



The Cotswold Manor Estate. Photo credit: Isabelle Read

Please get in touch with contributions you would like to see published in this newsletter at
OxDARE@psych.ox.ac.uk

Contents

News	2—3
Researcher Profiles	4—5
Research	6—7
Current Studies	8
Upcoming Events	9—10



Oxfordshire resident, Dr. Carolyn King, has become the 1000th volunteer for one of the world's leading dementia prevention studies.

The European Prevention of Alzheimer's Dementia (EPAD) aims to identify treatments that focus on the very early stages of the disease to stop it in its tracks or slow it down.

Almost 50 million people worldwide live with dementia today and this is set to rise to 100 million by 2050. It is now the leading cause of death in the UK. Yet there have been no new drugs to treat this disease for almost 20 years. EPAD hopes to change this. Dr Vanessa Raymont, Lead Investigator for EPAD's Oxford site, says *"This is an amazing time in Alzheimer's disease research. Within the next few years it is likely that we will begin to provide programmes that reduce people's risk of developing dementia altogether"*.



Dr Carolyn King,
1000th EPAD volunteer

The Oxford trial site is one of 38 across Europe; they aim to recruit 3,000 participants to the study. Participants are 50 years or more, healthy or with mild memory problems. Participation involves 3 or 4 visits in the first year for procedures such as an MRI brain scan, blood, saliva and urine samples as well as memory and cognition tests. Subsequent checks are run annually. Drug trials will begin in 2019.

Dr. Carolyn King says *"I feel that I should do as much as possible to help in the search for more understanding of how and why such a devastating disease develops. The EPAD study is wide-ranging and I'm pleased to be the 1000th participant – I hope there will be many more volunteers"*.

EPAD

European Prevention of
Alzheimer's Dementia Consortium



Anyone interested in volunteering can visit

<https://www.oxdare.ox.ac.uk/become-a-friend>

or contact the Oxford team directly on 01865 283806

To find out more about EPAD visit

<http://ep-ad.org/>

Last month, The Wellcome Centre for Integrative Neuroimaging brought together clinicians and researchers from the University of Oxford for its 'Neurodegeneration Research Day'. Talks around the challenges of ageing and dementia included the latest learnings from large population studies through to studies of cells.



Dr Natalie Connor-Robson of the Department of Physiology, Anatomy and Genetics revealed what stem cells can teach us about Parkinson's disease. Dr Andrey Kormilitzin of the Department of Psychiatry, described how NHS electronic patient records can be used for innovative dementia research. Deidentified information on millions of real-world patients can be mined using analytical tools to provide novel perspectives on care and treatment in Alzheimer's disease. And Dr William Clarke of the Nuffield Department of Clinical Neurosciences explained how a UK network of high-strength MRI scanners can provide new insights into dementia by producing incredibly detailed images of brain structures affected by neurodegenerative diseases. Ongoing collaborative work aims to exploit the clinical potential of these machines.

DPhil (PhD) student Vaanathi Sundaresan won the poster prize for her work on advanced computer algorithms that automatically identify brain lesions on MRI scans. In the future this may reduce the burden on doctors who typically have to manually identify such lesions.

Professor Clare Mackay of the Oxford Centre for Human Brain Activity delivered a keynote speech on what is next for neurodegeneration research in Oxford. This includes a new Brain Health Centre, designed to improve patient access to high quality assessments and research opportunities.

Article credit: Clare O'Donoghue

Researchers learn collaboration by cooking



Twenty OxDARE researchers from the Translational Neuroimaging team gathered at a beautiful countryside estate near Bampton in Oxfordshire for a "nourishment" themed group retreat. Isabelle Read, Ashridge consultant, put the researchers through their paces with a range of activities designed to improve collaboration, presentation skills and career development decisions.

The highlight of the day was a team challenge to create a 3 course meal; it certainly made the teams appreciate the benefits of collaboration!

Article credit: Jasmine Blane

Researcher Profiles

In this section of the newsletter, we get to know the OxDARE scientists behind the research, including what motivates their interest in research and their favourite things to do in Oxford. Here we speak to Dr Clare O'Donoghue, Shona Forster and Amy Chinner.



