Welcome to the latest edition of The Disconnected Mind newsletter. In the last couple of months, the team have been taking our most recent progress and results to a number of national and international conferences, and you can read more about these meetings here. There’s also news about the Research into Ageing Grantholders’ Conference in September, where we will be reporting the progress of the past year to our friends and colleagues at Age UK.

I hope you’ve had a chance to look through our Disconnected Mind website (www.disconnectedmind.ed.ac.uk) which was launched in the last newsletter. If you have any items for inclusion in the website or the newsletter, or suggestions for improvements, please just get in touch.

Welcoming Age UK to the DM
We were very happy to recently welcome some of our colleagues at Age UK for a tour of The Disconnected Mind. In June, Tom Wright, CEO of Age UK, visited the project to meet with the research team and get firsthand experience of the ongoing work. He enjoyed a guided tour of the research facilities across the various components of the project, and discussed the most recent progress with the lead investigators. Tom was joined on his tour by James Godwin, Head of Research, and Rachel Barber, Executive Advisor.

After his visit, Tom said, "the visit was a great opportunity to learn more about the Disconnected Mind project and it was a pleasure to meet all those involved. I'm very aware that one of our greatest fears as we age is that our minds may fail us. Understanding the causes and consequences of cognitive decline is truly one of the great challenges for modern science. The project is ground breaking, working from and developing a unique set of data. I hope that the insights from it will be of huge benefit for generations to come".

Tom Wright, CBE, Chief Executive of the Age UK Group incorporating Age Concern and Help the Aged.

Amanda Ball (Group Marketing Director) and Elizabeth Rose (Major Gifts) were also given a tour of the project in July, and we look forward to working closely with them over the coming years. Elizabeth has some very exciting ideas in the planning stages for current and future donors to the project, and you'll hear about those, and be part of some too, as they come together.

For more information on Age Concern and Help the Aged (being brought together to form Age UK), please check out their websites: www.helptheaged.org.uk www.ageconcern.org.uk

New faces in the DM team
Since the last update, Dr Philip Holland has joined the team.
Appointed as a Research Fellow to The Disconnected Mind in March 2009, Philip completed his PhD in 2006 at the Institute of Neurology, University College London, investigating the underlying pathophysiology of migraine. He has recently returned to the UK from a postdoctoral position at the University of California San Francisco, where he developed interests in pain, cerebral blood flow and cortical hypoperfusion. Philip will utilise his in vivo experience to strengthen the group’s existing experience and to further develop in vivo brain imaging techniques to measure white matter changes, and electrophysiology to measure functional changes. Welcome to the DM!

Out and about with the DM team
Over the summer months, a number of the team have been involved in national and international conferences and events where they have been disseminating news and updates from The Disconnected Mind.

Firstly, Ian was a guest speaker at the Cheltenham Science Festival in June where he summarised the follow-ups of the Scottish Mental Surveys, and the continuation of this work within The Disconnected Mind. Then in July, Dr Maria Valdés Hernández attended Medical Image Understanding and Analysis (MIUA), an image processing conference, at Kingston University London. Maria presented a poster and methodological image processing full paper entitled “Automatic assessment of iron deposits in MR brain images”, co-authored with Paul Armitage and Joanna. The paper described the methods being developed and tested by Maria to assess the deposition of iron in the brain, using the scans from the LBC1936 participants. The paper will appear shortly in the peer-reviewed Proceedings of the Thirteenth Annual Conference MIUA (check http://www.miua.org.uk for more information).

A number of the team also attended ISSID ’09 (the biennial conference of the International Society for the Study of Individual Differences), which took place in Evanston (near Chicago) in July. Ian gave a keynote address entitled “Why do intelligent people live longer?” and Dr Lars Penke convened a symposium called “Individual differences in the elderly: The Lothian Birth Cohort Studies”. In the symposium, Lars was joined by Dr Michelle Luciano, Dr Wendy Johnson and Dr Alan Gow. Incidentally, Lars was presenting data linking the imaging work of Maria (described above) and Dr Susana Munoz Maniega to the cognitive measures available. He’s recently submitted a couple of papers on this work which we will hopefully be able to report here very soon.

Finally, 3 researchers from The Disconnected Mind team based within 1 George Square, Dr Jill Fowler and PhD students Aisling Spain and Robin Coltman, attended the International Conference on Alzheimer's Disease (ICAD) in Vienna, attended by almost four thousand delegates. They presented some of their latest work on the development of animal models which may be used to investigate the effects of white matter damage on cognition. The two posters were entitled “Chronic cerebral hypoperfusion causes myelin damage and is associated with a selective impairment in working memory” and “Selective axonal damage and short term spatial reference memory deficits after mild fluid percussion injury in mice”. Both posters attracted attention from
researchers with a wide variety of interests from all over the world, and The Disconnected Mind generated a lot of enthusiasm from both basic scientists and clinicians involved in age-related research. Jill, Aisling and Robin felt that attending the conference was worthwhile and look forward to presenting further data soon.

If you’ve been involved in a conference recently, or you are due to present something in the coming months, please let me know so I can include it here (and if you have a picture too, even better!).

