



neurosciencesvictoria



ANNUAL REPORT

2015-2016

Neurosciences Victoria acknowledges the support of the following:



CONTENTS

Chairman and CEO Report	2
Overview	4
Directors	6
Members	11
Austin Health	12
The Bionics Institute	13
The Florey Institute of Neuroscience and Mental Health	15
Melbourne Health	18
Monash University	19
Swinburne University of Technology	21
The University of Melbourne	23
Risk and Audit Committee	24
Scientific Council	25
Financials	26
Statement of Comprehensive Income	26
Statement of Financial Position	27
Staff	28

CHAIRMAN AND CEO REPORT

Neurosciences Victoria (NSV) was formed in 2001 to bring together the Victorian neuroscience community to develop major programs in diseases of the brain and mind, partnering with industry and government.

The Company works with its members to initiate or manage programs in fundamental or applied neuroscience.

Over 15 years, NSV has facilitated over \$80 million of programs across a broad range of neurological and psychiatric conditions.

In 2015/16, NSV continued its strong track record in generation of important outcomes in its research programs, to the benefit of its members and the wider Victorian neuroscience community. These achievements highlight NSV's leadership in identifying and developing initiatives that capture the key competitive advantages of Victorian neuroscience.

In particular, the newly established Centre for Brain Injury (CBI) continues its progression toward becoming a leading global traumatic brain injury research centre. Importantly, the CBI brings together industry with hospitals, universities and medical research institutes to conduct applied research that will lead to products and translational research outcomes for the benefit of patients with traumatic brain injury.

The formal establishment of CBI as an unincorporated group of 12 organisations occurred in April 2016.

The Centre for Brain Injury Ltd, at present a company wholly owned by NSV, was formed to enable CBI to enter into funding arrangements with external parties, both government and industry. This initiative is part of an intensive and committed approach to the evolution of the CBI by NSV and its membership dedicated to this exciting endeavour.

NSV's three-year program in developing strategic linkages in neuroscience between India and Melbourne concluded in June 2016. The activity received funding from Austrade as part of the Asian Business Engagement Plan as well as from the Victorian Government. The program highlighted the importance of developing strong relationships between research organisations to facilitate major joint initiatives. A number of important program opportunities have been generated for NSV's members, along with the execution of three Memoranda of Understanding with leading Indian medical research organisations.

In addition to these major NSV-led initiatives, we continue to work closely with the Victorian Department of Health and Human Services in management of the five projects that comprise the Victorian Government's \$10m Mental Illness Research Fund. The Fund supports multidisciplinary and cross-sector collaborative research projects to promote tangible improvements in service provision to the mental health community in Victoria.

In 2016/17, NSV will continue to work with its members to explore new opportunities, building on the competitive strengths of Victorian neuroscience. These include a major development in neuro-focused medical devices, as well as exploration of new project opportunities in areas such as the blood brain barrier and international imaging collaborations.

NSV's consolidated operational activities in 2015/16 generated a profit of \$28,000; net assets as at 30 June 2016 were \$1,950,000. NSV is strongly focused on a sustainable, long term future. We believe that major programs currently under development will lead to a substantial improvement in the Company's financial situation.

We would like to thank all of our stakeholders for their continued support and involvement; our member institutes, hospitals and universities that comprise NSV, as well as our valued colleagues in the Victorian neuroscience community.

Finally, we wish to recognise our fellow directors as well as staff for their sustained commitment throughout the year.



BILL BURDETT
Chairman



ANDREW MILNER PhD
Chief Executive Officer and Managing Director

OVERVIEW

Neurosciences Victoria was formed in 2001 and is a not-for-profit company that facilitates technology transfer and inward investment in collaborative, cross-institute research programs for the world-class Victorian neuroscience community.

NSV offers a single access point to a range of neuroscience platforms and disease specialisations, backed by leading neurology and psychiatry resources as well as clinical expertise. A focus of NSV is to facilitate seamless contractual relationships between industry, government and the Victorian neuroscience cluster of universities, medical research institutes and hospitals.

NSV works with the following disease specialisations.

- ▶ Multiple sclerosis
- ▶ Schizophrenia
- ▶ Alzheimer's disease
- ▶ Epilepsy
- ▶ Neurodevelopmental disease
- ▶ Depression and bipolar disorder
- ▶ Huntington's disease
- ▶ Motor neurone disease/ALS
- ▶ Neurotrauma
- ▶ Parkinson's disease
- ▶ Stroke

The neuroscience community has a range of technology platform capabilities.

A feature of the Victorian neuroscience community is the wide range of platform capabilities available to researchers in both academia and industry. These are highlighted in the Victorian Platform Technologies Network website (www.platformtechnologies.org).

NEUROIMAGING

The neuroimaging platform has successfully evolved into a self-sustained organisation as The Victorian Biomedical Imaging Capability (VBIC). VBIC provides a coordinated network of capabilities and research capacity in biomedical imaging to support universities and medical research institutes in neuroscience. Capabilities include research dedicated 3T MRI, 7T MRI, PET/CT, Animal MRI and Animal CT, PET/MRI with access co-ordinated across multiple Victorian sites. Facilities are at Monash University, the University of Melbourne, Swinburne University, and the Florey Institute of Neuroscience and Mental Health. All provide access and expertise for Victorian researchers using imaging for research.

NEUROINFORMATICS

Neuroinformatics capabilities have substantially evolved and improved over the last decade. This platform has been integrated into other bioinformatics initiatives within the national research computing landscape. For example, the DaRIS bio-medical imaging data management capability, developed at the University of Melbourne, is now also supported by the national NCRIS-funded Research Data Services Program (www.rds.edu.au). In Victoria, VicNode (www.vicnode.org.au), a joint University of Melbourne and Monash University entity, operates the DaRIS service, supplying imaging informatics services to the wider Victorian community.

NEUROPROTEOMICS

The platform advances studies examining the role of proteins, metalloproteins and biomarkers including amyloid beta and alpha synuclein in the nervous system and peripheral fluids including blood and CSF. The facility has a unique capability to directly measure metalloproteins as well as general capabilities for proteomics and trace element analysis.