Dr Clare O'Donoghue

Post-doctoral researcher; BRC Research coordinator
Translational Neuroimaging Group
Oxford Centre for Human Brain Activity, Warneford Hospital

Q. Why did you decide to get involved in ageing and dementia research?

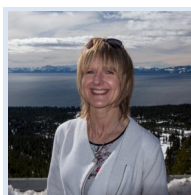
Clare: In the final year of my undergraduate psychology degree, I had a lecture on ageing and dementia and was instantly fascinated. In particular, I was fascinated by the variability in how older adults age, with some showing marked decline in memory and other cognitive skills, whilst others do not show these declines. The lecture was given by Prof Clare Mackay who I eventually completed my DPhil (PhD) with on that very subject, and we still work together now!

Shona: I chose to support the work of EPAD because I'm interested in the evolving evidence around lifestyle as a modifiable risk factor for dementia. I count myself privileged to be able to immerse myself in the emerging science here at Oxford University while performing my public engagement role.

Amy: I have always been interested in biology, but it was reading "Phantoms in the Brain" by V. S Ramachandran that convinced me to start studying the brain and all its amazing (and sometimes devastating) outputs. After graduating with a psychology degree from Cardiff University, I decided to keep pursuing biological psychology and got my first job working for the Brains for Dementia Research study in Bristol. This experience of hands-on ageing and dementia research, including brain donation, inspired me to move to Oxford to work on the hugely exciting new EPAD project (which is where I still am today!)

Q. What are your main research interests?

Clare: My research broadly focuses on how we can help older adults preserve their cognitive skills in later life. In my PhD, I predominately used MRI brain scanning to try to understand what brain characteristics enable some older adults



Shona Forster

Public Engagement & Communications, EPAD
Department of Psychiatry, University of Oxford

retain very good cognitive abilities. I also study things that may indicate in currently healthy older adults an increased risk of decline and dementia, such as genetic, cognitive or brain characteristics. This research will hopefully inform how we may be able to help all older people preserve cognitive skills in later life.

Shona: OK, so I'm not currently a scientist, but I'm passionate about the impact of lifestyle choices on chronic disease. As a Personal Trainer and Nutritional Therapy student, I am interested in what individuals can do to minimise their health risks and enable the NHS to make the best use of its precious budgets.

Amy: The research I currently work on mainly focuses on the earliest stages of dementia, often before symptoms have even begun. I hope that through developing our understanding of the factors effecting brain health throughout the lifespan, we can move towards preventing the development of the disease.



Amy Chinner

OxDARE Research Assistant

Department of Psychiatry, University of Oxford

Q. What is your favourite activity to do in Oxford, during your free time?

Clare: During my free time, I love going to the cinema (Oxford has great art house cinemas!) and driving in the beautiful countryside surrounding Oxford.

Shona: I don't live in Oxford so I still appreciate it as a tourist. I particularly love the diversity of the city which means I can fit all my favourite activities into one day; walking by the river, wandering around the beautiful public buildings and making frequent coffee stops at Oxford's fabulous cafes.

Q. Do you have any recommendations for a book/ movie/ holiday?

Clare: I'm really enjoying the Cormoran Strike crime novels by Robert Galbraith (pseudonym of JK Rowling). I love books set in London!

Shona: As a hiker who looks for something a bit different, I'd certainly recommend this year's holiday in Kyrgyzstan. Its nomadic history and epic landscapes made a lasting impression.

Amy: I would thoroughly recommend "Brain on Fire: My Month of Madness" by Susannah Cahalan for an amazingly personal insight into neurological illness. Also of course I have to recommend V.S Ramachandran—where would I be otherwise!?

