Welcome

More news at www.ccace.ed.ac.uk or follow @ccace on Twitter.

Note from CCACE Director Ian Deary

This is an important time for CCACE. We’re well into our ninth year of producing exciting and useful science, and engaging in creative and energetic outreach.

It’s the MRC’s rules that they fund a Centre with a given name and Director for a maximum of two five-year periods. Our second quinquennium ends on 31 August 2018, as will my Directorship of CCACE (though I will still be here long after that, not least as Director of the Lothian Birth Cohorts). Therefore, I have been working closely with Professor Andrew McIntosh since September 2016 in order to shape a new MRC Centre application with Andrew as its Director-designate.

Andrew’s made this easier by obtaining an office here in the Psychology Department (Room S2 in 7 George Square), and some of his team are moving here too. Andrew will have discussed his plans for an evolved Centre with many of you already. He has an exciting cluster of ideas and a scientific narrative about human psychological resilience and how we at the University of Edinburgh are ideally-placed to form a world-class new Centre to understand it.

I recall the help I obtained from many of you when we made our first CCACE application, and again at the very successful renewal. I strongly encourage you to make these contributions again to Andrew as he leads us in the application for an MRC ‘Centre for Life-long Psychological Resilience’.
A third quinquennium?

The MRC has invited an application for a new Centre to develop and extend the work of CCACE over the last 10 years.

The application is being led by Andrew McIntosh, Director Designate of CCACE, with a team of investigators from Psychological and Biomedical Sciences. The aim will be to better understand why some people are more resilient to the effects of ageing and life events on physical and mental health than others. The working title for the Centre will be the ‘Centre for Lifelong Psychological Resilience”.

The centre will accomplish its aims by supporting world-leading science in the fields of cognitive ageing, personality and mood research. We will form and extending collaborations between psychology, clinical psychology and medicine – creating a community of researchers focussed on resilience research from a variety of backgrounds and disciplines.
Welcome

Lothian Birth Cohort 1936 to appear on BBC1, again!

Bill Turnbull, star of BBC’s Breakfast TV, Strictly Come Dancing, Classic FM etc., came to the Psychology department on 23rd January with a BBC film crew to find out about the Lothian Birth Cohort 1936 (LBC1936)/Disconnected Mind study.

BBC1 are planning a series in the Spring called ‘Holding back the years’. Each programme will feature a celebrity revisiting a place that means a lot to them, and the programmes will have a focus on the processes of human ageing.

Mr Turnbull was at the University of Edinburgh in the 1970s (he shared a flat with Gordon Brown for a term!), and so his programme is based here. It was natural that, to find out more about ageing, and with an Edinburgh locus, he and the BBC filming team visited the LBC1936.

A busy afternoon’s filming was filled with his interviewing LBC1936 Director Ian Deary, speaking with about a dozen of the LBC1936 participants, and seeing and taking part in some cognitive testing.

Look out for the series, especially the Edinburgh-based Bill Turnbull programme in a few months’ time.

Ian said, “Mr Turnbull got on really well with the dozen LBC1936 members. My biggest surprise was when he asked them if they enjoyed being 80. All of them did!; and few wanted to be younger again.”
Welcome back Anna and hello Iona

We are very pleased to welcome back Anna Sim (on right) as Administrative Secretary, to cover Denise Munro’s maternity leave.

We are also pleased to welcome Dr Iona Beange (on left), who has taken over from Robin Morton as Knowledge Exchange and Impact Officer for CCACE.

Iona has a PhD in Neuroscience, and has worked in Public Engagement for over 10 years, doing everything from creating and running school workshops, to running Midlothian Science Festival. Her most recent post was in as Communications Officer for an EC FP7 project called ICONZ.

She is here to assist with any aspect of Knowledge Exchange - from the impact section of grants, through press and media coverage, to schools, festivals or events (and everything in between).

We look forward to working with them both.
Avoiding battered brains and bodies in old age

CCACE's 2016 St Andrew's Day lecture was given on 29th November by Professor Rudi Westendorp of the University of Copenhagen. His erudite, witty and well-received lecture covered the demographic change in ageing, the reciprocal influences of body and mind through the life course, and even cognitive epidemiology: a perfect fit, in fact, for a CCACE audience.

