Members of staff who have been with ALSPAC since its inception find it hard to believe that the newborn babies they held in the palm of their hand are now young adults embarking on independent lives. Many of these young people have remained committed to the study for almost 21 years.

Our 21st birthday in 2012 is a perfect time to celebrate the study’s successes and to look forward to the cutting-edge research of the future.

We are planning a programme of events and celebrations to mark our 21st anniversary. Some of the activities planned include an academic conference in April with researchers working across the full spectrum of ALSPAC data, parties for the participants, a book, an exhibition and a range of public-engagement and PR activities.

As a preview to 2012’s activities, we will be hosting an exhibition that celebrates the best of ALSPAC at M Shed in Bristol on Saturday 3 December.

The exhibition is based on stories (told through words, images and video) told by people connected with ALSPAC in some way.

If you’d like to tell your story, please go to [http://bit.ly/uobapc6](http://bit.ly/uobapc6), where you can also find out more about the project and see some of the contributions already received.

To find out more about the exhibition and all our plans for 2012, please email dara.ohare@bristol.ac.uk.
Since joining ALSPAC several months ago, one of the most enjoyable aspects of my job has been publicising its research findings to the wider world, writes Dara O’Hare, ALSPAC’s new Communications Manager.

ALSPAC’s rich data are used by researchers all over the world who work in practically every branch of the biomedical and social sciences, so the stories we can tell have great depth and breadth of public appeal.

One of the many highlights for me has been working with some of the young mums in the study to record footage for BBC and ITV news to announce our £6m strategic award from the Wellcome Trust and the Medical Research Council; to participate in a BBC Radio 4 series entitled ‘Generations’, and to film ‘Brave New World’ with Sir Robert Winston, a new Channel 4 series about scientific breakthroughs (due to be aired in at 8pm on Monday 14 November).

Some of our research findings that have been hitting the headlines in recent months include news that depression following miscarriage can last for years, even after a healthy birth; that a short jog every day can stave off osteoporosis; that a rich communication environment at home (more talking, less TV) can dramatically improve a child’s language skills and readiness for school; and that children weaned on home-cooked fruit and veg are more likely to eat ‘five a day’ when older.

These stories have been covered by the world’s media from the BBC and Sky News to the New York Times, the Sydney Morning Herald and the Times of India. One of our recent press releases, showing that smoking in films can encourage teenagers to take up the habit had the questionable honour of being featured on BBC Radio 4’s Today Programme, Marie Claire and Radio Times all on the same day.

For all these stories and more, go to www.bris.ac.uk/alspac/media/press/.

If you have a research paper using ALSPAC data coming out that you would like publicised, contact Dara O’Hare, Communications Manager at dara.ohare@bristol.ac.uk
New ALSPAC Information Security Management

As part of the PEARL (Project to Enhance ALSPAC through Record Linkage) project which is establishing data linkages between ALSPAC and a number of UK government data sources; ALSPAC is working towards ISO 27001 certification. ISO 27001 is an international standard of risk based information security management published by the International Organisation for Standardisation and the International Electrotechnical Commission.

The standard is rare in academia, having been much more widely adopted in the business world. Gaining certification in ISO 27001 will demonstrate that ALSPAC has proven structured processes and procedures in place to protect the data it has collected over the last 20 years.

Certification in ISO 27001 requires a two stage audit, which ALSPAC will have completed by early February 2012. Certification lasts for three years, and during this time ALSPAC must constantly review and improve its information security. This will be monitored by the auditing body through two annual surveillance audits, in addition to the annual internal audits which ALSPAC must also undergo.

A new information security policy that closely follows the ISO 27001 standard has been written and adopted; information security training is being rolled out to all ALSPAC staff to heighten awareness of both the project and the new policy and the finishing touches are being put to ALSPAC’s information security management system (ISMS), the overall document set that governs the organisation’s information security.

For further information on the ALSPAC Information Security Project please email: alspac-infosec@bristol.ac.uk

By Jonathan Onslow
ALSPAC Data Security Officer, University of Bristol

“Gaining certification in ISO 27001 will demonstrate that ALSPAC has proven structured processes and procedures in place to protect the data it has collected over the last 20 years.”
The Leverhulme Trust has provided a Fellowship for Professor Jean Golding to create an 'ALSPAC Ethics Archive' as an essential preliminary to describing the history of ethical decision making within ALSPAC. The archive will eventually become a subset of the main ALSPAC Archive which the University of Bristol has agreed should be housed in the University Library’s Special Collections (alongside the Brunel Collection and Penguin Books). The Ethics Archive will provide a comprehensive resource available for medical historians, ethicists, epidemiologists, sociologists, Study participants and other interested parties.