The facility is equipped with instruments to probe secondary structure including Circular Dichroism (CD), pulsed paramagnetic resonance (EPR, Bruker) and equipment for proteomics including mass spectrometry (Agilent QTOF 6550, 6560 ion mobility QTOF, & a 6495 QQQ) and large format 2D gels (9500 Typhoon imager and associated gel equipment). For trace element analysis we have inductively coupled mass spectrometers (Agilent 7700 ICP-MS) and are equipped to conduct analysis of metalloenzymes in biological samples.

NEUROSCIENCE TRIALS AUSTRALIA

A neuroscience dedicated contract research organisation that provides a single point of contact for a range of clinical trial services. These include clinical program development, study design, protocol review, regulatory advice, study feasibility, site selection, statistical advice and data management, medical writing, project management and monitoring.

NEURO RESEARCH SERVICES

A preclinical contract research organisation providing proof of concept and efficacy testing services to the CNS drug discovery market. Facilities include preclinical study design and assessment selection, rodent models of human diseases, behavioural testing, surgical services, pharmacokinetics, rodent neuropathology, imaging and analysis.

CLINICAL NEUROBIOLOGY OF PSYCHIATRY

The technology and capabilities of this platform have moved into the Monash Alfred Psychiatry research centre (MAPrc). MAPrc coordinates and facilitates all research performed within The Alfred Hospital's Department of Psychiatry, aiming to develop new treatments, new understanding and new services for mental illness.

CELLULAR PHYSIOLOGY

Provides access to state of the art automated planar patch clamp platforms, two electrode voltage clamp and manual patch clamp services for analysis of ion channel function for mutation analysis, drug discovery and safety pharmacology. In addition, this facility offers multielectrode array services in brain slices or neuronal cultures for assessment of drugs on neuronal network function, LTP, LTD and other assays.

HISTOPATHOLOGY, HISTOLOGY AND IMAGING

The Histopathology and Organ Pathology Service (HOPS) provides histopathology services that are available to all biomedical researchers across Australia for the evaluation of animal models of disease. HOPS has a specific consulting service in Neuropathology. It specialises in the evaluation and phenotyping of modified, treated or genetically engineered mice at all developmental stages and in the evaluation of a range of animal models of disease.

This service provides the specialised equipment and technical expertise for histopathological analysis of whole organs, soft and hard tissues, to help researchers gain a better understanding of their animal model's phenotype. It is delivered by a team of experienced medical and veterinary pathologists, mouse pathobiologists and imaging experts implementing comprehensive anatomical pathology and histopathology evaluation procedures.

HOPS evaluation includes professional commentary and secure online access to large format, interrogatable histological images created utilising state of the art image acquisition systems using the Mirax Digital Slide Scanner and the Metasystems V-Slide Scanner, that provides four colour fluorescence and interference contrast images of individual slides of brain or other tissues.

The service is linked to the Australian Phenomics Network that brings together mouse production, strain storage, pathology capabilities and RNAi/genomics services. HOPS is subsidised by the Commonwealth Government through the NCRIS program.

DIRECTORS

The Board of Directors of Neurosciences Victoria brings together a strong mix of scientific, clinical, public policy and commercial expertise.



MR BILL BURDETT

BSc (Hons), ASIA
Chairman

Mr Burdett graduated in geology at the University of Western Australia and worked in oil exploration for nine years before moving to Melbourne to start a mining research department for the stockbroking firm of A.C. Goode & Co. He became a partner of the firm and in 1984 was appointed Executive Director in charge of Institutional Sales, Research and Corporate Finance.

Following the sale of A.C. Goode & Co. to the National Australia Bank in 1987, Bill became Founding Chairman and Chief Executive of Burdett, Buckeridge & Young, an institutional stockbroker. His previous appointments include; Director of Investment Technology Group, Inc., Director of IRESS Market Technology Ltd, Director of Nossal Institute Limited, Council Member of the Nossal Institute for Global Health and Director of the Victorian Neurotrauma Initiative Ltd.

Bill is currently a Director of the Centre for Brain Injury Ltd and of Australian Friends of Asha Slums.



MRS JAN WEST AM

B.Comm, FCA GAICD
Deputy Chair

Mrs West is a non-executive Director with experience in public sector, community and private organisations. A Chartered Accountant with 23 years' experience as a Partner at Deloitte, Jan is a Director of Australian Red Cross, Dairy Australia, Australia Post and Melbourne Forum. She is also an independent member of the Audit and Risk Management Committees of the Victorian Department of Treasury and Finance and of the Victorian Department of Health and Human Services.

Her experience offers the Board a depth of knowledge and skills in audit, corporate governance, risk and general business acumen. Jan is a past President of The Institute of Chartered Accountants in Australia (ICAA).

She was appointed a Member of the Order of Australia in 2007 and awarded the Governor General's Centenary Medal in 2001. Jan is a Fellow of Chartered Accountants ANZ and a Graduate Member of the Australian Institute of Company Directors.



DR ANDREW MILNER

BSc (Hons), MSc, PhD, FASM
Chief Executive Officer and
Managing Director

Dr Milner has been the CEO
and Managing Director of

Neurosciences Victoria since 2006. Andrew obtained his BSc (Hons) and MSc degrees at the University of Melbourne and his PhD at the John Curtin School of Medical Research at the Australian National University.

Andrew is a Director of the Centre for Brain Injury Ltd., a Member of the Advisory Board of the Melbourne Neuroscience Institute at the University of Melbourne and the Chair of the Australian Research Infrastructure Network Advisory Group.

He is a Fellow of the Australian Society for Microbiology and has worked in animal health and agriculture as Head of Molecular Biology at the Victorian Institute of Animal Science and subsequently as Operations Manager at Daratech Pty Ltd. In the medical arena, he has worked as Pricing Manager for Zeneca and AstraZeneca in Australia, as Director of Development and Commercialisation for Kendle (Australia) and as Managing Director of Mimotopes Pty Ltd.



MS DEBBIE BEADLE

BSc (Chem) (Hons), FIPTA

Ms Beadle completed a Bachelor of Science with Honours majoring in chemistry from the University of Melbourne before commencing

her training as a patent attorney in 1988. She registered as a patent attorney in 1993 and became a Principal of Griffith Hack in 2003. Debbie has primarily practised as a patent attorney in the fields of chemistry and pharmaceuticals.

From 2009-2011, Debbie had the role of National Practice Group Leader of the Life Sciences and Chemical Group and was elected to the Board of Griffith Hack in November 2011.