The audience was challenged as well as charmed by Rudi, arguably the most dapper of CCACE's invited speakers. For example, we were asked to consider the separate axes of frailty and vitality, i.e. that one could be vital, productive and imaginative though frail. And we were asked to address the complexity of ageing; how, for example, high cholesterol or blood pressure might be harmful at one age, neutral at another, and protective at yet another age.

For those whose appetite was stimulated by this superb tasting menu of a lecture, and for those who missed it, we recommend Professor Westendorp's recent book, *Growing Older Without Feeling Old*.

New 3T Brain Imaging Centre 2 Scanner

We are delighted to announce that the 3T Siemens Prisma MRI (neuro-optimised) scanner is now live, located at the RIE.

This image is the first tractography image reconstructed from diffusion tensor imaging, and showing nerve connections between different parts of the brain, combined with high definition structural images showing the hippocampus (red objects) where memories are formed and stored.
Recruitment for HAGIS gets underway

The Healthy AGing In Scotland (HAGIS) pilot study, which is based at the University of Stirling, aims to recruit 1000 Scottish participants aged 50 years and older. This study wants to understand the health, social and economic circumstances of middle-aged and older adults living in Scotland. Interviewers from Facts International, a fieldwork company, will go to randomly selected households and will invite eligible individuals to take part.

CCACE director Professor Ian Deary, and Ms Chloe Fawns-Ritchie, the Human Testing Development officer at CCACE, have been working with the University of Stirling to develop a short cognitive assessment for inclusion in the HAGIS study. In September, Chloe also provided Facts International interviewers with training on the use of cognitive tests. Data collection for the HAGIS pilot is expected to be completed by summer 2017 and the HAGIS project is now trying to secure funding to be able to increase the sample size to at least 6000 participants, with plans to follow up these participants every two years. This would allow Scotland to join a list of other countries who already carry out similar longitudinal ageing studies, including the USA, England, and Ireland. Find out more about HAGIS at www.haggis.scot
LBCs and CCACE to inform Government policy

The findings from the Lothian Birth Cohort 1921 and 1936 studies, and CCACE expertise, were called upon by the UK Government.

On 23rd November 2016, at the Royal Society in London, the Government Office for Science held a small invited seminar on, "Evidence and Options for Preserving Cognition Through Life". It was Chaired by Sir Mark Walport, the Chief Scientific Advisor to HM Government. There were 11 invited scientists at the seminar, two of them from Edinburgh's CCACE: Ian Deary and Richard Morris. There were representatives from the Government's Departments of Health, Work and Pensions, Education, and Cabinet Office.

"It was a super meeting", said CCACE's and the LBC's Director Ian Deary.

"It took cognitive ageing seriously as a scientific and policy issue and was asking two big and sensible questions: what can be done through the life course to enhance and preserve cognitive functions?, and are there interventions in older age that can boost and retain thinking skills? I think I ended up talking a bit more than I'd planned to, and I think that is because the Lothian Birth Cohort Studies and the CCACE environment have produced so many findings relevant to these questions, especially the former. I found the meeting stimulating because the scientists were presenting and arguing about what was the best evidence, and the Government representatives were sifting that discussion for things that were useful to policy".

The seminar was the start of a process, part of which will be to collect the best evidence about healthy cognitive ageing, and explore how it can be put in to practice.
The Fondation Leducq has awarded Professor Joanna Wardlaw, and six collaborators from across Europe and North America, a 5 year grant to study the role of the perivascular space in cerebral small vessel disease (SVD). SVD is a prevalent disorder that is responsible for almost half of dementias, alongside a large proportion of stroke cases. Patients develop a variety of clinical presentations and the pathophysiology is currently unknown. However, MRI imaging has recently revealed that enlargement of the perivascular space is a common pathological feature of this disease and may be linked to dysfunction of the blood brain barrier, hypoxia and eventual loss of white matter seen in these patients. Using a combination of preclinical and clinical research, this transatlantic study aims to further our understanding of the pathophysiology of SVD by addressing a series of questions, including whether glymphatic fluid stagnation in the enlarged perivascular space is involved. Understanding the mechanisms behind the hallmark features of SVD may lead to the identification of therapeutic targets.

Age UK’s Chief Scientist, Professor James Goodwin, is also quoted discussing how to improve the modifiable factors influencing healthy ageing. You can read the telegraphs article at: www.telegraph.co.uk/wellbeing/health-advice/brain-gain-10-ways-to-think-yourself-younger

Successes

Disconnected Mind project featured in the Telegraph

On the 8th November the Telegraph newspaper ran a story on healthy cognitive ageing and referenced genetic and lifestyle influences on ageing evidenced in the disconnected Mind Project. The project found a quarter of brain ageing is influenced by genes, while three-quarters are dependent on modifiable lifestyle choices.

