Introduction

NHMRC National Institute of Dementia Research

The number of Australians with dementia is projected to nearly triple by 2050. This will place increasingly significant burdens on our society, healthcare system and economy. At present, there is no known effective therapeutic intervention that will cure or delay the progression of dementia; and not all identified risk factors can be modified (for e.g. age, gender, genetics). The NHMRC National Institute for Dementia Research (Dementia Institute) was established by the Australian Government in 2015 with $200 million in new funding to address this significant health challenge through boosting dementia research.

It is in this context that we welcome you to the Australia Dementia Forum: Progress on the Boosting Dementia Research Initiative, to take place in Melbourne between 15 and 17 October 2017. Timed to immediately precede with Alzheimer’s Australia’s 17th biennial conference, Be the change, the Forum will bring together Australia’s dementia researchers who are working to address the challenge of Alzheimer’s disease and other dementias, providing fertile ground for accessing the latest research breakthroughs and exploring collaborations relevant to the NHMRC Dementia Institute Strategic Roadmap for Dementia Research.

Forum speakers include international and national keynote presenters, preeminent researchers, including from the Institute’s Dementia Research Team Grant holders and recipients of International dementia research funding, policy makers, and community and research leaders.

The Forum provides the 73 NHMRC-ARC Dementia Research Development Fellows, who are reaching the mid-point of their four year program of research, an exciting opportunity to highlight their achievements to date. The convening of Special Interest Groups and other networking events round out discussions and provides the catalyst for new collaborations across the dementia research community.

The NHMRC Dementia Institute also takes the opportunity to share knowledge and information about its research activities, providing an initial overview of outcomes from the significant investment that the Boosting Dementia Research Initiative has made.

Programme Committee

Professor Colin Masters, Chair
Florey Institute, The University of Melbourne

Professor Kaarin Anstey
Australian National University

Janice Besch
National Institute for Dementia Research

Professor Michael Breakspear
Queensland Institute of Medical Research (QIMR) Berghofer

Professor Elizabeth Beattie
Queensland University of Technology

Professor Annette Dobson
The University of Queensland

Professor Jürgen Götz
Clem Jones Centre for Ageing Dementia Research (CJCADR), Queensland Brain Institute

Dr Alexandra Grubman
Monash University

Dr Sandra Garrido
Western Sydney University

Professor Glenda Halliday
Central Clinical School, University of Sydney

Joan Jackman
NHMRC Cognitive Decline Partnership Centre

Professor Sue Kurrle
The University of Sydney

Dr Moyra Mortby
Australian National University

Professor David Phillips
National Health and Medical Research Council

Dr David Sykes
Alzheimer’s Australia

Professor Robert Williamson
University of Melbourne
Round Table Sessions

Sunday 15 October – By Invitation

10.00 – 12.00 Round Table 1: The long and winding road to prevention: ensuring dementia prevention research makes an impact
Room 106
Dr Helen Macpherson, Flinders University; Professor Kaarin Anstey, Australian National University
This round table event will include dementia prevention researchers to facilitate a high-level discussion regarding research translation and knowledge exchange between research, policy and practice. Clinicians, representatives from relevant government and NGOs including Alzheimer’s Australia and consumer advocacy groups will be invited to participate.

12.30 – 15.30 Round Table 2: Safe and effective use of medicines in people living with dementia
Room 106
Dr Lisa Kalisch, University of South Australia; Professor Deborah Rowett, University of South Australia.
This round table will focus on the safe and effective use of medicines in people living with dementia. It will bring together researchers and health professionals who have an interest in better understanding the adverse effects of medicines in people living with dementia. It will provide opportunities for research collaboration and developing new research directions relating to the safe and effective use of medicines in people living with dementia, and the formation of an ongoing special interest group on this topic.

12.30 – 15.30 Round Table 3: Understanding mechanisms in dementia, identifying biomarkers and drug discovery using stem cell models
Room 101
Dr Anthony Cook, University of Tasmania; Dr Alexandra Grubman, Monash University; Dr Anna King, University of Tasmania; Dr Rodrigo Medeiros, University of Queensland; Dr Lezanne Ooi, University of Wollongong; Dr Bradley Turner, Florey.

Tuesday 17 October – All Welcome

12.30 – 15.30 Round Table 4: Special Interest Group – Expression of interest. Delaying functional decline in people with dementia through rehabilitative therapies
Room 101
Dr Kate Laver of Flinders University invites you to attend a brief session to express interest in the establishment of a special interest group. This will bring together a multidisciplinary group with industry partners and consumers who have expressed a commitment to further research and knowledge translation efforts dedicated to delaying functional decline in people with dementia.