Research into Ageing Grantholders’ Conference
This year’s RiA Grantholders’ Conference is taking place on September 2nd and 3rd, at Aston Business School, Birmingham. We’re delighted to have been able to put together a detailed DM submission and are lucky enough to have been given the opportunity to present a number of talks in addition to a broad range of posters. Details of our full submission can be found at the end of the newsletter.

Everyone who is preparing a poster or talk should have received the DM templates for this. If you haven’t, please get in touch. The RiA conference is
always a very interesting meeting, and we hope those attending for the first time are looking forward to it. It will also be a good opportunity to catch up with our colleagues at Age UK.

DM meetings and diary dates
The next DM PI meeting will be held on 24th August, 4.00pm at SBIRC. All items for the agenda should be forwarded by the end of the previous week.

The next full DM team meeting will be held on Friday 18th September, in 1 George Square. This will follow a similar format to the last team meeting, with a couple of talks of about 15 minutes, followed by a number of short updates across the various aspects of the project. You will hear shortly if we would like you to prepare something for the meeting. After the presentations, there will be time to ask questions during an informal get together. Put the date in your diary now.

Finally, there will be visits arranged for potential donors over the coming months which we hope you will be able to help out with. You’ll hear more about these as they are planned, but they will mostly follow the same itinerary as those we’ve hosted before.

Also, if you have any news that you would like included in future newsletters, including papers in press, conference presentations, etc., please forward it to Alan at the address below.

Alan Gow
Alan.Gow@ed.ac.uk; 511685
July 2009

RiA Conference submission
As mentioned above, the DM submission to this year’s Grantholders’ Conference covers our progress on all aspects of the project over the past year. Most of you will already have received the programme for the 2 day conference in which we have been given a series of talks in a Disconnected Mind session, which Iain will chair. This will include Dr Alan Gow summarising some of the work related to life-course predictors/socioeconomic factors, Dr Lars Penke on brain imaging, followed by Dr Lorna Houlihan on genetics, and finally Dr Karen Horsburgh will discuss the work from the animal studies. The content of each of these presentations will cover a number of the abstracts submitted. In addition, 2 further talks in other sessions will feature work from the DM: Ross Henderson will describe some work analysing the retinal microvasculature as assessed by images taken during the LBC1936 clinical assessment in ‘The eyes have it’ session; and Dr Michell Reimer will be speaking in the ‘Brain damage and repair’ session, summarising some of the recent work looking at white matter damage at the cellular level.

The titles of all the posters we’ll be presenting are also listed below, sorted according to the different areas covered. If you’d like to know more about any of these, the abstracts are available in the secure area of the DM website (in the Conference Presentations folder, accessible to the research team only – please get in touch if you have any difficulty accessing this area). For those taking a poster, remember there are prizes to be won!

In the next issue:
Latest progress on the DM
News from the RiA conference

www.disconnectedmind.ed.ac.uk

The Disconnected Mind – July 2009
Research into Ageing Grantholders’ Conference:
The Disconnected Mind Posters

1) The Disconnected Mind (Overview)

LBC1936

Genetics
1) The Lothian Birth Cohorts-Identifying the genetic contribution to cognitive ageing
2) Variation in the longevity genes are associated with cognitive abilities
3) A genome-wide association study (GWAS) of non-pathological cognitive ageing
4) Genome-wide association of personality and psychological distress traits in the LBC1936

Phenotypes
1) Placing Inspection Time, Reaction Time, and Perceptual Speed in the Broader Context of Cognitive Ability: The VPR Model in the Lothian Birth Cohort 1936
2) Caffeine consumption and cognitive function at age 70: the Lothian Birth Cohort 1936 Study
3) Quality of life in the Lothian Birth Cohorts of 1921 and 1936 (The Disconnected Mind): structure, determinants and outcomes
4) Prospective Evaluation Of Macular And Parapapillary Morphology And Their Association With Cognition In Childhood And Old Age

Imaging
1) Structural MRI Analysis of the White Matter in the Ageing Brain by MCMxxxVI
2) Tract-specific white matter integrity and cognitive ability in youth and old age in the Lothian Birth Cohort of 1936
3) Subcortical iron depositions as a biomarker of general cognitive ability and age-related cognitive decline
4) Magnetization Transfer and Spin-Lattice Relaxation Time (T1) Measurements of White Matter Hyperintensities in the Lothian Birth Cohort 1936

Animal and model systems

Model systems
1) Temporal evolution of changes in white matter components induced by chronic cerebral hypoperfusion
2) The Disconnected Mind: Varying severities of chronic hypoperfusion on the development of Alzheimer’s disease pathology
3) Investigating the effects of chronic cerebral hypoperfusion on spatial learning and memory in mice

Imaging
1) Translating Human MRI to Rodents for the Disconnected Mind Project
2) Imaging white matter pathology in a mouse model of chronic cerebral hypoperfusion

Proteomics and Cellular imaging
1) Functional network analysis enhances interpretation of proteomic data in apoptosis
2) Proteomic analysis of cell death in a rat hypoperfusion model (BCCAO)
3) White matter damage at the cellular level after chronic cerebral hypoperfusion: a confocal laser scanning microscopy study