam, M.
R2GUESS: A Graphics Processing Unit-Based R Package for Bayesian Variable Selection Regression of Multivariate Responses. *Journal of Statistical Software*, 69 (2), (2016).
[10.18637/jss.v069.i02](https://doi.org/10.18637/jss.v069.i02)
- 161 Mattei, F., ..., **Richardson S** and Stucker I.
Multidimensional analysis of the effect of occupational exposure to organic solvents on lung cancer risk: the ICARE study. *Occupational and Environmental Medicine*.
[doi:10.1136/oemed-2015-103177](https://doi.org/10.1136/oemed-2015-103177)(2016)
- 160 Turro, E., Greene, D., ..., **Richardson S.**, Freson K. and Ouwehand W.
A dominant gain-of-function mutation in universal tyrosine kinase SRC causes thrombocytopenia, myelofibrosis, bleeding, and bone pathologies. *Science translational medicine*, 8(328), (2016).
- 159 Stritt, S., Nurden, P., Turro, E., Greene, D., ..., **Richardson S.**, Freson K., Ouwehand W. and Mumford M (2016). A gain-of-function variant in DIAPH1 causes

dominant macrothrombocytopenia and hearing loss. *Blood*, (February 24, 2016)
<http://dx.doi.org/10.1182/blood-2015-10-675629>

158 Greene, D., Richardson, S., Turro, E. and BioResource, N.I.H.R., 2016.
Phenotype similarity regression for identifying the genetic determinants of rare diseases. *The American Journal of Human Genetics*, 98(3), pp.490-499.

157 Newcombe PJ, Conti DV, **Richardson S**
JAM: A scalable Bayesian framework for joint analysis of marginal SNP effects. *Genetic Epidemiology* 40(3), 188-201, (2016).

156 Lewin A, Saadi H, Peters JE, Moreno-Moral A, Lee JC, Smith KG, Petretto E, Bottolo L & **Richardson S**.
MT-HESS: an efficient Bayesian approach for simultaneous association detection in OMICS datasets, with application to eQTL mapping in multiple tissues. *Bioinformatics* (2016) doi: 10.1093/bioinformatics/btv568

155 Papageorgiou G, **Richardson S** & Best N.
Bayesian non-parametric models for spatially indexed data of mixed type. *Journal of the Royal Statistical Society Series B*, 77(5):973-999. (2015)
<http://dx.doi.org/10.1111/rssb.12097>

154 Chong HP, Cordeaux Y, Ranjan YS, **Richardson S, Lique B**, Smith GC & Charnock-Jones DS.
Age-related changes in murine myometrial transcript profile are mediated by exposure to the female sex hormones. *Aging Cell*. 2015;10.1111/accel.12406:n/a-n/a.
<http://www.ncbi.nlm.nih.gov/pubmed/26490259>

153 Liverani, S., Hastie, D. I., Azizi, L., Papathomas, M., & **Richardson, S**.
PReMiuM: An R Package for Profile Regression Mixture Models Using Dirichlet Processes. *Journal of Statistical Software*, 64(7), 1-30, (2015).

152 Vallejos, C. A., Marioni, J. C., & **Richardson, S**.
BASiCS: Bayesian analysis of single-cell sequencing data. *PLoS computational biology*, 11(6), p.e1004333. (2015)

151. C Wallace, ...**S Richardson**, Antony J Cutler, Linda S Wicker.
Dissection of a Complex Disease Susceptibility Region Using a Bayesian Stochastic Search Approach to Fine Mapping. *PLoGenetics*, (2015) DOI: 10.1371 / journal.pgen.1005272

150. S Geneletti, AG O'Keefe, LD Sharples, **S Richardson**, and G Baio, G.
Bayesian regression discontinuity designs: incorporating clinical knowledge in the causal analysis of primary care data. *Statistics in Medicine*. (2015), doi: 10.1002/sim.6486

