In collaboration with the Centre for Clinical Brain Sciences, the Centre for Cognitive Ageing and Cognitive Epidemiology co-hosted a one-day conference in February 2009 entitled, *Advancing years: current research in cognitive aging and dementia—a multi-disciplinary approach*. The event proved extremely popular with registration reaching capacity weeks before the conference. Around 100 delegates from a range of academic, clinical and commercial backgrounds attended talks from University of Edinburgh and external dementia and cognitive ageing experts on ‘Cognitive ageing: epidemiology and imaging’, and ‘Dementia: problems and solutions in diagnosis and finding new treatments’. It was a full programme, with nine 30-minute talks across the day, and a poster session during lunch. One of the highlights of the day was the keynote address, ‘Dementia epidemiology—insights from the MRC CFAS Study’ which was given by Professor John Bond, Professor of Social Gerontology and Health Services Research at Newcastle University. Centre Directors Professor Ian Deary (CCACE) and Professor Peter Sandercock (CCBS) said, “This has been an extremely successful meeting. It has proved a great opportunity for clinicians and academics to get together and talk about both healthy and diseased cognitive ageing.”

**Awards**

CCACE contributes to success with BBSRC studentships

CCACE member Professor Alasdair MacLullich and geriatrician Dr Gillian Mead, with help from CCACE Researcher/Scientific Administrator Beverly Roberts, have been successful in the BBSRC Targeted Priority Studentships Competition in the area of Ageing. Submitted via the Centre for Cardiovascular Sciences with Centre co-Director Professor Jonathan Seckl as PI, the award is for three fully-funded PhD studentships for take up in the 2009/10 academic year. Some of the proposed topics fall within the CCACE remit. PhD students starting under this programme will join the four new CCACE PhD students who will begin in September 2009.

**Travel award**

CCACE associate member Dr Lorna Houlihan won a travel award from the International Society of Psychiatric Genetics to attend the World Congress of Psychiatric Genetics in Japan in October 2008, where she presented a paper entitled, ‘Candidate genes for cognitive impairments: Do they influence mental ability and cognitive ageing in a normal population?’. This was Lorna’s first oral presentation at this important international genetics conference.

**Stop press: All CCACE members’ strategy meeting**

The CCACE’s annual meeting schedule includes two all-Centre-members’ events. The first of these was the Opening Symposium Research Day last September. The second event takes the form of a Strategy Group Meeting and will be held from 2-5pm on 9th March in 7 George Square. This meeting will provide a forum for Centre members to come together and discuss current new findings and their future research plans, such as grants to be submitted, planned research group output or ideas for cross-Centre group collaborations. All Centre members should attend and are warmly invited to stay for the drinks reception after the meeting.
New Appointments

Statistician
Dr Michael Allerhand began his appointment as CCACE statistician on 1st February 2009. Mike is based in room F4 at 7 George Square. He will provide advice and support to Centre members on statistical methods, conduct analyses, and present methods and results for publication. He is skilled in multivariate methods, including linear mixed effects and structural equation modelling, and is an expert R programmer. He can also provide teaching, tutorials and demonstrations of quantitative methods and statistical programming. He is currently running a course entitled ‘An introduction to R’ which has proven popular, with around 40 individuals registered. Mike is currently working on projects with Centre members in the Human Cognitive Ageing and Cognitive Epidemiology research groups. He is keen to broaden his skills and work in collaboration with members of the Neuroendocrine, Animal Models, Brain Imaging and Genetics research groups. Project proposals for Mike should be sent to Anna Sim in the form of a very brief summary of the background, aims, how the work fits within the Centre’s aims, and an anticipated time-scale for the work.

Brain Imaging Development Technician
Miss Natalie Royle has recently been recruited as the CCACE’s brain imaging development technician. She took up her post on 9th February and will be based at the image analysis lab, in the SBIRC annexe at the Western General Hospital. Natalie is employed jointly by the Centre and the Disconnected Mind project (led by Professor Ian Deary and Professor Joanna Wardlaw). She will work primarily with Maria Valdes-Hernandes on hippocampal segmentation from MRI using data from the Lothian Birth Cohort 1936 study.