Surprisingly, considering the UK had pioneered national birth cohorts in 1946, 1958 and 1970, there were no ethical committees or institutional review boards specifically concerned with such research methods at the time that ALSPAC was set up. In 1989, while ALSPAC was still being planned and piloted, the ALSPAC Steering Committee initiated an ethics advisory committee attached to the Study itself.

The ALSPAC Ethics and Law Committee is considered by many as innovative for this reason but also as it advised from the outset on the issues arising from the collection and utilisation of genetic data. These issues had hardly been addressed previously in the context of population studies (in contrast to clinical genetics). The committee worked from 'first principles' as there were no other ethical committees within the University, no academic Centre for Ethics in Medicine (established in 1998) and only a benign interest from the local NHS Research Ethics Committees (LRECs).

Karen Birmingham, longstanding secretary to the ALSPAC Ethics and Law Committee, has been employed to establish the archive, which is scheduled to be complete by the end of June 2012. Expressions of interest to use the archive for further research have already been expressed.

Karen has been awarded a two month visiting researcher post in 2012 by the Brocher Foundation, a Swiss non-profit making foundation that provides facilities for visiting researchers to write on the ethical, legal and social implications of medical research. Based on the archive and written mainly for study participants Karen intends to use this time to describe the work of the committee during its first 16 years, summarising the ethical issues, discussions and outcomes and putting the committee’s work into the legal and ethical context of the time.

“The Ethics Archive will provide a comprehensive resource available for medical historians, ethicists, epidemiologists, sociologists, Study participants and other interested parties.”

By Karen Birmingham
Research Ethics Manager and Archive Project Manager
ALSPAC, University of Bristol

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Useful links:

**ALSPAC collaboration policy:**
http://www.bristol.ac.uk/alspac/sci-com/collab-policy/

**Future ALSPAC data collection plans:**

**ALSPAC questionnaires:**
http://www.bristol.ac.uk/alspac/sci-com/quests/

**ALSPAC data documentation (general data summary tables and subject-based variable tables):**
http://www.bristol.ac.uk/alspac-social-sciences/data-guide/datadocumentation/

**Past conferences including links to abstracts and presentations:**
http://www.bristol.ac.uk/alspac-social-sciences/workshops/

**List of ALSPAC research publications by year:**
http://www.bris.ac.uk/alspac/sci-com/pubs/

**ALSPAC research publications of relevance to the social sciences:**
http://www.bristol.ac.uk/alspac-social-sciences/research/past.html

Please send us details of your ongoing research to
alspac-socsci@bristol.ac.uk
PEARL is the ‘Project to Enhance ALSPAC through Record Linkage’. PEARL aims to develop a comprehensive strategy and methodology to collect individual data from routinely collected records. To achieve this PEARL needs to enrol the young people in the cohort into the study in their own right now that they are over 18 years old and secondly, to ask their consent to link to their routinely collected health and administrative records.

PEARL has developed consent materials using National Research Ethics Service (NRES) guidance to inform the cohort about ALSPAC and data collection via record linkage.

A Randomised Control Trial pilot study was carried out using a sample of 2000 participants during April 2011 to test these consent materials. 1000 young people received a ‘designed’ pack (designed by a graphic designer) and 1000 received a ‘standard’ pack (designed in house); both packs contained the same information. The results are currently being written up. During the summer this year, a further 8000 of the cohort received the ‘designed’ pack. We are still receiving consent forms back daily from this group.

For those young people that have agreed to continue with ALSPAC and have given their permission for us to carry out data linkage (~ 3000 to date), we are currently undertaking pilot work to link their data to Primary Care records, Hospital Episodes Statistics (HES) data, and Police National Computer records (PNC).

* * *

PEARL has made two recent appointments:

Data Preparation Assistant (Amy Davies) to work on the Further Education and Higher Education (Post-16 data). Amy is currently preparing the Key Stage 5 data for release.