149. SK Westbury, E Turro, D Greene, ... & WH Ouwehand, **S Richardson**, AD Mumford & K Freson.
Human phenotype ontology annotation and cluster analysis to unravel genetic defects in 707 cases with unexplained bleeding and platelet disorders. *Genome Medicine*, 7(1), 36, (2015)

148. JB Pettit, R Tomer, K Achim, **S Richardson**, L Azizi & J Marioni. Identifying cell types from spatially referenced single-cell expression datasets. *PLoS computational biology*. 2014;**10**(9):e1003824.
147. L Chen, M Kostadima, J H.A. Martens, G Canu, 56 authors, **S Richardson**, A Cvejic, N Soranzo, W H Ouwehand, H G Stunnenberg, M Frontini & A Rendon. Transcriptional diversity during lineage commitment of human blood progenitors. *Science* (26 September 2014).
146. J Molitor, I Brown, Q Chan, M Papatomas, S Liverani, NT Molitor, **S Richardson**, L Van Horn, M Daviglus, A Dyer, J Stamler, & P Elliott. Blood pressure differences associated with Optimum Macronutrient Intake Trial for Heart Health (OMNIHEART)-like diet compared with a typical American diet. *Hypertension* (8 September 2014)
145. PJ Newcombe, H Raza Ali, FM Blows, E Provenzano, PD Pharoah, C Caldas,..., & **S Richardson**. Weibull regression with Bayesian variable selection to identify prognostic tumour markers of breast cancer survival. *Statistics Methods in Medical Research*, (4 September 2014).
144. T Truong, B Liquet, F Menegaux, S Plancoulaine, P Laurent-Puig, C Mulot, E. Cordina-Duverger, M Sanchez, P Arveux, P Kerbrat, **S Richardson** & P Guenel. Breast cancer risk, nightwork, and circadian clock gene polymorphisms. *Endocrine-Related Cancer* **21**, 629–638, (2014)
143. DI Hastie, S Liverani & **S Richardson**. Sampling from Dirichlet process mixture models with unknown concentration parameters: mixing issues in large data implementations. *Statistics and Computing*, (May 2014).
DOI 10.1007/s11222-014-9471-3
142. M Chadeau-Hyam, P Tubert-Bitter, C Guihenneuc-Jouyaux, G Campanella, **S Richardson**, R Vermeulen, M De Iorio, S Galea, & P Vineis. Dynamics of the risk of smoking-induced lung cancer: a compartmental hidden Markov models for longitudinal analysis. *Epidemiology*, **25**(1):28-34 (2014)
141. DI Hastie, S Liverani, L Azizi, **S Richardson** and I Stucker. A semi-parametric approach to estimate risk functions associated with multidimensional exposure profiles: application to smoking and lung cancer. *BMC Medical Research Methodology*, **13**(1):129. (23 Oct 2013)
140. AL Hansell, M Blangiardo, L Fortunato, coll. & **S Richardson**, P Elliott. Aircraft noise and cardiovascular disease near London Heathrow Airport. *British Medical Journal*, **347**, f5432, (2013)
139. L Bottolo, M Chadeau-Hyam, coll. & **S Richardson**. GUESS-ing polygenic associations with multiple phenotypes using a GPU-based Evolutionary Stochastic Search algorithm. *PLoS Genetics*, **9**(8), e1003657, (2013)
138. P Kirk, A Witkover, CRM Bangham, **S Richardson**, AM Lewin, MPH Stumpf. Balancing the Robustness and Predictive Performance of Biomarkers, *Journal of Computational Biology*, **20**(10): 1-11 (2013)