Debbie is a Fellow of the Institute of Patent and Trade Mark Attorneys of Australia and a member of Ausbiotech, BioMelbourne Network, Royal Australian Chemical Society, Intellectual Property Society of Australia and New Zealand, Asian Patent Attorneys Association, Association Internationale pour la Protection de la Propriété Intellectuelle and the Australian Institute of Company Directors. She is a Director of the Centre for Brain Injury Ltd. and a Member of the MS Angels.



PROFESSOR STEPHEN DAVIS AM

MD, FRCP, Edin FRACP

Professor Davis is the inaugural Professor of Translational Neuroscience at the University of Melbourne. He is based at the Royal Melbourne Hospital (RMH) where he is the Director of Neurology and the Director of the Melbourne Brain Centre at the RMH.

He is the immediate past President of the Australian and New Zealand Association of Neurologists and a past President of the Stroke Society of Australasia. He was the first Co-Chair of the Australasian Stroke Trials Network and has extensive experience in stroke trials. He is the President of the World Stroke Organization and is the Co-Chair of Neuroscience Trials Australia. He has been a Trustee of the RMH Neuroscience Foundation since its formation in 1992. He is a Governor of The Florey Institute of Neuroscience and Mental Health.

He was appointed a Member of the Order of Australia in 2013. He received the M.J. Eadie Award in 2004 by the Australian and New Zealand Association of Neurologists for career achievements in neuroscience research and the Victorian Health Minister's Award for outstanding individual achievement in the 2008 Victorian Public Healthcare awards. He is the 2011 recipient of both the American Stroke Association's William Feinberg Award and the Bethlehem Griffiths Research Foundation Medal.

He is the joint recipient of a National Health and Medical Research Council program grant in stroke. He is a Consulting Editor for Stroke and has co-authored three books, numerous book chapters and over 300 peer-reviewed papers.

His major research interests involve clinical trials in stroke and the use of neuroimaging, particularly multimodal MRI, in the selection of acute stroke treatments. He is the Co-Principal Investigator with Professor Donnan of the EXTEND trial, a stroke trial aimed at extending the time window for thrombolysis using MRI in treatment selection.



PROFESSOR GEOFFREY A DONNAN AO

MBBS, MD, FRACP, FRCP (Edin), FAHMS

Professor Donnan is the Director of The Florey Institute of Neuroscience and Mental Health. He is Professor of Neurology at the University of Melbourne and Head of the Florey Department of Neuroscience and Mental Health, University of Melbourne.

His research interest is in clinical stroke management and he was co-founder of the Australasian Stroke Trials Network and Neuroscience Trials Australia. He is Past President of the Stroke Society of Australasia, the Australian Association of Neurologists and the World Stroke Organization. He has received numerous awards, including the American Stroke Association William Feinberg Award for excellence in clinical stroke research, the World Stroke Organization's leadership award and the Karolinska Stroke Award for excellence in stroke research. He was appointed as an Officer within the Order of Australia (AO) for his distinguished service to neurology and research contributions and is a Fellow of the Australian Academy of Health and Medical Sciences.



PROFESSOR PAUL FITZGERALD

MBBS, MPM, PhD, FRANZCP

Professor Fitzgerald is Professor of Psychiatry, Deputy Director and Consultant Psychiatrist at the Monash Alfred Psychiatry research centre, a joint research centre of Monash University and the Alfred Hospital in Melbourne. He is also the Director of the TMS program and research unit at The Victoria Clinic, Prahran and a Member of the Scientific Advisory Board of Bionomics.

Paul is a psychiatrist, has a Masters of Psychological Medicine and a research PhD. He runs a substantive research program utilising brain stimulation and neuroimaging techniques including transcranial magnetic stimulation, functional and structural MRI, EEG and near infrared spectroscopy. The program has focused on the conduct of investigative studies of brain function/dysfunction, as well as the conduct of a variety of novel clinical trials in mood, psychotic and developmental disorders.



PROFESSOR GRAEME JACKSON

BSc (Hons), MBBS, MD, FRACP

Professor Jackson is Senior Deputy Director of the Florey Institute of Neuroscience and Mental Health. He is a Professorial Fellow of the

Florey Department of Neuroscience and Mental Health, University of Melbourne.

His primary research interest is the application of Magnetic Resonance Imaging techniques to the understanding of epilepsy and brain function. His work is recognised for advancing the diagnosis and treatment of patients with epilepsy. Graeme is a neurologist at the Austin Hospital.

He is a recipient of the National Health and Medical Research Council Excellence Award.



MR BRUCE KEAN AM

Dip ChemE, FIEAus, FTS, FAICD, FRSA

Mr Kean was educated in Melbourne, studying chemical engineering and economics.

He has served on the boards of many public companies, including as Managing Director of Boral Ltd (1987-1994) and as a Director of AMP (1989-2000).

In community affairs, Bruce is a Director of the APEC Study Centre Advisory Board of the Royal Melbourne Institute of Technology and is a Governor of the Florey Institute of Neuroscience and Mental Health.

He was Chair of the Committee for Economic Development of Australia (1994-2002), The Sir David Martin Foundation (1994-1998) and The Mental Health Research Institute of Victoria (2001-2008) and Chairman of the ATSE Clunies Ross Foundation. He was a Member of the Prime Minister's Economic and Planning Advisory Committee (1992-1994) and Chair of the Commonwealth Government's Committee of Inquiry into the Standards and Conformance Infrastructure of Australia (1994-1995). In 1994 he was appointed a Member of the Order of Australia. In 2001 he was awarded the Governor General's Centenary Medal and in 2013 the inaugural ATSE Medal.



PROFESSOR TREVOR KILPATRICK

MBBS, PhD, FRACP

Professor Kilpatrick is a Professor of Neurology and Director of the Melbourne Neuroscience Institute at the University of Melbourne. He

is the leader of the Multiple Sclerosis (MS) Division at the Florey Institute of Neuroscience and Mental Health and is a neurologist and Head of the MS Unit at the Royal Melbourne Hospital. Trevor is a clinician scientist whose basic research focuses on the neurobiology of MS, in particular glial cell biology and regenerative medicine. Trevor has initiated a number of productive clinical research projects and established multicentre collaborations to study the genetics and epidemiology of MS and is developing translational platforms for therapeutics that target neurodegenerative diseases.