Research Associate (Rosie Cornish) to work on GPRD (General Practice Research Database) data. Using GPRD we have access to Primary and Secondary health care records for 800 participants. We are using this to develop and understand procedures for handling primary care data, and are conducting exemplary research projects.
I am an MRC funded PhD student based at the Centre for Ethics in Medicine at the University of Bristol, supervised by Dr Ainsley Newson, Professor John Macleod in Bristol and Dr Catherine Heeney from the Instituto de Filosofía, CSIC, Madrid.

I am conducting an empirical ethics study (combining qualitative research with theoretical ethical analysis) to investigate the ethical issues raised by data linkage in epidemiological research with young people, using the Project to Enhance ALSPAC through Record Linkage (PEARL) as a case study.

Linkage of epidemiological research to existing routine data sources provides many research benefits including enhancing data sets with new and missing data. However more research is needed to explore the perceptions of various stakeholders involved with regards to ethical issues raised such as confidentiality, privacy, informed consent and potential benefits to public health. It is particularly important to explore the views of research participants because longitudinal cohort studies such as ALSPAC rely on these individuals for the continuing success of their studies and associated scientific progress.

The integration of the findings from my research with a theoretical analysis of pertinent ethical issues raised by linkage to routine administrative data may also have implications for current research ethics guidelines.

I am currently conducting qualitative interviews with ALSPAC researchers, ethics committee members and members of the ALSPAC cohort including those who have been invited to participate in the PEARL project. I am using a constant comparative analysis to explore these data and the findings of my empirical research will also be examined alongside and integrated with an analysis of relevant ethical theory concerning both public health and research ethics, for example issues such as privacy and trust and the benefits and burdens of conducting population health research.
Early, late or never – when does parental education impact child outcomes?

The positive correlation between parental education and child education is well documented for a number of developed countries, however establishing causation is complicated by the unobserved genetic and environmental characteristics which are correlated with parental education and will also independently influence child outcomes.

One way around this problem is to exploit historical changes in compulsory schooling laws which result in otherwise similar individuals gaining different amounts of education simply because of the school year that they were born into. The last such change in England and Wales was in 1973 when the minimum school leaving age was raised from 15 to 16. The change affected people born from 1st September 1957 onwards, therefore parents of the ALSPAC children who were in their mid-thirties at the time of the child’s birth were potentially affected by this policy.

This 1973 raising of the minimum school leaving age (RoSLA) had a sizeable effect on education levels in the population, with an increase in the average number of years of schooling of just under one third of a year for both men and women. Moreover, this additional schooling was accompanied by an increase in the proportion of people leaving school with formal academic qualifications. Amongst ALSPAC parents we see this reflected in an increase in qualification holding of 4 percentage points for men and 6 percentage points for women for those born after the policy was implemented compared with those born before.

We exploit this exogenous increase in education to estimate the causal effect of parents’ education on children’s school performance measured at age 5, 7, 11, 14 and 16. We find that ALSPAC children whose parents were affected by the 1973 RoSLA have significantly higher test scores at school entry and at each of the Key Stages 1 to 4 compared with those children whose parents were not affected. The effect size is non-trivial, with the impact on GCSEs equivalent to a grade-and-a-half improvement in one GCSE. As well as examining the timing of the impact, the research also explores whether different subjects are differentially affected, for example the effect of parents’ education on children’s Maths results compared with the impact on English language and literacy outcomes.
Laura’s research focussed on childhood obesity in the ALSPAC cohort, examining socioeconomic inequalities in obesity and how obesity in childhood may link to later cardiovascular health.

Historically, obesity was a disease of affluence, with a high-calorie diet and sedentary lifestyle being the preserve of the rich. This pattern has reversed across much of the world. Today, both adults and children from lower socioeconomic backgrounds tend to be more overweight in high-income settings, and this pattern is beginning to show in low- and middle-income countries. Whereas a gradient of higher levels of adult obesity with decreasing socioeconomic position (SEP) has long been established in high-income countries a similar socioeconomic gradient in childhood adiposity is a relatively recent phenomenon. The age at which socioeconomic differences emerge in contemporary children and adolescents, and how these differences change with age, is unclear. Additionally, it is not known whether inequalities in obesity amongst today’s children result in socioeconomic differentials in risk factors for later cardiovascular diseases at a young age; such inequalities were not seen in childhood for older generations despite strong social patterning in adulthood.