137. S Geneletti, N Best, MB Toledano, P Elliott & **S Richardson**.
Uncovering selection bias in case-control studies using Bayesian post-stratification.
Statistics in Medicine, 32(15), 2555-2570 (2013)
136. G Li, R Haining, **S Richardson** & N Best
Evaluating the No Cold Calling zones in Peterborough, England: application of a novel
statistical method for evaluating neighbourhood policing policies.
Environment and Planning A. 45(8): 2012-2026 (2013)
135. W Astle, M De Iorio, **S Richardson**, D Stephens & T Ebbels.
A Bayesian Model of NMR Spectra for the Deconvolution and Quantification of
Metabolites in Complex Biological Mixtures. *Journal of the American Statistical
Association*. 107(500), 1259-1271 (2012).
134. L McCandless; **S Richardson**; N Best.
Adjustment for Missing Confounders Using External Validation Data and Propensity
Scores. *Journal of the American Statistical Association*. 107:40-51 (2012)
133. M Papatomas, J Molitor; C Hoggart; D Hastie; **S Richardson**.
Exploring Data From Genetic Association Studies Using Bayesian Variable Selection and
the Dirichlet Process: Application to Searching for Gene \times Gene Patterns.
Genetic Epidemiology. 36:663-674 (2012)
132. S Ancelet; JJ Abellan; VJ Del Rio Vilas; C Birch; **S Richardson**.
Bayesian shared spatial-component models to combine and borrow strength across
sparse disease surveillance sources. *Biometrical Journal*. 54:385-404 (2012)
131. C Petit, M Blangiardo, **S Richardson**, F Coquet, C Chevrier, S Cordier
Association of Environmental Insecticide Exposure and Fetal Growth With a Bayesian
Model Including Multiple Exposure Sources: The PELAGIE Mother-Child Cohort.
Am J Epidemiol 175 (11): 1182-1190 (2012)
130. A Mason, **S Richardson**, I Plewis, and N Best.
Strategy for modelling non-random missing data mechanisms in observational studies
using Bayesian methods.
Journal of Official Statistics 28(2):279-302 (2012)
129. D Ginestet, N Best and **S Richardson**
Classification Loss Function for Parameter Ensembles in Bayesian Hierarchical Models.
Statistics and Probability Letters, 82(4): 859-863 (2012).
128. G Li; N Best; AL Hansell; I Ahmed; **S Richardson**.
BaySTDetect: detecting unusual temporal patterns in small area data via Bayesian
model choice.
Biostatistics 13 (4): 695-710 (2012)
127. A Mason, **S Richardson** and N Best.
Two-pronged Strategy for Using DIC to Compare Selection Models with Non-Ignorable
Missing Responses.
Bayesian Analysis, 7(1): 109-146 (2012)
126. LC McCandless; P Gustafson; AR Levy; **S Richardson**.

Hierarchical priors for bias parameters in Bayesian sensitivity analysis for unmeasured confounding.

Statistics in Medicine. **31**:383-396 (2012)

125. SJ Clark; M Falchi; B Olsson; P Jacobson; S Cauchi; B Balkau; M Marre; O Lantieri; JC Andersson; M Jernås; TJ Aitman ; **S Richardson**; L Sjöström; HY Wong; LM Carlsson; P Froguel; AJ Walley

Association of sirtuin 1 (SIRT1) gene SNPs and transcript expression levels with severe obesity.

Obesity (Silver Spring). **20**:178-185 (2012)

124. AJ Walley, P Jacobson, M Falchi, L Bottolo, JC Andersson, E. Petretto, A Bonnefond, E Vaillant, C Lecoeur, V Vatin, M Jernas, D Balding, M Petteni, YS Park, T Aitman, **S Richardson**, L Sjöstrom, LMS Carlsson and P Froguel.

Differential co-expression analysis of obesity-associated networks in human subcutaneous adipose tissue.

International Journal of Obesity, **36**:137-147 (2012)

123. I Ahmed, AL Hartikainen, MJ Jarvelin, and **S Richardson**.

False Discovery Rate estimation for Stability Selection: Application to Genome-Wide association studies.

Statistical Applications in Genetics and Molecular Biology. **10(1)**, 1544-6115 (2011)

122. L Bottolo; E Petretto; S Blankenberg; F Cambien; SA Cook; L Tiret; **S Richardson**.

Bayesian detection of expression quantitative trait loci hot spots.

Genetics. **189**:1449-1459 (2011)

121. J Molitor; JG Su ; NT Molitor; VG Rubio; **S Richardson**; D Hastie; R Morello-Frosch; M Jerrett.

Identifying vulnerable populations through an examination of the association between multipollutant profiles and poverty.