PROFESSOR CHRISTOPHER ROWE

FRACP, MD

Professor Rowe is the Director of Molecular Imaging Research, Department of Molecular Imaging and Therapy, Austin Health and a

consultant neurologist to the Memory Disorders Clinic at the Austin Hospital, Melbourne. He has published extensively on SPECT in epilepsy and beta-amyloid imaging in Alzheimer's disease. He applies state of the-art neuroimaging technology to develop and confirm new diagnostic tests and biomarkers. Chris is a Professorial Fellow, the University of Melbourne and the Florey Institute of Neuroscience and Mental Health. He is the Neuroimaging Stream Leader of the Australian Imaging, Biomarker and Lifestyle Flagship Study of Ageing (AIBL) and of the CRC for Mental Health and the former Chair, Neuroimaging Professional Interest Area, US Alzheimer's Association. In 2011 he received the Kuhl-Lassen Award, US Society of Nuclear Medicine, for his work in developing a test for the treatment of epilepsy and the diagnosis of Alzheimer's disease. He is the first Australian researcher to receive a major international award from this Society. In 2015 he received the Christopher Clark Award for Contributions to the Development of Brain Amyloid Imaging at the annual Human Amyloid Imaging Conference, Miami, USA.



PROFESSOR ROB SHEPHERD

BSc, DipEd, PhD

Professor Rob Shepherd is the Director of The Bionics Institute and Head of the Medical Bionics Department at the University

of Melbourne.

Rob has an international reputation as an expert in the field of neural prostheses. He led the preclinical teams that demonstrated the safety and efficacy of Cochlear's bionic ear in both adults and children and more recently his team developed a prototype bionic eye as part of an Australia-wide collaboration – Bionic Vision Australia – to develop a commercial bionic eye.

In his administrative role, Rob has overseen the expansion of the Bionic Ear Institute into The Bionics Institute and has widened the research portfolio to include cochlear implants, retinal prostheses and the development of a neurobionic platform technology designed to alleviate a range of intractable and debilitating central nervous system disorders (e.g. epilepsy, Parkinson's disease and pain management) via central nervous system based neural prostheses.



PROFESSOR IAN SMITH

PhD

Professor Smith is Vice-Provost (Research and Research Infrastructure) at Monash University. Ian completed his first degree

in Newcastle upon Tyne England and moved to Australia in 1984 to complete his PhD at Prince Henry's Institute Melbourne. In 1991 Ian moved to the Baker Heart Research Institute and was Associate Director until his move to Monash University in 2004. As Vice-Provost (Research and Research Infrastructure) Ian has responsibility for the oversight and management of the University's technology transfer activities, research alliances and research infrastructure as well as developing and implementing strategies to meet future university technology transfer, research and research infrastructure needs.

Ian is also a Professorial Fellow in the Department of Biochemistry and Molecular Biology at Monash University where he runs his research group.

He is an accomplished medical researcher and is recognised as a leader in his field. His research applies proteomics technologies to study the proteases involved in the generation and metabolism of peptide regulators involved in both brain and cardiovascular function. This research has resulted in over 240 publications and many patents. He receives regular invitations to speak at international meetings, many as a plenary speaker. His research has had a direct impact on human health and has led to changes in clinical practice.

Ian was a co-founder of a proteomics-based, publicly listed, biotechnology company and he continues to collaborate and consult widely with the pharmaceutical and biotechnology industry. Ian serves on six international editorial boards and over the years has held office-bearing positions in a number of national and international societies and had an active involvement in the organisation of numerous national and international scientific meetings.

He has held and continues to hold, a variety of senior government and non-government advisory board/committee memberships and currently holds the following positions: Adjunct Professor, Warwick University UK; Council and Board Member, Australian Institute of Nuclear Science and Engineering (AINSE); Non Executive Director, Auspep Pty Ltd; Non Executive Director and Chairman, Victorian Endowment for Science, Knowledge and Innovation (veski); Director, National Board and Victorian Node Proteomics Australia, Bioplatforms Australia (BPA); Chairman, Bioluminescence International External Advisory Board; Chairman, ESFRI Roadmap for Research Infrastructures and Chairman, Euro Bioimaging and Member of the Scientific and Ethics Advisory Board for CORBEL (Coordinated Research Infrastructures Building Enduring Life-science Services).

MEMBERS

Neurosciences Victoria is proud to be associated with its leading neuroscience research Members.

- ▶ Austin Health
- ▶ The Bionics Institute
- ▶ The Florey Institute of Neuroscience and Mental Health
- ▶ Melbourne Health
- ▶ Monash University
- ▶ Swinburne University of Technology
- ▶ The University of Melbourne

AUSTIN HEALTH

Austin Health is the major provider of tertiary health services, health professional education and research in the northeast of Melbourne and is world renowned for its research and specialist work in neurology, cancer, liver transplantation, spinal cord injuries, endocrinology, mental health and rehabilitation.

In 2011, the Melbourne Brain Centre opened at the Austin Hospital at Heidelberg, housing some of Australia's top researchers in neurosciences and mental health.

In the area of neuroscience, Austin Health is a leader in the diagnosis and management of epilepsy, stroke and dementia and has sub-specialist clinics for these and other neurological disorders including Parkinson's disease and multiple sclerosis.

The Austin Health Department of Molecular Imaging is a world leader in the development of scans for earlier and more accurate detection of Alzheimer's disease, Parkinson's disease and other neurodegenerative conditions. It is the Australian imaging lead site for national and international multi-centre studies such as the Australian Imaging, Biomarkers and Lifestyle Study of Ageing (AIBL), the Dominantly Inherited Alzheimer's Network (DIAN) and the CRC for Mental Health. The neuroscience research group within the Department of Molecular Imaging has extensive collaborations with both academic sites and major pharmaceutical companies worldwide.

Professor Christopher Rowe, the leader of the neuroscience PET research team and the Director, Molecular Imaging Research, was awarded the

Kuhl-Lassen Award for outstanding contribution to brain imaging by the US Society of Nuclear Medicine in 2011 and the 2015 Christopher Clark Award for Human Amyloid Imaging by his international peers. His group publishes 25 papers per year and receives over \$2.5m annually in research funds. The group also provides direction, expertise and radiopharmaceuticals for PET research at the Melbourne Brain Centre, the University of Melbourne in Parkville, Monash University and the University of New South Wales.

