The Australian Imaging Biomarkers and Lifestyle Flagship Study of Ageing

aibl

(AUSTRALIAN ADNI)

November 2014 UPDATE

Christopher Rowe MD – *Neuroimaging stream leader*

CSIRO

THE UNIVERSITY OF MELBOURNE

NNF NATIONAL NEUROSCIENCE FACILITY

NARI

MENTAL HEALTH Research Institute

ECU EDITH COWAN UNIVERSITY

Alzheimer's Australia Living with dementia

THE UNIVERSITY OF WESTERN AUSTRALIA

CogState

Austin Health

MACQUARIE UNIVERSITY SYDNEY ~ AUSTRALIA

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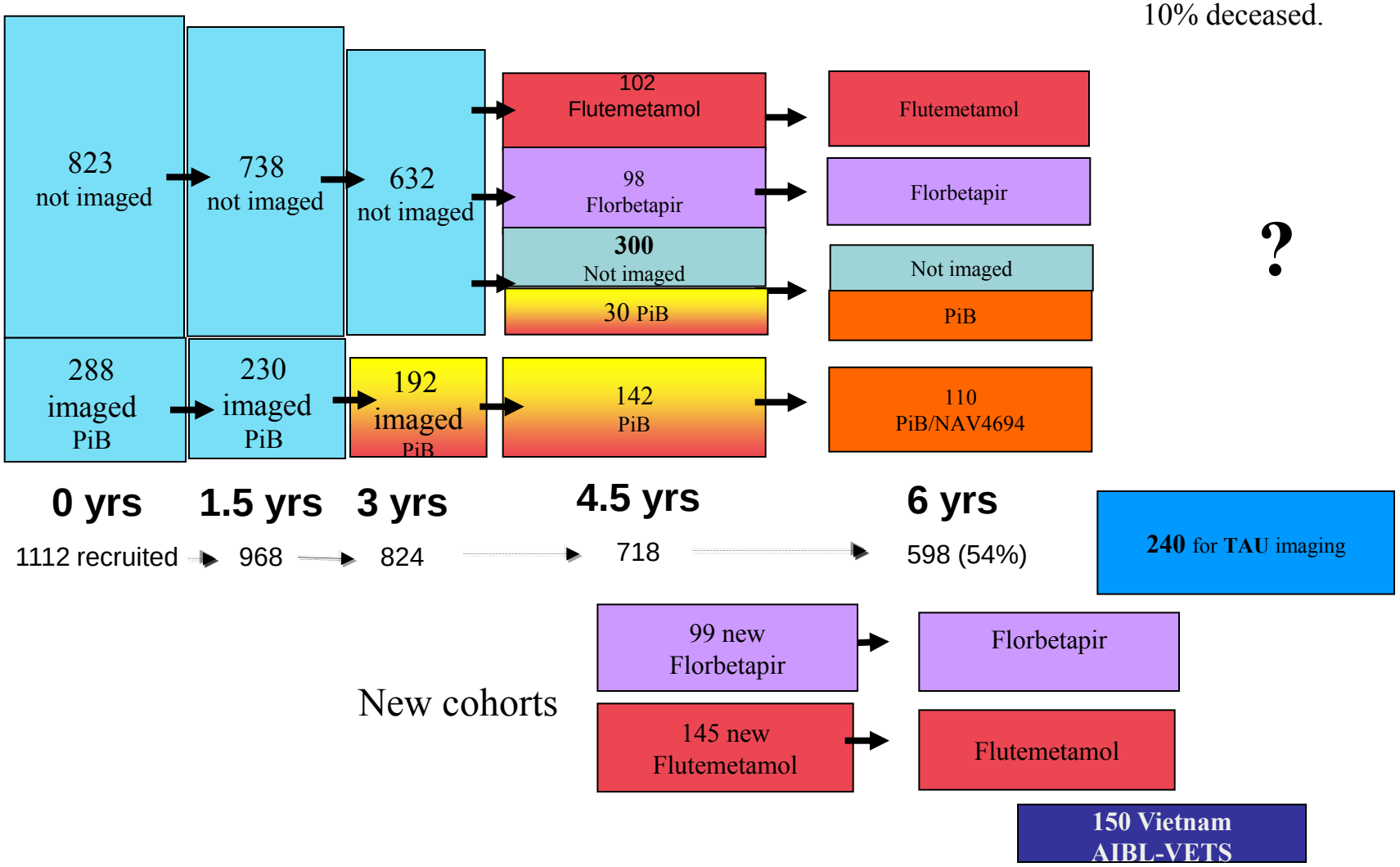
October 2006

October 2014

54% retention.
10% deceased.