Laura’s analysis of ALSPAC data showed that there was very little socioeconomic inequality in adiposity in the first few years of life; inequality in BMI began to emerge at approximately age four years and widened as the children got older. By ten years there was evidence of socioeconomic inequality in several cardiovascular risk factors. Children from lower socioeconomic backgrounds were more likely than their more socially advantaged peers to go from a healthy BMI in childhood to being overweight/obese as adolescents. They were also more likely to be overweight/obese both as a child and an adolescent, but there was no socioeconomic difference in the proportion of children who were overweight/obese as a child and returned to a healthy weight in adolescence.

The inequality observed in this cohort is far greater than was observed for older generations, suggesting that when these children reach adulthood the inequalities in coronary heart disease and other adverse outcomes may be even wider than those observed in today’s adults. Interventions to prevent and reduce childhood obesity are important to avoid this. Obesity levels are high across all socioeconomic groups, suggesting that whole-population interventions are important. In order to reduce inequalities in obesity, however, interventions targeted at low socioeconomic groups, or efforts to increase uptake of population-wide interventions will be necessary.
Drs. Kenneth Kendler, M.D. and Danielle Dick, Ph.D. have been awarded a 5 year NIH grant, in collaboration with Drs. Glyn Lewis, Matt Hickman, and John Macleod, to study pathways of risk to alcohol use and alcohol-related problems using the rich longitudinal data in ALSPAC. This grant will help fund alcohol related assessments in the forthcoming follow-ups as the ALSPAC participants transition into young adulthood, a critical period for the development of alcohol related problems.

Drs. Kendler and Dick both have extensive experience in both large-scale data collection projects and innovative analytic techniques. Dr. Kendler has for over 20 years been the PI on a series of NIMH, NIDA and NIAAA grants that have funded the Virginia Twin Study of Psychiatric and Substance Use Disorders. Dr. Dick has been a collaborator on two on-going NIAAA-funded Finnish Twin Studies for >10 years, and currently has an R01 and K02 midcareer award utilizing data from these studies and other longitudinal developmental projects. Jointly, Drs. Kendler and Dick have over 200 publications in the area of developmental genetic epidemiology and gene identification of alcohol use and alcohol use disorders. Recently, Dr. Kenneth Kendler was named a recipient of the 2011 ISPG Ming Tsuang Lifetime Achievement Award by the International Society of Psychiatric Genetics. Dr. Danielle Dick was the recipient of the 2011 International Society of Psychiatric Genetics Richard Todd Award in Child Psychiatry.

ALSPAC provides a rare opportunity to study how risk unfolds from the time of conception. This will be unique in the alcohol literature, where much of the research on alcohol use predictors has focused on adolescence.

"...very early temperamental factors are associated with alcohol related outcomes nearly a decade later."
However, many of the salient temperamental, behavioral, and social characteristics that contribute to risk or protection for alcohol use and alcohol use disorders have origins earlier in life. Accordingly, our initial analyses have focused on whether we could predict adolescent alcohol use based on indices from very early in development.

Are very early childhood factors relevant in the prediction of alcohol related outcomes in adolescence? To address this question, we factor analyzed all temperamental data available before age 6 (ranging from 4 months to 6 years of age). Similarly, we factor analyzed the alcohol consumption and problem items available at age 15. In the main analysis, we tested the association between the temperament factor scores and the alcohol factor scores, both directly, and as mediated through measures of friendship networks/problems, antisocial peer affiliation, sensation-seeking, extraversion, agreeableness, conscientiousness, and emotional stability.

Initial results suggest different pathways to adolescent alcohol involvement. Children who are more sociable/less shy report higher alcohol consumption scores, and this association is mediated in part through high extraversion and sensation-seeking, and fewer friendship problems. Conversely, children who have early emotional problems have higher alcohol problem scores, and this association is mediated through lower extraversion, lower conscientiousness, less emotional stability and more antisocial peers. These analyses demonstrate that very early temperamental factors are associated with alcohol related outcomes nearly a decade later. Further, they highlight two very different pathways to alcohol related outcomes. Our eventual goal is to try to clarify various pathways to alcohol consumption and problems, incorporating data about externalizing traits and problems, internalizing symptoms, and environmental risk. We are also working with collaborators in Bristol to begin analyses of externalizing and alcohol related outcomes using Genome Wide Association Study data. We look forward to working with ALSPAC investigators on these projects.