Programme

Sunday 15 October

08.30 – 17.00 Registration desk open – Poster boards available
16.00 – 17.00 CONFERENCE OPENING SESSION
Chair: Professor Colin Masters, Chair of the Program Committee, ADF2017
Welcome to Country
The Honourable Greg Hunt Minister for Health
Welcome
John Quinn
I’m not JUST another statistic
Maree McCabe CEO, Dementia Australia
Our Important Partnership for People with Dementia
Janice Besch Director, NHMRC Dementia Institute
Progress on the Boosting Dementia Research Initiative
Programme

17.00 – 18.00 ADF2017 Keynote Speaker
Chair: Professor Ralph Martins, Edith Cowan University & Macquarie University

Professor Sam Gandy
Mount Sinai Hospital Professor of Alzheimer’s Disease Research

There is no evidence so far to prove that current Aβ-lowering trials will show any meaningful benefit for memory or other brain functions and there is unlikely to be anytime soon a medicine that is administered for decades from midlife to death as a means of preventing Alzheimer’s Disease (AD). A range of new approaches to postponing the symptoms of AD – interventions when amyloid is present in the brain but before the appearance of symptoms must be considered. This is the future challenge for researchers and pharma alike in addressing the burden of dementia.

18.00 – 20.00 Welcome Reception – Performance: Musical Memories Dementia Choir

Monday 16 October

08.00 – 08.30 ADF2017 Opening Addresses
Chair: Janice Besch, Director, NHMRC Dementia Institute

08.00 – 08.15 Professor Anne Kelso, CEO, NHMRC

08.15 – 08.30 Professor Graeme Samuel, Chair, NNIDR Board and President, Alzheimer’s Australia

08.30 – 10.45 Plenary Speakers
Chair: Professor Robert Williamson, University of Melbourne

08.30 – 09.15 Professor Glenda Halliday
Central Clinical School, University of Sydney

Non-Alzheimer’s degenerative dementias: identifying prodromal genetic/familial phenotypes, modifying factors and protein variations involved in progression

Associate Professor John Kwok, Associate Professor Amy Brodtmann, Professor Olivier Piguet

Research is generating new knowledge necessary for advancing the diagnosis of the non-Alzheimer’s disease dementias. We will identify the preclinical forms of frontotemporal dementia and Lewy body dementia using similar methods to those successfully employed to advance diagnosis of Alzheimer’s disease. Importantly, our team has the capacity to translate these protocols into clinical practice and into further advances in biological knowledge that is necessary for future therapeutic targeting.

09.15 – 10.00 Associate Professor Ian Blair
Australian School of Advanced Medicine, Macquarie University

Developing insight into the molecular origins of familial and sporadic frontotemporal dementia and amyotrophic lateral sclerosis

Associate Professor Julie Atkin, Associate Professor Tim Karl, Dr Lezanne Ooi

There is strong evidence that frontotemporal dementia (FTD) and amyotrophic lateral sclerosis (ALS) represent a spectrum of neurodegenerative disease with common origins. A combined study of FTD/ALS patient cohorts will provide greater power to identify these shared molecular origins. We aim to discover gene variants that cause, predispose, or modify onset and progression of inherited and sporadic FTD/ALS, and validate and study our discoveries in new cell and animal models of these disorders.

10.00 – 10.45 Professor Michael Breakspear
Queensland Institute of Medical Research (QIMR) Berghofer

Prospective Imaging Study of Ageing (PISA): genes, brain and behaviour

Dr Christine Guo, Dr Michelle Lupton, Ms Kerrie McAloney, Dr Robert Adam, Dr Olivier Salvado, Associate Professor Gail Robinson

The Prospective Imaging Study of Ageing (PISA) has been designed to identify those Australians at risk of dementia whilst they are still relatively young. PISA leverages a polygene risk score (PRS) to identify healthy mid-life Australians at high future risk of dementia, and follows them longitudinally with a comprehensive battery of imaging, genetics, neuropsychology, lifestyle and clinical assays. In this talk we will present early progress in each of those domains, highlighting the various logistic, governance, ethics and pragmatic challenges.
Programme

challenges that we have overcome in order to execute the study according to our over-arching vision. We will also highlight the new collaborative links between wet and dry labs, memory clinics, population health, biomedical engineering, psychology and translational imaging that PISA is fostering.