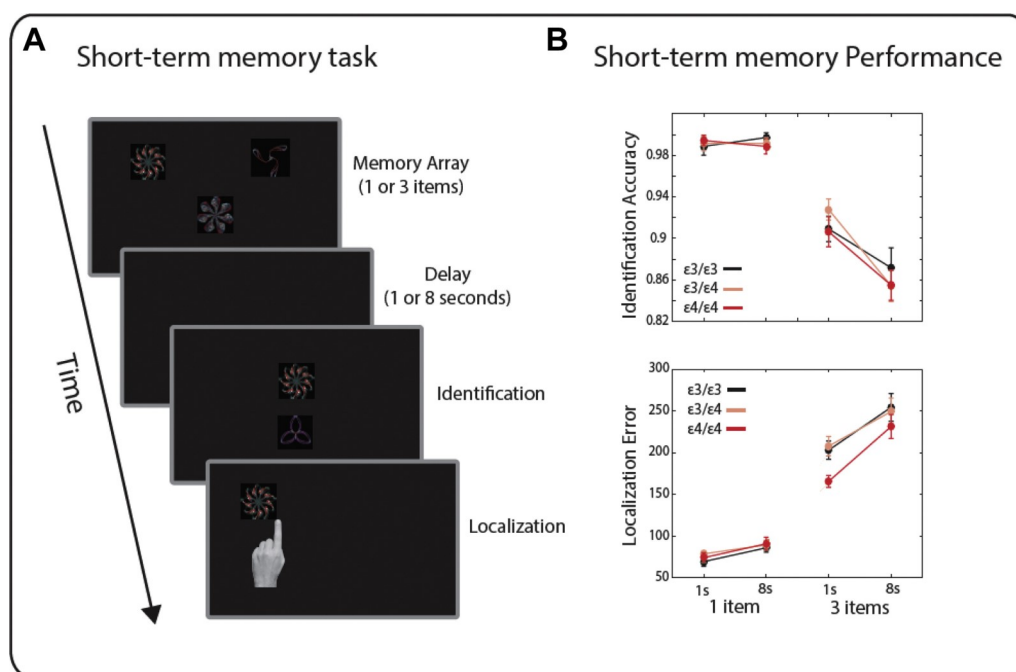
Newly developed, computer-based memory tests can provide a more comprehensive profile of memory performance in individuals at risk of developing Alzheimer's disease (AD).

In this study, a group of older adults with the apolipoprotein-E (APOE) $\epsilon 4$ gene - which is the highest genetic risk factor for AD - underwent short- and long-term memory tests. They were compared to a group of age-matched healthy control participants.

For the memory tests, participants were presented with coloured objects on the screen and were asked to remember their identity and location. After a delay, they were presented with two objects, one previously seen and one new. Participants were instructed to pick the object previously seen and drag it to the location they remembered it to be. The memory delay for the short-term memory task lasted for a few seconds while the long-term memory delay was 20 minutes.

Results showed at risk participants performed worse in the long-term memory test. Paradoxically, however, we found superior short-term memory performance in individuals at risk of developing AD.

This knowledge aids our ability to develop more sensitive tasks to detect AD at its earliest stages.



The full paper can be found in the journal of Neurobiology of Ageing (<https://www.sciencedirect.com/science/article/pii/S0197458018303427>)

Article credit: Dr. Nahid Zokaei

Research Alcohol and the brain

The Whitehall II Imaging research group at the University of Oxford is using cutting-edge brain scanning methods to investigate how lifestyle factors like diet and exercise can influence memory and brain function in older adults. Its work on the effects of alcohol challenge the suggestion of some previous studies that light-to-moderate drinking is harmless and may even protect against dementia.

In the study published in the *British Medical Journal* (1), the authors measured the alcohol intake and cognitive performance in 550 people over the span of 30 years. At the end of this period, participants received a brain MRI scan when they were over 60 years old.

Compared to abstainers, people who reported moderate (14 - 21 units per week) and high levels of drinking (over 30 units per week) were more likely to have a smaller hippocampus, a brain region involved in memory. They also had poorer white brain matter structure.

Moderate-to-high drinkers experienced faster declines in performance on a lexical fluency test over the 30-year period than people who did not drink. For the lexical fluency test, participants are asked to name as many words as they can that begin with a given letter within a minute. The level of alcohol consumption did not affect performance on other tests of short-term memory or semantic fluency.