VISION

Austin Health will be renowned for excellence and outstanding leadership in healthcare, research and education.

MISSION

Austin Health is the major provider of tertiary health services and health professional education and research in the northeast of Melbourne.

VALUES

Our values guide our behaviour.

- ▶ Integrity – we exercise honesty, candour and sincerity.
- ▶ Accountability – we are transparent, responsible and answerable.
- ▶ Respect – we treat others with dignity, consideration, equality and value.
- ▶ Excellence – we continually strive for excellence.

www.austin.org.au

THE BIONICS INSTITUTE

The Bionics Institute is an independent, not-for-profit research organisation working in the field of medical bionics.

VISION

To lead the world in the development of innovative bionic health solutions through research.

MISSION

- ▶ Research, innovate and deliver bionic technologies that improve human health.
- ▶ Undertake high quality research that spans the biological, physical, engineering and medical sciences to achieve clinically relevant outcomes and train and inspire the next generation of researchers.
- ▶ Ensure our knowledge, technologies and skills provide an effective pathway from world-class research to advancing the Australian medical bionics manufacturing industry.

Using a multidisciplinary approach, the Bionics Institute's research aims to deliver new solutions to major health problems and builds on years of research experience and technological expertise in cochlear implants. The Institute brings together researchers from a diverse range of disciplines and collaborates with eminent clinicians from Melbourne's major hospitals to ensure that its work and bionic technologies result in clinically-relevant outcomes.

The Institute is focused on providing bionic solutions for otherwise untreatable or drug-resistant conditions of the central and peripheral nervous systems. Our three research programs – Bionic Hearing, Bionic Vision and Neurobionics – encompass the improvement and development of devices to address hearing loss, severe vision impairment and a range of intractable nervous system disorders.

BIONIC HEARING

Our research aims to develop new technologies and strategies that will improve the performance of cochlear implants and other hearing devices. Specific projects include:

- ▶ The development of an automatic system to program cochlear implants; particularly important for those too young to provide feedback as to whether a sound is too loud or too soft.
- ▶ The development of non-invasive and objective measures of hearing to improve detection and diagnosis of hearing problems, improve the fitting of cochlear implants and hearing aids and understand the variability of outcomes in users of these devices.
- ▶ The development of techniques to protect or halt the degeneration of the hearing nerve following deafness, including nanotechnology to introduce therapeutic drugs into the inner ear and gene therapy.
- ▶ Understanding neuroplasticity and how the brain responds to long-term electrical stimulation.

BIONIC VISION

Our research aims to develop safe and effective retinal prostheses for blind patients. In 2012 and as part of the Bionic Vision Australia consortium, three patients with retinitis pigmentosa were implanted with Australia's first prototype bionic eye. The Institute used its engineering expertise and experience in safety and biocompatibility studies to establish safe surgical procedures and effective electrical stimulation strategies for this prototype device. This clinical trial of Australia's first bionic eye was completed in 2014 and was a great success. The prototype device was shown to safely and effectively evoke visual images and allowed users to perceive shapes and movement and navigate around obstacles. During the past year, we have been preparing for a clinical trial of the next generation device, due to commence in late 2016. Our researchers have been working on all components of the bionic eye to improve the technology and the visual experience of recipients.

THE BIONICS INSTITUTE (CONTINUED)

NEUROBIONICS

Implantable devices are being developed to detect, predict and suppress abnormal neural activity in the brain or elsewhere in the body. Such devices incorporate many of the successful elements of the cochlear implant and insights obtained from the ongoing development of the bionic eye. The overall goal of our neurobionics program is to develop a sophisticated and flexible platform technology that can be tailored to treat a wide range of neurological disorders that have not responded to conventional treatments, including certain severe psychiatric conditions (e.g. obsessive compulsive disorder).

Our current research is focused on:

- ▶ The development of an advanced deep brain stimulation (DBS) system to treat movement disorders such as Parkinson's disease.
- ▶ Optimising outcomes in movement disorder patients with existing DBS devices.
- ▶ The development of a safe and effective diagnostic device for epilepsy and blackouts.
- ▶ The development of an implantable device to treat inflammatory bowel disease.

www.bionicsinstitute.org

THE FLOREY INSTITUTE OF NEUROSCIENCE AND MENTAL HEALTH

The Florey Institute of Neuroscience and Mental Health's mission is to improve lives through brain research. The Florey is one of the world's top three brain research centres. Led by neurologist, Professor Geoffrey Donnan AO, some 600 staff and 150 students are committed to addressing the causes of brain disease affecting up to one in four Australians.

The Florey has strong partnerships with Austin Health, the Royal Melbourne Hospital and the University of Melbourne, conducting research that underpins the future of brain health. Our imaging facilities offer unparalleled access to the workings of the brain. Internationally, our imaging team is recognised for maximising the potential of its magnetic resonance equipment, redefining the role of imaging as a diagnostic tool.

RESEARCH FOCUS

Ground breaking work continues at the Florey in a number of laboratory and clinical areas. Prevention, better treatments and cures are sought for:

- ▶ Alzheimer's disease
- ▶ Depression
- ▶ Epilepsy
- ▶ Parkinson's disease
- ▶ Huntington's disease
- ▶ Bipolar disorder
- ▶ Stroke
- ▶ Motor neurone disease
- ▶ Multiple sclerosis
- ▶ Schizophrenia
- ▶ Addiction
- ▶ Anxiety
- ▶ Autism
- ▶ Cardiovascular disease
- ▶ Pain
- ▶ Traumatic brain and spinal cord injury

RESEARCH DIVISIONS

Multiple Sclerosis

Professor Trevor Kilpatrick

Spanning the Florey, the University of Melbourne and the Royal Melbourne Hospital, the Division adopts a multifaceted approach to researching multiple sclerosis. The research recognises the need to understand the genetic determinants, environmental precipitants and molecular drivers of the disease if we are to prevent or reduce damage. The Division has developed strong collaborations with colleagues throughout Australia in order to assemble large cohorts of patients to interrogate the genetics and epidemiology of the disease and to access biological samples to adopt a fully integrated translational approach.

Stroke

Professor Julie Bernhardt and Professor Vincent Thijs

The Division has five main research teams: stroke preclinical science, the AVERT early intervention research program, the neurorehabilitation and recovery laboratory, epidemiology and public health and clinical trials. Investigations into neuroprotective and neuroregenerative drugs, advancing stroke care and predicting further incidence of stroke through biomarkers and imaging are part of this Division's work.