Joanna Wardlaw receives Fondation Leducq award

The Fondation Leducq has awarded Professor Joanna Wardlaw, and six collaborators from across Europe and North America, a 5 year grant to study the role of the perivascular space in cerebral small vessel disease (SVD).
CCACE reports on SES-health associations using UK Biobank data

A small part of the association between health and socio-economic status might be due to shared genetic influences, a new CCACE paper finds.

Using genetic and other data on over 100,000 people in the UK Biobank sample, a CCACE team, led by Dr David Hill, found that 21% of the variation in an area-based deprivation measure and 11% of the variation in household income could be accounted for by common genetic variants. They further found that these measures had many genetic correlations with physical and mental health, and with cognitive functions.

David Hill said, "As expected, the large majority of people's differences in area-based deprivation and income appeared to be environmental in origin. There were small genetic contributions to both, which might arise owing to shared genetic influences with factors such as ill health, cognitive ability, and personality. The individual genetic influences on socio-economic status appeared to be miniscule."

David and the team emphasised CCACE's mission to understand and address inequalities in health, and they also understand that finding any, even a small, genetic contribution to these social factors is surprising.

A new paper from the Lothian Birth Cohort 1921 suggests that people who engaged in more leisure activities in their 40s and 50s scored better on memory and thinking tests when they were aged 79. Furthermore, people who were more physically active in later life were then more likely to experience less decline within old age. The study therefore suggests that different types of activity might affect thinking skills in different ways over a person’s life.

While the LBC1921 study began when the participants were aged 79, the lifetime activity data were collected using retrospective questionnaires. Participants provided details of their activities at ages 20-35, 40-55 and 60-75 years.

Analysis revealed that the level of leisure activities in midlife explained about 6 per cent of their performance on the thinking and memory tests at age 79, while physical activity seemed to account for about 12% of the change in thinking skills across old age.

Dr Alan Gow, Associate Professor at Heriot-Watt University who led the analysis, said: “These latest findings add to the growing evidence that being more engaged in leisure activities throughout midlife might be associated with better thinking skills in later life. For those in their 70s or beyond, another important message seems to be that keeping physically active may be an important behaviour in terms of reducing cognitive decline.”

That was the title of a 'Forum' held on 16th September at the Academy of Medical Sciences in London. CCACE Director Ian Deary was invited to give one of the keynote talks. Ian was invited to summarise how cognitive function and personality were associated with health and longevity.

"It was a superb meeting," said Ian, "with several international speakers covering basic to clinical science aspects of the what and why of differential ageing trajectories. It was conducted under the Chatham House Rule of non-attribution, which made for a helpful open discussion focussed on what the science can indicate that would help us to make ageing a better experience for more people."

The forum report can be downloaded from the Academy's website.

The Forum's aims, as stated by the Academy, were, "The meeting will aim to explore the scientific developments in ageing research, and how we can utilise this science to better predict trajectories of ageing. The morning session will focus on the current 'state of play' in ageing research, and the factors that influence trajectories of ageing and health, to be chaired by Professor Tom Kirkwood CBE FMedSci. In the afternoon session chaired by Sir John Pattison FMedSci, participants will explore this science in the context of its implications for predicting longevity and health, and how the health and social care system can begin to translate and utilise this research."

Stuart Ritchie speaks to Edinburgh Ecumenical Friends

Stuart Ritchie gave a talk on cognitive ageing and the Lothian Birth Cohorts to Edinburgh Ecumenical Friends, a church group of all denominations who meet at the Parish Church of St. Cuthbert on Lothian Road. The talk was well-received, with a long question-and-answer period covering many ageing-related topics.
Alan Gow speaks in UK and USA

In October, Alan Gow was invited to speak at Age UK’s “It’s Never Too Late” Conference. The meeting focussed on the benefits of physical activity for older adults and was held at the Oval, a very apt venue given the topic.

“I spoke specifically about physical activity and brain health using examples from the LBC1936 study” says Alan Gow.