These results can have important public health implications and support the recent reduction in alcohol guidance in the UK.

Article credit: Dr Sana Suri, postdoctoral researcher with the Whitehall II Imaging Study at the University of Oxford. Sana is a member of the science communication and research teams with Lifebrain.

(1) Topiwala et al. (2017) Moderate alcohol consumption as risk factor for adverse brain outcomes and cognitive decline: longitudinal cohort study. <https://www.bmj.com/content/357/bmj.j2353>

The New Therapeutics in Alzheimer's Disease Project (NTAD) (REC Reference 18/EE/004-2)

A collaborative project between the University of Cambridge and the University of Oxford aims to determine early signs of Alzheimer's disease in the brain physiology using brain scans and psychological tests.

This study is looking for participants:

- aged 50 to 85 years old
- who are healthy or with a diagnosis of Alzheimer's disease or Mild Cognitive Impairment
- who have sufficient understanding of the English Language for cognitive testing

As part of the study, you will be asked to travel to the Oxford Centre for Human Brain Activity at Warneford Hospital to undertake the assessments.

If you are interested in hearing more or taking part, please contact Oxdare@psych.ox.ac.uk quoting NTAD.

Developing cognitive tests for healthy ageing

We are developing a set of sensitive tasks of memory, attention, perception and their interaction in order to track any changes in these functions across healthy ageing.

The study will involve carrying out simple computer-based tasks and responding to a few questionnaires. It will take a maximum of two hours in total.

We are looking for people aged 60 years and over, with no known neurological disorders.

You will be compensated £10 an hour for your time and reimbursed for travel expenses.

If you are interested in taking part in our study or would like further information please contact Dr Nahid Zokaei (nahid.zokaei@psy.ox.ac.uk).



The Active Brain—The 16th Oxford Brain Day

Where: Rewley House, 1 Wellington Square, Oxford OX1 2JA

When: Saturday 23rd February 2019, 9.30am—5.00pm

Fees: £67

Four expert speakers talk about the relationship between the brain, exercise, diet and health. There will also be an emphasis on the scientific techniques that have helped to revolutionise our ability to make sense of the brain.

The event is aimed at the general public and is open to all. No specialist knowledge is required; just a brain and the active desire to know how it works.

For more information and to book, visit

<https://www.conted.ox.ac.uk/courses/the-active-brain-the-16th-oxford-brain-day>

Dementia-friendly screenings



Where: Phoenix Picturehouse, Oxford

When: Last Tuesday of the month, 11.00am—1.00pm

Fee: £4 for participants, Free for carers

These dementia-friendly screenings are slightly adapted to ease the sensory impact—the lights in the screen are left on low, and guests are free to walk around, take a break and sing along to any songs.

Free tea, coffee and biscuits are provided from 10.30am before the screening begins.

For more information visit

https://arts4dementia.org.uk/?post_type=event&p=2714

Dementia Information morning

Where: Tingewick Hall, Academic Centre, John Radcliffe Hospital

When: Saturday 2nd March, 10am-1pm (times TBC)

Dementia Research UK is hosting a morning of public talks from dementia researchers across our region. There will also be information stands to provide support for people with dementia and their carers. Learn how you can get more involved with dementia research.

To book a place at this free event email aruk.administrator@dpag.ox.ac.uk or visit <https://www.oxdare.ox.ac.uk/public-events> for more information.



Tell us how you would like to get involved

OxDARE gets great value from its Patient and Public Involvement (PPI) Initiatives. You have helped us design activities and communications in the past.

In the New Year, we will be sending out a questionnaire to ask you to help us shape a public event where we can share the work we do in the field of dementia and ageing research. We do hope to hear from you.



Oxford Dementia & Ageing Research (OxDARE),
Department of Psychiatry, Warneford Hospital, Oxford, OX3 7JX

Website: OxDARE.ox.ac.uk

Contact us: OxDARE@psych.ox.ac.uk

Follow us: [@OxDARE](https://twitter.com/OxDARE)



NHS
**National Institute for
Health Research**