Knowledge Transfer Officer and Animal Development Technician
We are in the process of advertising for a CCACE Knowledge Transfer (KT) Officer (55% FTE) and Animal Development Technician. The KT Officer is expected to start in September and will be based in 7 George Square. Their main role will be to work with Centre members in all aspects of scientific reporting, outreach and public relations activities to maintain the Centre’s high profile and good reputation with both the scientific community, the public, policy makers, and industry. An advert for this position will be placed shortly. The Animal Development Technician will work primarily with Dr Joyce Yau in the Endocrinology Unit at the Queen’s Medical Research Institute in the new Edinburgh Royal Infirmary and will be involved in various Centre member projects investigating animal models of cognitive ageing and neural health. Applications have now closed for this position and interviews will take place in due course.

Cross-Centre meeting with the MRC’s CAiTE in Bristol
Around 40 scientists from the CCACE and the Bristol-based MRC Centre for Causal Analysis in Translational Epidemiology (CAiTE) gathered for an informative and lively one-day cross-Centre meeting in January. Hosted by the Bristol team, Centre Directors Professor Ian Deary (CCACE) and Professor George Davey-Smith (CAiTE), co-directors, staff, postdocs and students heard 15 in-house presentations covering cognition and ageing, molecular genetics of quantitative traits, and brain imaging. Topics included imaging techniques for measuring markers of the ageing brain, possible candidate genes for successful cognitive ageing and longevity, the influence of genes on mood and behaviour such as anxiety and depression, and smoking and alcohol intake and their subsequent influence on cognitive ability. Special attention was paid to the valuable human cohort data that each Centre holds and/or collaborates with, and how their use can be optimised. The emphasis of the short presentations was on recent-and mostly unpublished-findings by junior Centre members. Each talk was followed by a lively discussion with the aim of engendering future collaborations between the Edinburgh and Bristol researchers.

This format for discussion was extremely successful. CCACE funds are available for research meetings. If you would like to organise a cross-Centre ageing meeting please send Beverly Roberts your suggestions.

Publications: a small selection from the Centre’s recent large output

BBC memory study
CCACE group leader Professor Robert Logie has recently had a paper accepted for Psychology and Aging. This is the first paper arising from the large memory data set collected via the Internet in collaboration with the BBC. It demonstrates that the Internet is a viable method for collecting cross sectional data from large numbers of people across a wide age range and a range of educational levels. The paper also demonstrates changes in prospective memory compared with changes in different tests of working memory across the adult age range 18-79 years. Logie, R.H. & Maylor, E.A. (in press). An internet study of prospective memory across adulthood. Psychology and Aging.
Paper on delirium and cognitive impairment
A research article recently accepted by the Journal of Neurology, Neurosurgery, and Psychiatry by Dr Laura Brown and Centre colleagues John Starr, Ian Deary and Alasdair MacLullich used an experimental approach to study cognitive deficits in elderly patients with delirium. They compared the delirium patients to groups of cognitively healthy participants and patients with Alzheimer’s dementia and found that the patients with delirium showed specific deficits of visual perception that could not be accounted for by their overall level of cognitive impairment. This is the first paper to show that patients with delirium have cognitive perceptual impairments, and is also one of only a handful of papers to have used neuropsychological methods to study cognition in delirium. This paper therefore makes a valuable contribution to our understanding of the phenomenology of delirium, and also provides impetus for further research of this type. Brown, L.J.E., McGrory, S., McLaren, L., Starr, J.M., Deary, I.J., & MacLullich, A.M.J. (2009). Cognitive Visual Perceptual Deficits in Delirium. Journal of Neurology, Neurosurgery and Psychiatry, [Epub ahead of print].

Are there sex differences in intelligence?
Centre member Dr Wendy Johnson, in collaboration with Centre Director Ian Deary and Dr Andrew Carothers, have a large in press paper in Perspectives on Psychological Science entitled, ‘A Role for the X Chromosome in Sex Differences in Variability in Intelligence?’. It will be published in November this year as a target article with commentaries by Ian Craig, Claire Haworth and Robert Plomin, and Eric Turkheimer and Diane Halpern, with a response to their commentaries by the Edinburgh team. This paper is a companion piece to the same authors’ recently published paper in the same journal, ‘Sex Differences in Variability in Intelligence: A New Look at the Old Question’. The current paper is speculative but does make use of the Scottish Mental Survey data to estimate the proportion of genetic variance in intelligence contributed by genes on the X chromosome under a specific set of assumptions. Constructing the current paper as a target article and having commentaries from top scientists from two ends of the field is a great success for the Edinburgh team. Johnson, W., Carothers, A., Deary, I.J. (in press). A Role for the X Chromosome in Sex Differences in Variability in Intelligence? Perspectives on Psychological Science.