In the same week, Alan was invited to participate in the Global Council for Brain Health (GCBH) Issue Specialist Meeting: Social Engagement and Brain Health (Age UK, London, 20th-22nd Oct 2016). GCBH is an independent organization, created by AARP, in collaboration with Age UK, to provide trusted information on how all of us can maintain and improve our brain health. The meeting was hosted by Age UK’s Tom Wright and moderated by Sir Martyn Lewis, best known as anchor of the BBC news. Chief Scientist James Goodwin and his Age UK colleagues organised a very successful meeting and a consensus report was drafted by AARP staff during the meeting and will be released early next year.

In November, Alan delivered a presentation on ‘Activity and Personality as potentially cognitively protective factors: The Lothian Birth Cohort 1936” at the Gerontological Society of America Annual Scientific Meeting in New Orleans (Louisiana), USA.

Alan also delivered another ‘Great British Brain Off presentation, this time at the Living Well in Later Life Conference, Hamilton, UK on 2nd December 2016.
Mike Allerhand invited to speak at F-ESN Summer

CCACE’s Statistician, Dr Mike Allerhand, was invited to speak at this year’s Federation of the European Societies of Neuropsychology (F-ESN) 2nd Summer School at Freie Universität Berlin on 29 August to 1 September. The theme of the meeting was "Science in the Ward". The attendees were doctoral and post-doctoral researchers and clinicians from across the EU and beyond.

The presentations given by leading experts in the field were broadly focussed on issues of neurological and neuropsychological assessment and diagnosis. In particular there was a focus upon the assessment of deficits associated with frontal regions of the human brain.

Press Release

Mediterranean diet could reduce brain shrinkage

Dr Michelle Luciano received wide media coverage for her journal paper on the Mediterranean diet and brain shrinkage, which was based on brain scans of 401 members of the Lothian Birth Cohort.

The study found that those who ate a diet rich in fresh fruit, vegetables and olive oil had healthier brains than a similar group with different eating habits. In particular, they suffered less brain shrinkage than those who regularly ate meat and dairy products.

Coverage included The Telegraph, BBC Scotland, NBC News and The Irish News.

Alan Gow receives 2nd Public Engagement Award

Following the success of a Public Engagement Award from Heriot Watt University, CCACE member, Dr Alan Gow, has received the British Psychological Society’s Public Engagement and Media Award. The award is given in recognition of engaging the general public in high-quality research, or the impact of Psychology, by the BPS Education and Public Engagement Board.

Alan has been involved in several recent high profile public engagement events, including the 2015 Edinburgh Fringe’s, “The Great British Brain Off”, as part of the Edinburgh Beltane’s Cabaret of Dangerous Ideas, and BBC’s Radio 4 series, “How to have a better brain”, presented by Sian Williams. Alan has also addressed several notable conferences and meetings and worked on the British Academy-funded, ‘Rewrite the Headlines’ initiative for school children and undergraduates.

Hobbies may help thinking in older age

Alan Gow received press coverage of his study into lifecourse activity in adulthood which made use of data from the Lothian Birth Cohort 1921. The study found that those in their 40s and 50s who were more engaged with hobbies scored better on memory and thinking tests as they approached 80. The study also showed that people who were more physically active in later life were more likely to stay mentally sharp as they grew older.

The University issued a press release, which was picked up by both online and traditional journalists including The Sunday Herald, The Sun and The Evening Times.


Congratulations

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21st February 2017  
Prof David Bell, Professor of Economics, Stirling University  
5pm, Room F21, 7 George Square (followed by a drinks reception).  
Open to all.

27th April 2017  
Prof Kaarin Anstey, Director of Centre for Research on Ageing, Health and Wellbeing, Australian National University  
5pm, Room F21, 7 George Square (followed by a drinks reception).  
Open to all.

6th June 2017  
Prof Robert S. Wilson, Rush Alzheimer's Disease Centre, Rush University, USA  
5pm, Room F21, 7 George Square (followed by a drinks reception).  
Open to all.

5th September 2016  
CCACE 10th Annual Research Day.  
Keynote speaker: Prof Andrew McIntosh, CCACE Director Designate  
12noon-5pm, Room F21, 7 George Square, Edinburgh EH8 9JZ (preceded by lunch and posters, and followed by a drinks reception).

28th November 2017  
St Andrews Day Special Invited Seminar  
Prof Paul Matthews OBE, Division of Brain Sciences, Imperial College London  
5pm, Room F21, 7 George Square (followed by a drinks reception).  
Open to all.
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