Environ Sci Technol. **45**:7754-7760 (2011)

120. PD Kirk, A Witkover, A Courtney, AM Lewin, R Wait, MP Stumpf, **S Richardson**, GP Taylor, CR Bangham.

Plasma proteome analysis in HTLV-1-associated myelopathy/tropical spastic paraparesis.

Retrovirology. 2011 Oct 12; 8:81.

119. AA Brown; **S. Richardson**; J. Whittaker.

Application of the Lasso to Expression Quantitative Trait Loci Mapping.

Statistical Applications in Genetics and Molecular Biology, **10**.(2011)

118. L. Bottolo, M. Chadeau-Hyam, D.I. Hastie, S.R. Langley, E. Petretto, L. Tiret, D.Tregouet and **S. Richardson**..

ESS++: a C++ objected-oriented algorithm for Bayesian stochastic search model exploration,

Bioinformatics, **27**: 587-588 (2011).

117. E. Turro, S-Y. Su , A. Goncalves, L.J.M. Coin, **S. Richardson**, A. Lewin.

Haplotype and isoform specic expression estimation using multi-mapping RNA-seq reads.

Genome Biology, **12**:R13, (2011).

116. L Fortunato; JJ Abellan; L Beale; S LeFevre; **S Richardson**.

Spatio-temporal patterns of bladder cancer incidence in Utah (1973-2004) and their association with the presence of toxic release inventory sites.

Int J Health Geogr. 10:16, (2011)

115. M. Blangiardo, **S. Richardson**, A. Hansell and J. Gulliver

A Bayesian analysis of the impact of air pollution episodes on cardio-respiratory hospital admissions in the Greater London area,

Statistical Methods in Medical Research. **20**:69-80 (2011)

114. M. Blangiardo, A. Hansell and **S. Richardson**

A Bayesian model of time activity data to investigate health effect of air pollution in time series studies.

Atmospheric Environment **45(2)**, 379-386 (2011)

113. VJ Del Rio Vilas VJ, S Ancelet S, JJ Abellan JJ, C.P. Birch CP and **S. Richardson**

A Bayesian hierarchical analysis to compare classical and atypical scrapie surveillance data; Wales 2002-2006.

Prev Vet Med **98**: 29-36 (2011)

112. M. Papathomas, J. Molitor, **S. Richardson**, E. Riboli and P. Vineis

Examining the joint effect of multiple risk factors using exposure risk profiles: lung cancer in non smokers.

Environmental Health Perspectives. **119**: 84-91 (2011)

111. L. Bottolo and **S. Richardson**. (2010)

Evolutionary Stochastic Search for Bayesian model exploration.

Bayesian Analysis, **5(3)**, 583--618.

110. M. Blangiardo, A. Cassese and **S. Richardson**

Sdef: an R package to synthesize lists of significant features in related experiments.

BMC Bioinformatics. **11**:270doi:10.1186/1471-2105-11-270, (2010)

109. E. Petretto, L. Bottolo, S.R. Langley, M. Heining, C. McDermott-Roe, R. Sarwar, M. Pravenec, N. Hübner, T. J. Aitman, S. A. Cook, **S. Richardson**.

New Insights into the Genetic Control of Gene Expression using a Bayesian Multi-tissue Approach.

PLoS Comput Biol **6(4)**: e1000737, (2010)

108. R. Haining, G.Q. Li, R. Maheswaran, M. Blangiardo, J. Law, **S. Richardson** & N. Best

Inference from ecological models: estimating the relative risk of stroke from air pollution exposure using small area data.