Replication paper on candidate genes and cognition
Following her presentation in Japan, Dr Lorna Houlihan recently published her first primary author paper. The research article, ‘Replication study of candidate genes for cognitive abilities: the Lothian Birth Cohort 1936’ has been accepted by Genes, Brain and Behaviour. Her paper investigated ten candidate genes for cognitive abilities. Previous studies on cognition and illnesses with cognitive impairments have identified SNPs within candidate genes that might influence cognition. She looked for association of these SNPs with cognition and cognitive ageing in over 1,000 Scots, namely LBC1936. None of the SNPs were associated with cognitive ability traits or cognitive ageing in LBC1936 (all P-values > 0.01). Houlihan, L.M., Harris, S.E., Luciano, M., Gow, A.J., Starr, J.M., Visscher, P.M., Deary, I.J. (2008). Replication study of candidate genes for cognitive abilities: the Lothian Birth Cohort 1936. Genes, Brain and Behaviour, 10 [Epub ahead of print].
Teaching/Training
PhD studentships
The Centre has now advertised the first round of our fully funded 1+3 PhD studentships. We have funding for two CHSS and two CMVM studentships this year and we received a good number of applications for projects spanning the six Centre research groups. Successful candidates will start their projects in September 2009. Adverts for the 2010 studentships (1 CHSS and 1CMVM) will be posted in November.

Dates for your diary
Seminar series
As part of its annual seminar series the CCACE will host four seminars in 2009. The first seminar, co-hosted by the SFC Brain Imaging Research Centre, will be given by Professor Alan Jackson of the University of Manchester at 4.30pm on 6th March in 7 George Square. His talk is entitled, 'Vascular to brain interface and the role of imaging'. We hope all attendees will stay for the drinks reception after the seminar. Seminar two is scheduled for 30th April and will be given by Professor Trevor Robbins of the University of Cambridge (title to be confirmed).

Neuroscience Day
Neuroscience Day is an annual day of talks and poster presentations from neuroscientists of all backgrounds at The University of Edinburgh. It is an opportunity for clinicians, researchers and students to meet and exchange ideas in an informal setting. This year the guest lectures are: 'Managing the broken circle of life - how can we stop mitochondrial disease?' by Professor Patrick F. Chinnery, University of Newcastle, and 'How do you find your way?: Spatial representation in the entorhinal cortex and hippocampus' by Professor Edvard Moser, Director of Kavli Institute for Systems Neuroscience. The event will be held from 9.15am-6pm on 25th March at The Royal College of Physicians in Edinburgh. Registration is free but spaces are limited. You can register at www.edinburghneuroscience.ed.ac.uk/neuroscienceday2009.

Brain-storming session—'Ageing: Life long health and well-being'
The triennial Spending Review by HM Government exerts a strong influence on UK research via priorities set by the Treasury for RCUK. Through this mechanism, a number of cross-council research priorities have emerged, including: environmental change, energy, ageing, global security. For the University to be successful in funding bids its researchers need to be aware of research relevant to each of these priority areas. To this end, the CSE College Research Committee are hosting a series of brain-storming sessions, each focusing on a different priority area. Centre Director Professor Ian Deary is chairing the session on ageing, which will consist of a series of 5 minute presentations. The event will be held from 3-5pm on 6th May in the Informatics Forum. Please contact Anna Sim if you would like to present your ageing research.

SINAPSE annual meeting
SINAPSE (Scottish Imaging Network—A Platform for Scientific Excellence) are holding their annual scientific meeting on 17th June at The Royal College of Physicians Edinburgh. The meeting will consist of a full day of keynote presentations by international speakers across topics in human imaging and proffered papers on imaging projects taking place throughout the SINAPSE network. Topics include MR, PET and SPECT, EEG, MEG, image analysis, e-science, multi-centre studies, stroke, dementia, ageing, psychosis, mental health, diabetes, oncology, and vascular imaging. The meeting is open to all staff and students working in imaging, but priority will be given to SINAPSE-funded staff and students. There is a registration fee of £50 for staff and £10 for students. There is no registration fee for SINAPSE funded staff and students. You can register at www.sinapse.ac.uk/sciencemeeting.

Contact and news
If you have any news, events planned, have gained research grants, or published significant papers then please send the details to Anna Sim (ccace@ed.ac.uk) and we shall include it in a future Centre newsletter.

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