Neurodegeneration

Professor Phil Beart and Professor Colin Masters

This Division focuses on how neurons live, die and can be rescued to improve brain function in Alzheimer's, Parkinson's and motor neurone diseases. The Division focuses on; Alzheimer's disease, Parkinson's disease, motor neurone disease, oxidation biology, neuropharmacology, steroid neurobiology, metalloproteomics and stem cells for disease modelling and therapies. The division contributes researchers to the Australian Imaging, Biomarker and Lifestyle (AIBL) Study of Ageing. The aim of AIBL is to discover which biomarkers, cognitive characteristics and health and lifestyle factors determine subsequent development of symptomatic Alzheimer's disease.

THE FLOREY INSTITUTE OF NEUROSCIENCE AND MENTAL HEALTH (CONTINUED)

Biological Psychiatry and Mental Health

Professor Brian Dean and Professor Richard Kanaan

This Division undertakes basic scientific, clinical and public health research. This includes not only work in laboratories but also working with the community to run trials that help gather information about the illnesses studied. The work continues to enrich our understanding of mental illness, including depression, bipolar disorder and schizophrenia. The division includes the Victorian Brain Bank, a key member of the Australian Brain Bank Network which collects, stores and distributes healthy and diseased post-mortem brain tissue for researchers around Australia and internationally.

Systems Neurophysiology

Professor Robin McAllen

This research area focuses on brain function in health and disease. The division's focus is on how the brain controls basic bodily functions such as blood pressure, body temperature, body fluids and breathing. A second focus is on the ways that disease processes change the excitability of neurons. A third focus is on the heart and kidneys and their complex interactions with the nervous system in health and disease. Finally, the autonomic nervous system is an increasing area of interest, characterising the vagal nerve inputs to the gut and their role in controlling inflammatory diseases.

Imaging

Professor Alan Connelly and Professor Graeme Jackson

The Division studies many disease states, particularly epilepsy. Other disorders studied include multiple sclerosis, stroke, tumours, dementia and a range of mental health disorders such as schizophrenia. The Magnetic Resonance Imaging (MRI) Technical Development Program is world-leading in the highly active field of diffusion MRI.

Neuropeptides

Professor Ross Bathgate

This Division conducts multi-disciplinary studies on the relaxin family of peptides/hormones and their receptors. The Division focuses on determining the role of these peptides and their target receptors in a wide range of physiological and disease states, as well as identifying small molecule agonists and antagonists using sophisticated receptor stabilisation techniques.

Behavioural Neuroscience

Professor Andrew Lawrence and Associate Professor Amy Brodtmann

This Division focuses on human cognitive disorders and the use and development of animal models. The latter reflects aspects of human disorders such as addiction, anxiety, depression, schizophrenia, autism and neurodegenerative conditions such as Huntington's disease, stroke and dementia. The division also has a deep interest in gene-environment interactions, and using imaging and behavioural models to characterise neurodegeneration.

Brain Development and Regeneration

Professor Seong-Seng Tan

This division conducts research to understand how new brain cells are generated, become connected and survive during stress, which is pivotal to preventing and treating brain disorders. The underlying drivers of brain cell assembly are undoubtedly genetic, but the outcomes are also shaped by environmental influences. Such knowledge will provide new understanding of the causes of mental illnesses such as autism, schizophrenia and epilepsy.

Epilepsy

Professor Graeme Jackson and Professor Steven Petrou

At the Florey's Austin campus, researchers have been undertaking high impact research using MRI for more than fifteen years to understand the structural and functional basis of human epilepsy. At the Florey's Parkville campus, research has revealed many of the fundamental neurobiological mechanisms by which genetic abnormalities give rise to epilepsy.

MEDICAL INFRASTRUCTURE SERVICES

Neuroscience Trials Australia

Led by Dr Tina Soulis, Neuroscience Trials Australia is an Australian-based, not-for-profit clinical trials management service specialising in neuroscience.

Psychotropic Drug Advisory Service

The Psychotropic Drug Advisory Service provides an independent central advisory and contact service with regard to the interaction between medicines used to treat mental illnesses and other drugs that affect the way we think, feel and behave. The service is provided by pharmacist Christine Culhane.

Victorian Brain Bank Network

Led by Professor Catriona McLean, the Network collects, processes and stores post-mortem human brains and related samples from individuals who have had neurological diseases (i.e. Alzheimer's disease, motor neurone disease and Parkinson's disease), psychiatric disorders (i.e. bipolar mood disorder, depression and schizophrenia) as well as normal 'control' cases.

The Florey runs or is involved in the following neuroscience platforms.

- ▶ Human and animal MRI
- ▶ Positron Emission Tomography – Computed Tomography (PET-CT)
- ▶ Advanced microscopy
- ▶ Core animal services
- ▶ Behavioural services
- ▶ Histology services
- ▶ Fluorescence-activated cell sorting facility
- ▶ Statistics and decision analysis

www.florey.edu.au

MELBOURNE HEALTH

For more than 167 years we have provided a comprehensive range of acute, sub-acute and community public health services to our local community within Melbourne's west and north, as well as to regional and rural Victorians and interstate patients and consumers.

Today we provide care through three key services:

- ▶ The Royal Melbourne Hospital
- ▶ NorthWestern Mental Health
- ▶ The Doherty Institute for Infection and Immunity

The Royal Melbourne Hospital is our acute and sub-acute academic health service. As one of the largest hospitals in Victoria, The Royal Melbourne Hospital in Parkville provides a comprehensive range of health services across two campuses. Our City campus provides general and specialist medical and surgical acute services. Sub-acute services, including rehabilitation and aged care, outpatient and community programs are provided from our Royal Park campus.

NorthWestern Mental Health is our mental health service. As the largest provider of mental health services in Victoria, NorthWestern Mental Health works in partnership with consumers and carers to provide a comprehensive suite of general and specialist services to youth, adult and aged people within the community, residential and health services.

The Doherty Institute for Infection and Immunity is our infection and immunity service. The Doherty, a partnership with the University of Melbourne, aims to be a world-class institute that combines research into infectious disease and immunity with teaching excellence, reference laboratory diagnostic services, epidemiology and clinical services.