10.45 – 11.00 MORNING TEA

11.00 – 12.30 Plenary Speakers

Chair: Professor David Phillips, Associate Director, National Health and Medical Research Council

11.00 – 11.45 Professor Jürgen Götz

Clem Jones Centre for Ageing Dementia Research (CJCADR), Queensland Brain Institute

From basic pathomechanisms to therapeutic interventions

Dr Dan Blackmore, Dr Victor Anggono, Dr Rodrigo Medeiros

A concise overview of the research activities at CJCADR including: a new mechanism for local Ab-mediated Tau translation in the somatodendritic domain; ultrasound as a new treatment modality for AD; physical exercise for amelioration of decreased neural stem cell numbers, neurogenesis and cognitive deficits; a novel pathway that mediates Aβ-induced loss of AMPA receptors in mammalian central neurons; molecular mechanisms linking inflammation to Aβ and tau pathology as well as cognitive decline.

11.45 – 12.30 Associate Professor Amy Brodtmann

Florey Institute, The University of Melbourne

Vascular mechanisms of neurodegeneration: drivers and determinants of dementia

Dr Sheila Patel, Dr Vanessa Brait, Dr Jess Nithianantharajah, Dr Lachlan Thompson, Professor Louise Burrell

The evidence is compelling: vascular burden is the greatest determinant of late life cognition. The volume of evidence linking vascular risk and dementia is conclusive. All late-onset dementia syndromes, especially Alzheimer’s disease, are driven or exacerbated by vascular brain burden. We aim to examine how vascular burden causes dementia. Understanding the mechanisms means that we can prevent and treat the global epidemic of dementia. An update on animal and human projects will be presented.

12.30 – 13.30 LUNCH

13.30 – 15.00 Plenary Speakers

Chair: Professor Michael Breakspear, QIMR Berghoff

13.30 – 14.15 Professor Henry Brodaty

University of New South Wales

Maintain your brain

Dr Megan Heffernan (UNSW), Dr Maria Fiatarone Singh (USyd), Dr Michael Valenzuela (USyd)

The internet based intervention targets modifiable risk factors for dementia in general and AD in particular, namely physical inactivity, cognitive inactivity, depression, and being overweight or obese, diabetes (type 2), as well as advice regarding high blood pressure and smoking. Our aim is to determine the efficacy and cost-effectiveness of a multi-modal targeted intervention delivered and monitored on the internet to reduce the rate of cognitive decline in non-demented community dwelling persons aged 55-75 years and in the long-term to delay the onset of dementia.

14.15 – 15.00 Professor Rob Sanson-Fisher

School of Medicine and Public Health, University of Newcastle

The ACoRD Program

The Australian Community of Practice in Research in Dementia (ACoRD) is a national, multidisciplinary research team dedicated to developing, implementing and evaluating strategies to improve the wellbeing and quality of care provided to people living with dementia and their care partners. Studies underway include: the development of acceptable and robust measures for assessing the unmet needs of people living with dementia and their care partners; the views of consumers, nurses, general practitioners and geriatricians regarding the acceptability and feasibility of the NHMRC guidelines for dementia care; medico-legal impediments to providing high-quality person-centred care; and the application of strong research methodology to test the effectiveness of strategies to improve important outcomes for people with dementia and their care partners.
Programme

15.00 – 15.30  AFTERNOON TEA

15.30 – 17.30  Dementia Centre for Research Collaboration (DCRC)
Chair: Dr Moyra Mortby, Australian National University
Professor Henry Brodaty, Professor Kaarin Anstey, Professor Elizabeth Beattie
DCRC Directors’ Overview
Professor Marita McCabe (ACU)
Consumer Directed Care in Residential Aged Care: Implementation and Evaluation of the Resident at the Centre of Care (RCC) Program
Dr Matt Paradise (UNSW)
An MRI index of cerebrovascular disease burden: development and validation
Dr Maree Farrow (UTas)
Memory performance is associated with exposure to risk factors for Alzheimer’s disease
Dr Kate Stevens (WSU)
Time Travelling with Technology (TTT): Applying and Evaluating Behavioural and Psychosocial Benefits of Liquid Galaxy-Based Reminiscence Therapy for People with Dementia
Dr Cindy Jones (Griffith U)
Sexualities & Dementia: Improve Knowledge, Attitudes & Practices in Aged Care Via Interactive Live Webinars