Danielle M. Dick, Ph.D.
Associate Professor of Psychiatry, Psychology, and Human and Molecular Genetics
Virginia Institute for Psychiatric and Behavioral Genetics
Virginia Commonwealth University
We have recently investigated cognition and lipids in the ALSPAC children in relation to apolipoprotein E (APOE) genotype, which we typed in our laboratory in Bristol.

APOE is one of a class of proteins that binds to lipids and is involved in lipid transport through the blood and lymphatic system. There are 3 main forms of APOE, which are coded by three alleles of the APOE gene (ε2, ε3 and ε4). This gene is of particular importance and interest as carriers of the ε4 allele have been found to have a greatly increased risk of Alzheimer’s disease in later life. The different alleles of APOE also have major effects on lipid levels in the blood and subsequent risk of cardiovascular disease.

As well as the well known association with Alzheimer’s, several studies have found the ε4 allele to be associated with increased rates of cognitive decline as part of normal aging in later life. Some previous small studies have shown that there appears to be no major effect in earlier life on cognition itself, but these have been underpowered.

We wanted to see if any effect of APOE genotype could be seen throughout life, by looking at APOE genotype in relation to cognitive function measures in the ALSPAC children. For example, we estimated that in the ALSPAC cohort it would be possible to detect a one point IQ difference between common genotype groups for APOE. We tested for associations between APOE genotype and IQ and memory tasks at age 8 and age 10. In addition, we looked at the results of school attainment test scores (SATS) at ages 7, 11 and 14 to see if APOE genotype had any effect on educational achievement. We found no evidence of differences in any of the cognitive function measures studied by APOE genotype. Reassuringly, APOE does not appear to be detrimental to cognitive performance in childhood or adolescence.

APOE genotype in the ALSPAC children showed the same characteristic patterns of association with lipids as have previously been described in both adults and children. This genotype is therefore likely to be useful for studying the origins of cardiovascular disease within ALSPAC.

Genotyping of the ALSPAC mothers has also been completed and future studies will be undertaken by Dr Lindsey Sinclair (Clinical Lecturer in General Adult Psychiatry, School of Social & Community Medicine, University of Bristol) who has just been awarded a Wellcome Trust clinical training fellowship.
Since the last newsletter, John Jerrim and Anna Vignoles, working with Professor Sophia Rabe-Hesketh (University of California, Berkley and IOE), have commenced work on a follow up paper to their article "The use (and misuse) of statistics in understanding social mobility: regression to the mean and the cognitive development of high ability children from disadvantaged homes". This new paper recognises that in the UK, as in many other countries, there are major differences in the educational and labour market outcomes of individuals from different socio-economic backgrounds. Some, but by no means all, of these differences are attributable to early differences in children’s “ability”. This paper attempts to quantify the socio-economic gap in educational achievement, comparing individuals who showed similar levels of early (primary school) human capital. This is methodologically challenging for a number of reasons, not least of which early measures of cognitive achievement suffer from measurement error and the issue of regression to the mean in test scores, as shown in our previous work. Our new work proposes to use an alternative method to overcome the problems associated with measurement error in early human capital using a latent variable modelling approach.

The research team consists of psychiatrists, psychologists, economists, statisticians, educationalists and epidemiologists.

Over 50 researchers are involved, most are based at the University of Bristol. Researchers at the Institute of Education take the lead on two projects and leading experts from 14 other institutions both inside and outside the UK take key roles in one or more sub-projects. There are 27 related sub-projects organised into 6 interlinked strands.

Antecedents of cognitive outcomes in adolescence led by Professor Anna Vignoles, with Claire Crawford and John Jerrim, Institute of Education

Anna Vignoles
Professor of Economics Education
Institute of Education
University of London

Claire Crawford
Research Officer
Institute of Education
University of London

This ESRC funded project started in 2007 and runs for 5 years (until March 2012). The objective is to understand the importance of family socio-economic status/position for adolescents in Britain today. The primary focus is the behaviours and outcomes of individuals in late childhood and adolescence, including physical and mental health, risky behaviours, school performance and the acquisition of soft cognitive skills.