VISION

Our vision is to be First in Care, Research and Learning.

VALUES

- ▶ Caring – We treat everyone with kindness and compassion.
- ▶ Excellence – We are committed to learning and innovation.
- ▶ Integrity – We are open, honest and fair.
- ▶ Respect – We treat everyone with respect and dignity at all times.
- ▶ Unity – We work together for the benefit of all.

STRATEGIC PRIORITIES

We aim to achieve our vision by focussing on six strategic priorities:

- ▶ Care and outcomes – Deliver outstanding care and outcomes.
- ▶ Patient and consumer experience – Partner with and empower our patients and consumers.
- ▶ Innovation and Transformation – Embrace innovative thinking in everything we do.
- ▶ Workforce and culture – Enable our people to be the best they can be.
- ▶ Collaboration – Maximise the potential of our partnerships.
- ▶ Sustainability – Be a recognised, respected and sustainable health service.

The Royal Melbourne Hospital is one of two adult trauma centres in Victoria and is home to one of the three nodes of the Melbourne Brain Centre, a state-of-the-art neurosciences facility offering new hope for Australians suffering from acute brain episodes such as stroke and degenerative brain disorders.

www.thermh.org.au

MONASH UNIVERSITY

Monash University is strong and very active in neuroscience research and takes a multidisciplinary approach, involving the Faculties of Medicine, Nursing and Health Sciences, Pharmacy (MIPS), Engineering, Science, Art and Design, as well as the major Monash affiliated teaching hospitals, all supporting wide ranging programs of research. This multidisciplinary approach has led to the establishment of MIME (Monash Institute for Medical Engineering) which has a strong focus on medical device research, particularly in the area of neuroscience.

Monash neuroscientists conduct leading edge research and clinical investigation in key areas of neuroscience and mental health. These include:

- ▶ Neuroimaging
- ▶ Neuroinflammation
- ▶ Developmental neuroscience
- ▶ Developmental brain injury
- ▶ Regenerative medicine
- ▶ Ageing and neurodegeneration
- ▶ Brain plasticity and repair
- ▶ Huntington's disease
- ▶ Cognition
- ▶ Control of movement and emotions
- ▶ Anxiety disorders
- ▶ Alzheimer's disease
- ▶ Stroke
- ▶ Sensory physiology
- ▶ Schizophrenia
- ▶ Depression
- ▶ Autism
- ▶ Attention deficit hyperactivity disorder
- ▶ Traumatic brain injury
- ▶ Bipolar affective disorder
- ▶ Intellectual disability
- ▶ Metabolic neuroscience

Major Collaborating Research Groups and themes include:

- ▶ Monash Biomedical Imaging (MBI) Facility – Professor Gary Egan
- ▶ Ritchie Centre at the Monash Institute for Medical Research – Professor Graham Jenkin
- ▶ Stroke and vascular disease – Professor Chris Sobey
- ▶ Brain development and vision – Dr James Bourne
- ▶ Molecular neurotrauma and haemostasis laboratory (Monash University, Alfred Hospital campus) – Professor Rob Medcalf
- ▶ Traumatic brain injury (Alfred Hospital) – Professor Jamie Cooper
- ▶ Biomarkers for traumatic brain injury and recovery (Monash) – Professor Ramesh Rajan
- ▶ Neuroscience research in ocular immunology – Professor Paul McMenamin
- ▶ The Monash Alfred Psychiatry research centre (MAPrc) – Professor Paul Fitzgerald
- ▶ Higher order processing of vocalisations in the auditory areas of the cortex – Professor Ramesh Rajan
- ▶ Monash Institute for Cognitive and Clinical Neurosciences (MICCN) – Professor Kim Cornish
- ▶ Monash Institute for Medical Engineering (MIME) – Professor Jeffrey Rosenfeld
- ▶ Monash Biomedicine Discovery Institute (BDI) – Professor John Carroll

'DIRECT TO BRAIN' BIONIC EYE – MONASH BIONIC VISION GROUP

Professor Jeffrey Rosenfeld AM, OBE is a Principal Investigator in the Monash Bionic Vision Group that aims to develop a bionic vision direct to brain implant (The 'Gennaris'). This is a multi-tiled microelectrode wireless device implanted in the primary visual cortex of adults with acquired blindness. The tiles are connected to a digital camera via an advanced vision processor mini-computer. This is a key example of 'bench to bedside' translational research and has taken place in the last five years.

MONASH UNIVERSITY (CONTINUED)

It is an inter-disciplinary research program that includes Monash University departments of Electrical Engineering (Professor Arthur Lowery), Physiology (Professors Marcello Rosa and Ramesh Rajan), Surgery and Design. The Alfred Hospital (Neurosurgery and Ophthalmology) is the clinical site for the first in human trial, planned for 2016.

Research at the University is underpinned by a series of core technology platforms, including:

- ▶ Structural biology/Cryo EM/high-throughput protein production
- ▶ Genomics, bioinformatics and proteomics
- ▶ Optical imaging
- ▶ Monoclonal antibody production (MATF)
- ▶ Mouse phenomics/transgenics
- ▶ Biomedical imaging and image processing
- ▶ Image driven High Performance Computing (MASSIVE)
- ▶ Fragment Based Drug Design and development
- ▶ Biostatistics, data-management and bio-banking
- ▶ Engineering (additive Manufacturing, X-Ray diffraction etc)
- ▶ Material sciences
- ▶ Nanofabrication (MCN)
- ▶ Drug discovery, medicinal chemistry, drug candidate optimisation
- ▶ Clinical trials

The University has a strong international reputation in medical research, including:

- ▶ Regenerative medicine, stem cells and developmental biology
- ▶ Cardiovascular and thrombosis
- ▶ Cancer
- ▶ Structural biology and drug development
- ▶ Public health and epidemiology
- ▶ Infection and immunity
- ▶ Inflammation, allergy and autoimmunity
- ▶ Health science and global health
- ▶ Rural health
- ▶ Indigenous health
- ▶ Mental health and cognitive neurosciences
- ▶ Medical engineering

MEDICINE, NURSING AND HEALTH SCIENCES

The Faculty of Medicine, Nursing and Health Sciences offers outstanding training through courses that include Medicine, Psychiatry, Behavioural Neuroscience, Biomedical Science, Psychology, Radiography and Medical Imaging. The Faculty has strong links with research institutes such as the Baker/IDI Research Institute, the Hudson Institute, the Macfarlane Burnet Institute for Medical Research and Public Health, as well as with our major teaching hospitals, principally Monash Medical Centre, The Alfred Hospital and Box Hill Hospital. In total, the Faculty operates in 125 practices and 68 hospitals, providing outstanding facilities and resources for clinical teaching. Some restructuring in the Faculty has led to the creation of two new Institutes; The Monash Institute for Cognitive and Clinical Neurosciences and the Monash Biomedicine Discovery Institute (BDI), which has a strong neuroscience research stream.