15.00 – 17.30

17.30 – 18.00  DCRC Directors’ Overview

18.00 – 20.00  COCKTAIL RECEPTION AND POSTER SESSION

Tuesday 17 October

08.30 – 10.30  Cognitive Decline Partnership Centre (CDPC)
Chair: Professor Susan Kurrle, The University of Sydney
Ms Louise Heuzenroeder
Consumer involvement in development of Clinical Practice Guidelines and Principles of Care for People with Dementia and Associated Consumer Companion Guide
Dr Kate Laver (Flinders)
What do members of the public believe regarding efficacy of treatments for dementia? A systematic review
Dr Morag Taylor (UNSW)
Slow gait speed is associated with executive function decline in older people with mild to moderate dementia
Dr Suzanne Dyer (Flinders)
The effects of different built environments in residential care on consumer-reported outcomes and healthcare resource use
Dr Tracy Comans (Griffith U)
Demonstrating value based health care is an essential element of evaluating new and existing services

10.30 – 11.00  MORNING TEA

11.00 – 11.30  Dementia Research Development Fellows: Research Addressing the Challenges of Living with Dementia and Delivering Quality of Care
Chair: Professor Kaarin Anstey, Australian National University
Dr Julia Gilmartin-Thomas (Monash)
Qualitative and quantitative impact of a virtual dementia experience on medical and pharmacy students’ knowledge, attitudes and self-reported behaviour toward people with dementia
Dr Fiona Kumfor (USyd)
Why do patients with frontotemporal dementia misinterpret social cues? The importance of context

11.30 – 12.45  Dementia Research Development Fellows Panel Discussion: New Research to Improve Assessment & Diagnosis
## Programme

**Chair:** Professor Glenda Halliday, The University of Sydney

- **Dr Loren Mowszowski (USyd)**
  Detecting subtle functional decline in prodromal dementia
- **Dr Shaun Frost (CSIRO)**
  Eye imaging for early detection of Alzheimer’s disease
- **Dr Mitchell Goldsworthy (Adelaide)**
  TMS-EEG indices of cortical effective connectivity and physical activity in older adults
- **Dr Nawaf Yassi (Florey)**
  Cortical Cerebral Microinfarcts on 3T MRI in Alzheimer’s Disease
- **Dr Scott Ayton (Florey)**
  Cerebral quantitative susceptibility mapping predicts β-amyloid-related cognitive decline

### 12.45 – 14.00 LUNCH

### 14.00 – 15.00 Dementia Research Development Fellows Panel Discussion: Intervention and Treatment Studies

**Chair:** Professor Annette Dobson, The University of Queensland

- **Dr Kylie Radford (UNSW)**
  Life course social and biomedical factors associated with dementia in Aboriginal Australians
- **Dr Belinda Brown (Murdoch)**
  Update on the Intense Physical Activity and Cognition (IPAC) Study
- **Dr Kathryn Munro (UoM)**
  Effects of BACE inhibition on synaptic connectivity
- **Dr Edwin Tan (Monash)**
  Acetylcholinesterase inhibitors and risk of stroke and death in people with dementia

### 15.00 – 15.30 AFTERNOON TEA


**Chair:** Dr Alexandra Grubman, Monash University

- **Dr Emma Louise Burrows (Florey)**
  Progressive behavioural flexibility impairments in the APP/PS1 mouse model of Alzheimer’s disease as measured by translatable touchscreen technology
- **Dr Yen Ying Lim, (Florey)**
  BDNF Val66Met increases rate of memory decline, hippocampal volume loss and tau accumulation in autosomal dominant Alzheimer’s disease
- **Dr Shantel Duffy (USyd)**
  The longitudinal relationship between anterior cingulate glutathione and executive functioning in individuals at-risk for dementia: a magnetic resonance spectroscopy study
- **Dr Erin McAllum (Florey)**
  Metalloproteomic changes in dementia with Lewy bodies
- **Dr Simon James (Florey)**
  Iron, copper, and zinc concentration in Aβ Plaques in the APP/PS1 mouse model of Alzheimer’s disease correlates with metal levels in the surrounding neuropil
- **Dr Sarah Rea (UWA)**
  An ALS-FTLD associated mutation of SQSTM1/p62 attenuates oxidative stress signalling and autophagy
- **Dr Samamtha Barton (Monash)**
  Using patient iPS-derived oligodendrocytes harbouring a C9ORF72 mutation to identify disease causing mechanisms in ALS-FTD

### 17.15 – 17.30 AWARDS PRESENTATION AND CLOSE