A detailed summary report of research outputs will be presented in the next ALSPAC Social Science Research Newsletter.

Impact on Family Socio-Economic Status on Outcomes in Childhood & Adolescence

www.bristol.ac.uk/ifssoca
Dr Laura D Howe was awarded the

**Neville Butler Memorial Prize 2011**

for her work on: *Childhood obesity: socioeconomic inequalities and consequences for later cardiovascular health.*

The prize is awarded by the [Longview Society](http://www.longviewuk.com/pages/butler_prize.shtml) through money raised in connection with commemorating Neville Butler’s life, and generous support from the [UK Economic and Social Research Council](http://www.esrc.ac.uk). Professor Neville Butler was a paediatrician who played a lead role in establishing and maintaining two of Britain’s key cohort studies - the National Child Development Study (1958) and the British Cohort Study (1970). The prize recognises Professor Butler’s commitment to longitudinal research.

The essay, can be obtained from:


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**Carol Propper**, Professor of Economics of Public Policy at the University, with co-authors **Mike Shields** and **David Johnston** wins the

**Australian Health Economics Society Research Prize 2011**

for their work on *hypertension reporting*.

This work was funded by the ESRC Large Grant’ An Examination of the Impact of Family Socio-economic Status on Outcomes in Late Childhood and Adolescence’.

The paper was published in the *Journal of Health Economics* 28 (3) pp.540-552 (May 2009)

A copy of the paper essay, can be obtained from:

Upcoming Events

Early life interventions and intergenerational mobility
Friday 28th October 2011, 9.30 – 18.00
The Boardroom, BIPA, 2 Priory Road, University of Bristol, BS8 1TX

Organised by Professor Sonia Bhalotra and Professor Paul Gregg

funded by the ESRC Large Grant ‘An Examination of the Impact of Family Socio-economic Status on Outcomes in Late Childhood and Adolescence’

Speakers:


Kjell G. Salvanes (Norwegian School of Economics) ‘A Flying Start? Long Term Consequences of Maternal Time Maternity Leave and Investments in Children During Their First Year of Life’. With Pedro Carneiro & Katrine V. Løken.

Anna Vignoles (Institute of Education) Paper TBA

Emia Fitzsimons (IFS) & Marcos vera Hernandez (UCL) Paper TBA

Lindsey Macmillan (CMPO) ‘Measuring the Intergenerational Correlation of Worklessness’

Matt Dickson (UCD and CMPO) ‘Early, late or never – when does parental education impact child outcomes?’ With Paul Gregg and Harriet Robinson


Admission is free and lunch will be provided for all participants. Participants are responsible for covering their own travel and accommodation costs.

Places are limited and will be allocated on a first come first served basis.

For more information and to register for this workshop please contact Charlotte Lewis

E-mail: charlotte.lewis@bristol.ac.uk Tel: +44 (0)117 3310799
Upcoming Events (continued...)

Effective parenting and child well-being: Resources for research

1 November, 2011, 12.00-17.00
Council Chamber, Institute of Advanced Legal Studies, Charles Clore House,
17 Russell Square, London, WC1B 5DR

This half-day seminar will introduce longitudinal data resources available for research into parenting and child well-being. It will provide an opportunity for researchers from the third sector, practitioners and those influencing policy to learn about the research resources available that can provide evidence to support policy and practice.

Provisional Programme

12:00-13:00 Registration and lunch
13:00-13:15 Welcome
Peter Shepherd, Centre for Longitudinal Studies, Institute of Education

13:15-14:00 National Child Development Study and 1970 British Cohort Study
Alice Sullivan, Centre for Longitudinal Studies, Institute of Education

14:00:14:45 Millennium Cohort Study
Ingrid Schoon, Department for Quantitative Social Science, Institute of Education

14:45-15:00 Break

15:00-15:45 Avon Longitudinal Study of Parents and Children (ALSPAC)
Eszter Szilassy, University of Bristol

15:45-16:30 British Household Panel Study/Understanding Society
Maria Iacovou, Institute for Social & Economic Research, University of Essex

16:30-17:00 Opportunity for further questions and discussion
17:00 Close

This event is funded by the Economic and Social Research Council as part of the Festival of Social Science 2011