Spatial and Spatio-temporal Epidemiology, **1**:123-131, (2010)

107. J. T. Molitor, M. Papathomas, M. Jerrett and **S. Richardson**.

Bayesian Profile Regression with an Application to the National Survey of Children's Health,

Biostatistics **11**, 484-498, (2010)

106. A.J. W. Paige, M. Zucknick, S. Janczar, J. Paul, C. A. Mein, K. J. Taylor, M. Stewart, C. Gourley, **S. Richardson**, T. Perren, T. S. Ganesan, J. F. Smyth, R. Brown, F. Balkwill, and H. Gabra
WWOX Tumour Suppressor Gene Polymorphisms and Ovarian Cancer Pathology and Prognosis,
European Journal of Cancer; **46(4)**: 818-25 (2010).
105. P Gustafson, L.C Mc Candless, A.R. Levy and **S. Richardson**
Simplified Bayesian sensitivity analysis for mismeasured and unobserved confounders,
Biometrics, **66(4)**, 1129-1137, (2010).
104. E Turro; A Lewin; A Rose; MJ Dallman; **S Richardson**.
MMBGX: a method for estimating expression at the isoform level and detecting differential splicing using whole-transcript Affymetrix arrays.
Nucleic Acids Res. **38**:e4-e4 (2010)
103. P. Broet, P. Tan, M Alifano, S. Camilleri-Broet, and **S Richardson**
Finding exclusively deleted or amplified genomic areas in lung adenocarcinomas using a novel chromosomal pattern analysis.
BMC Medical Genomics, **2**:43 (2009).
102. **S. Richardson** and C. Guihenneuc-Jouyaux
Impact of Cliff and Ord (1969, 1981) on Spatial Epidemiology
Geographical Analysis, **41(4)**: 444-451 (2009).
101. S Gorja; C Daniau; P de Crouy-Chanel; P Empereur-Bissonnet; P Fabre; M Colonna; C Duboudin; JF Viel; **S Richardson**.
Risk of cancer in the vicinity of municipal solid waste incinerators: importance of using a flexible modelling strategy.
Int J Health Geographics. 8, (2009)
100. O Ratmann; C Andrieu; C Wiuf; **S Richardson**.
Model criticism based on likelihood-free inference, with an application to protein network evolution.
Proc Natl Acad Sci U S A. 106:10576-10581, (2009)
99. NT Molitor; N Best; C Jackson; **S Richardson**.
Using Bayesian graphical models to model biases in observational studies and to combine multiple sources of data: application to low birth weight and water disinfection by-products. *Journal of the Royal Statistical Society, Series A: Statistics In Society*, 172:615-637 (2009).
98. S. Geneletti, N. Best and **S. Richardson**. (2009)
Adjusting for selection bias in retrospective case control studies.
Biostatistics, **10(1)**:17-31.
97. P. Elliott, **S. Richardson**, J.J. Abellan, A. Thomson, D. Briggs, C. de Hoogh, L. Jarup. (2009).
Geographic density of landfill sites and risk of congenital anomalies in England.
Occupational and Environmental Medicine: **66**:81-89.
96. C. Jackson, N. Best and **S. Richardson**. (2009)
Bayesian graphical models for regression on multiple datasets with different variables

Biostatistics; **10**(2):335-351.

95. M Blangiardo and **S Richardson**. (2008)
A Bayesian calibration model for combining different pre-processing methods in Affymetrix chips.
BMC Bioinformatics, **9**:512.
94. C. Jackson, **S. Richardson** and N. Best. (2008)
Studying place effects on health by synthesising individual and area-level outcomes
Social Science & Medicine, **67**: 1995-2006.
93. J.J. Abellan, **S. Richardson** and N. Best. (2008).
Use of Space-time Models to Investigate the Stability of Patterns of Disease
Environ Health Perspect. **116**:1111–1119.
92. M. Zucknick, **S. Richardson** and E. A. Stronach. (2008).
Comparing the Characteristics of Gene Expression Profiles Derived by Univariate and Multivariate Classification Methods,
Statistical Applications in Genetics and Molecular Biology, **7**(**1**), Article 7.
91. C. Jackson, N. Best and S. Richardson. (2008).
Hierarchical related regression for combining aggregate and individual data in studies of socio-economic disease risk factors.
Journal of the Royal Statistical Society, Series A: Statistics In Society, **171**(**1**):1-20.
90. Lewin, N. Bochkina and **S. Richardson**. (2007)
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