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4.5 year data release

PiB Baseline (288), 3 years (173), 4.5 yrs (141)

Plus 230 added from original cohort (flutemetamol, florbetapir or PiB at 4.5 yrs)

i.e. amyloid scan status known in 371 subjects with 4.5 yrs of follow-up.

Plus 250 new recruits (160 flute, 90 FBP)

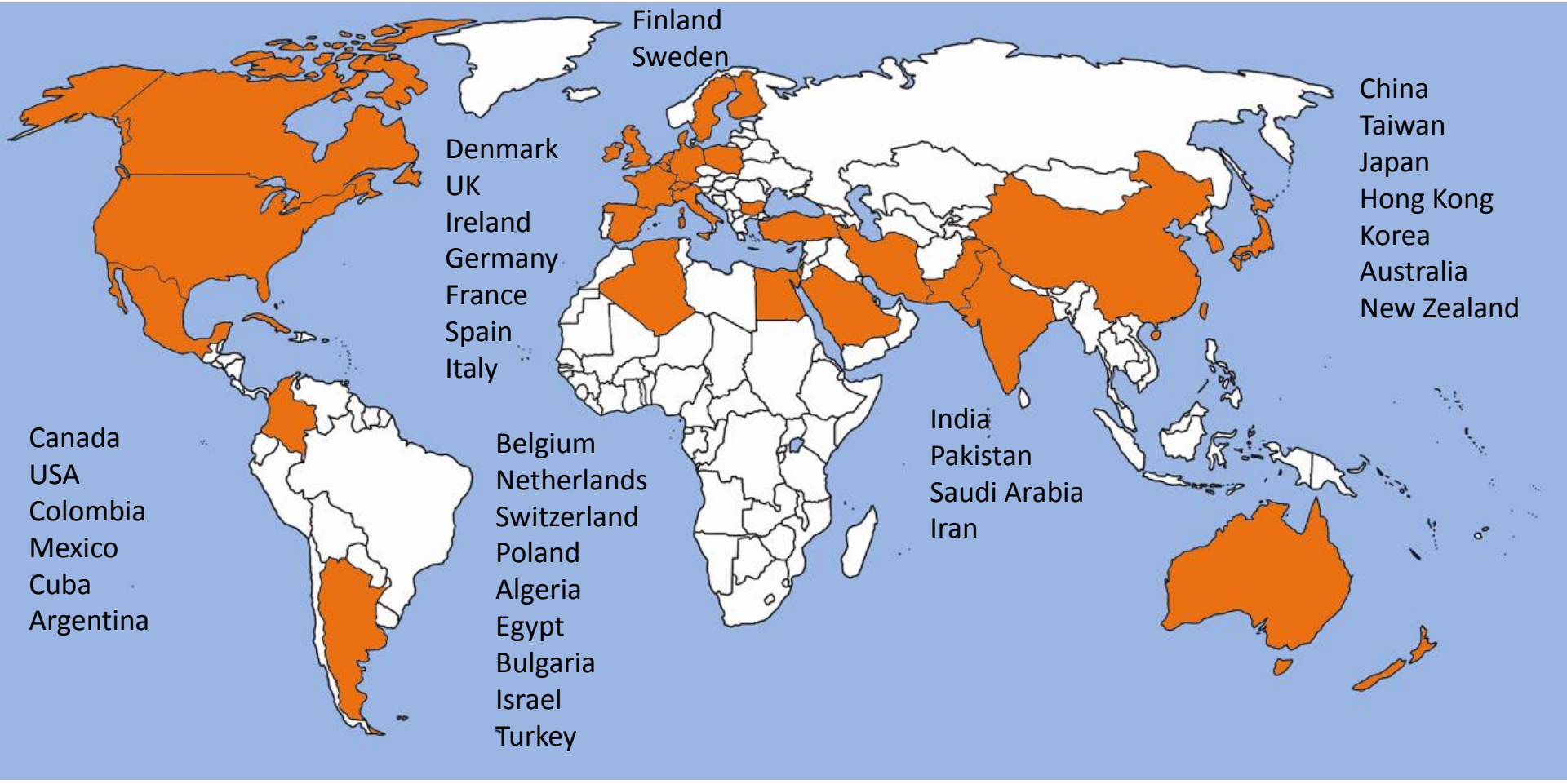
www.adni.loni.usc.edu

- Data and Samples

- Access Data

CSIRO Austin Health Mental Health Research Institute NARI The University of Melbourne ECU Edith Cowan University Alzheimer's Australia Living with dementia

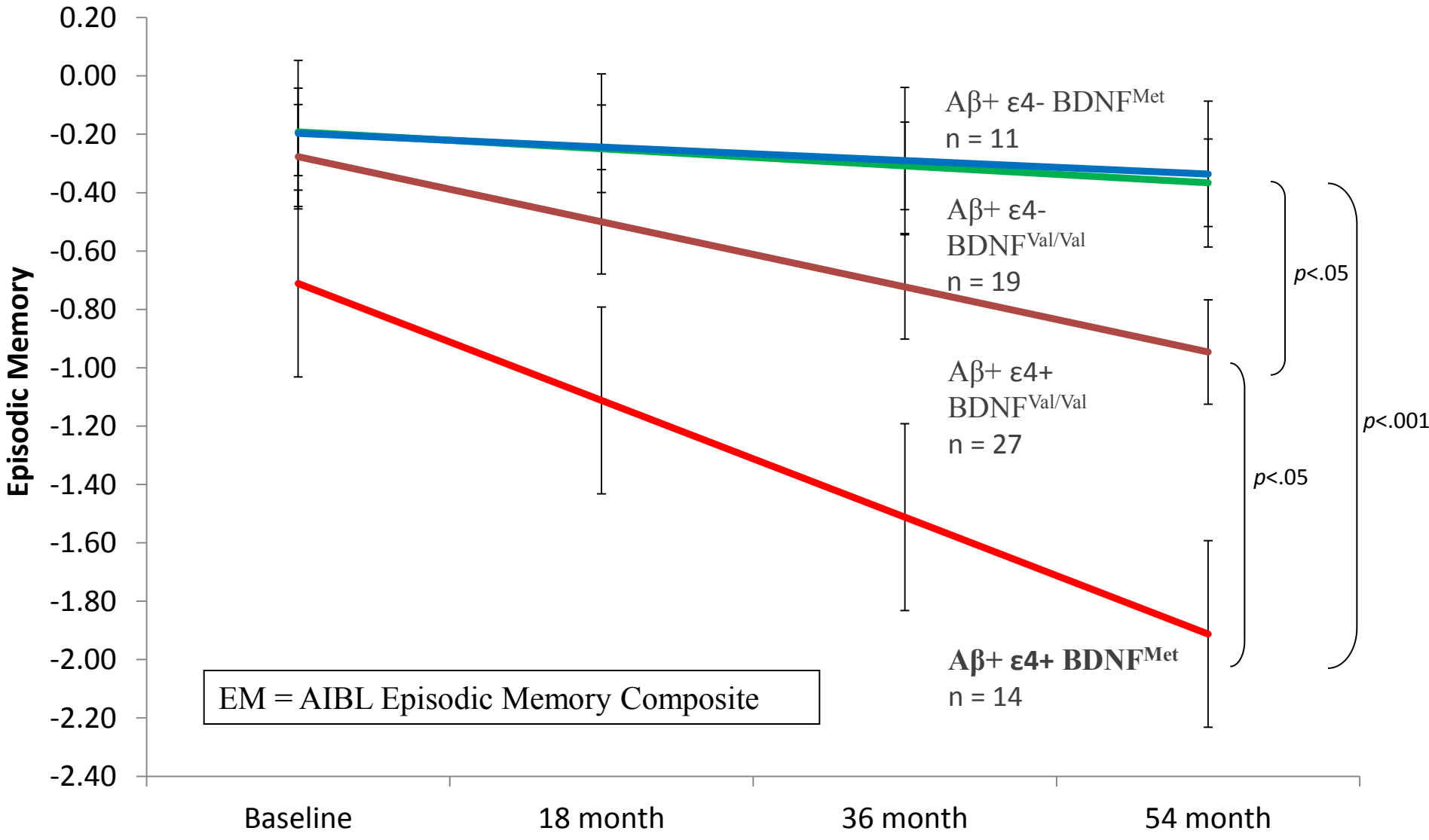
610 research groups granted access to AIBL@LONI through ADNI website



Includes access granted to the following companies:

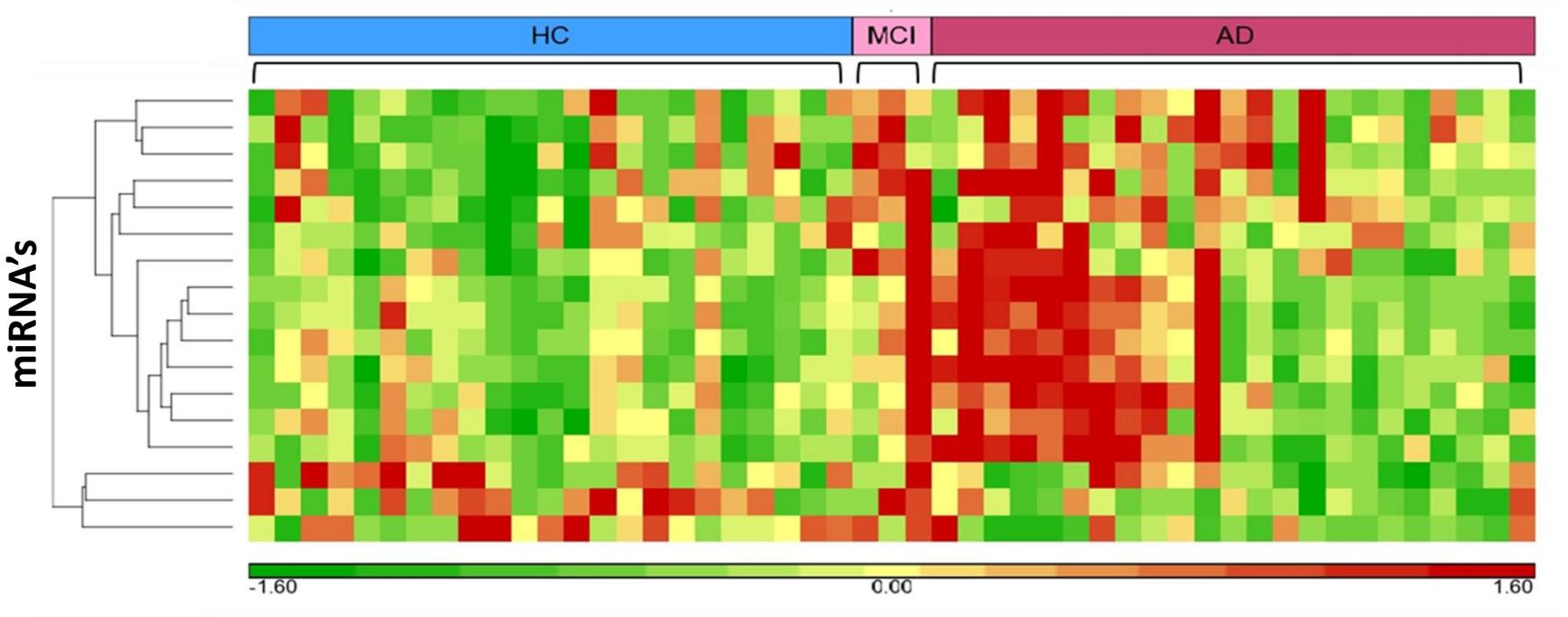
Abbott Labs, Abiant, ADM diagnostics, Astra Zeneca, Avid, BioClinica, Biogen Idec, Bristol-Myers Squibb, Cogstate Cytokinetics, Eisai, Elan, Eli Lilly, GE Health Care, General Resonance, Genetech, Imorphics, Iris Biotechnologies, Janssen, Johnson Johnson, M and M Scientific, Merck & Co, Mimvista, Pentara Corp, Pfizer, Philips, Predixion software, Rancho Biosciences, Servier, Siemens, Soft team solutions, UCB, United Biosource Corp.

HA Aβ+ 54 months: Effect of *APOE & BDNF*



Lim YY et al. Molecular Psychiatry 2014

Differentially expressed exosomal miRNA in AD patients



- 17 miRNA were found to be significantly deregulated (p (AD Vs HC) ≤ 0·05)
- There are two major clusters:
  - Cluster 1 contains 15 miRNA which were found to be up-regulated.
  - Cluster 2 contains 3 miRNA which were found to be down-regulated.
- Validation in 15 AD and 35 Healthy Controls blind to diagnosis using qPCR:
  - 13/15 AD correctly identified (Sensitivity of 87%) (2 patients high Aβ / APOε4 negative)
  - 27/35 HC correctly identified (Specificity of 77%) (5 subjects high Aβ / 3 APOε4 positive)

Andrew Hill et al. Molecular Psychiatry 2014

Future Directions for AIBL Imaging

- Further refine prognostic value and comparative effectiveness of imaging and blood biomarkers
- Examine genetic and environmental influences on rate of decline in Aβ+ve HC
- Tau imaging
- Create a new pool of amyloid scan positive HC and MCI for early intervention trials
- Use AIBL infrastructure to support the A4 and DIAN therapy trials

Acknowledgements and thanks

AIBL is a large collaborative study and a complete list of contributors and the management committee can be found at **www.aibl.csiro.au**

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We thank all who took part in the study.

SCIENCE AND INDUSTRY ENDOWMENT FUND