MONASH AT A GLANCE

- ▶ Monash is Australia's most internationalised university.
- ▶ Monash has more than 63,000 students from over 100 countries.
- ▶ Monash is a member of the prestigious Group of Eight (Go8) universities, recognised for excellence in teaching, learning, research and graduate outcomes.
- ▶ The Monash/Clayton cluster is home to CSIRO, the Australian Synchrotron, Monash Medical Centre, Melbourne Centre for Nanofabrication (MCN), Australian Regenerative Medicine Institute (ARMI) and the Hudson Institute for Medical Research.
- ▶ Monash has eight campuses: six in Australia, one in Malaysia, one in South Africa and a centre in Prato, Italy.
- ▶ Monash has formed strong strategic partnerships in the UK (Warwick and Newcastle Universities), China (South East University, Suzhou) and India (Indian Institute of Technology Bombay, Mumbai).

www.med.monash.edu.au

SWINBURNE UNIVERSITY OF TECHNOLOGY

Swinburne University of Technology is committed to quality research with real-world applications. We deliver innovative research solutions to industry problems and our world-class research reputation is growing fast. We have a vibrant academic community and we invest strategically in advanced facilities. We draw on our internationally recognised expertise and our outstanding infrastructure when collaborating with industry to produce quality solutions; solutions that often result in the commercialisation of new ideas or products.

Swinburne gives its Masters by research and PhD candidates the chance to be exposed to big ideas and to learn what it takes to find solutions that advance our society. We offer our research students the opportunity to participate in world-changing projects and support them with the right levels of funding. Swinburne has a selective and focused approach to the highest quality research. This approach has been proven to have merit, with Swinburne now listed as one of the top 400 research universities in the world, according to the prestigious Academic Ranking of World Universities.

BRAIN AND PSYCHOLOGICAL SCIENCES RESEARCH CENTRE

The principal aim of the Brain and Psychological Sciences Research Centre (BPsyC) is to conduct high quality research in psychological sciences and human neuroscience in order to improve understanding of the human condition across the lifespan and contribute to the wellbeing of individuals and communities. BPsyC encompasses basic research, from cellular and genetic science, all the way through to brain and behavioural sciences.

By increasing our understanding of human brain and psychological processes, we aim to inform the development and evaluation of applications that improve the wellbeing of individuals with specific conditions and in specific contexts. We have particular interests in the study of compromised mental and cognitive health.

BPsyC brings together different disciplines with common interests in biopsychosocial factors associated with the healthy and dysfunctional human mind and brain. These include psychologists, psycho-physiologists, physicists, neuroscientists and medical researchers.

Specific areas of interest include:

- ▶ Brain functions, structures, connectivity and dynamics
- ▶ Cellular neuroscience and the effects of biomagnetism
- ▶ Cognitive neurosciences and cognitive neuropsychology
- ▶ Social and affective neurosciences
- ▶ Clinical disorders and their treatment, including e-based interventions
- ▶ Clinical and social psychology
- ▶ Normal and abnormal ageing and infant development
- ▶ The neuroscientific study of decision-making
- ▶ Understanding disorders of mental health

Our state-of-the-art equipment includes:

- ▶ Magnetic resonance imaging
- ▶ Magnetoencephalography
- ▶ Electroencephalography
- ▶ Trans-cranial magnetic stimulation
- ▶ TDCS and neurofeedback
- ▶ A radiofrequency laboratory
- ▶ A computer-assisted interview facility
- ▶ A national internet-based psychological assessment and treatment centre (National e-Therapy Centre)

In addition, a clinical trials facility focuses on evaluating the effects of interventions on cognition, mental health, well-being and specific functions. Our research staff is actively involved in teaching and we have links to clinical services, industry and the community.

SWINBURNE UNIVERSITY OF TECHNOLOGY (CONTINUED)

Our partnerships and collaborations promote innovative solutions to scientific and community concerns. BPsyC strives to foster local and international research collaboration with government, industry and other academic institutions and has been successful in attracting nationally competitive grants, national and international industry contracts and government tenders.

Associate Professor Joseph Ciorciari is the Director of the BPsyC and is a cognitive neuroscientist with many years of collaborative research experience in the study of normal and abnormal brain function, collaborating with researchers both nationally and internationally. Previously, as the Deputy Head of the Psychological Sciences and Statistics Department, he convened and led undergraduate programs associated with psychology and psychophysiology. More recently he designed and implemented a unique neuroscience undergraduate program. He is supported by the BPsyC Deputy Directors, Professor Susan Rossell and Professor Greg Murray, both of whom have clinical backgrounds and international reputations in their respective fields.

BPSYC RESEARCH STAFF

- ▶ Associate Professor Joseph Ciorciari – Director
- ▶ Professor Susan Rossell – Deputy Director, Operations
- ▶ Professor Greg Murray – Deputy Director, Administrative
- ▶ Dr Jo Abbott
- ▶ Dr Claire Ahern
- ▶ Professor Glen Bates
- ▶ Dr Rachel Batty
- ▶ Dr Jennifer Beaudry
- ▶ Associate Professor Sunil Bhar
- ▶ Dr Steve Bowe
- ▶ Dr Jay Brinker
- ▶ Dr Jahar Bhowmik
- ▶ Associate Professor Roger Cook
- ▶ Dr Brian Cornwell
- ▶ Associate Professor Christine Critchley
- ▶ Dr Roslyn Galligan
- ▶ Dr Matthew Hughes
- ▶ Dr Jordy Kaufman
- ▶ Charlotte Keating
- ▶ Associate Professor Ann Knowles
- ▶ Dr Sumie Leung
- ▶ Professor David Liley
- ▶ Dr Michelle Lim
- ▶ Dr Clare McMahan
- ▶ Associate Professor Denny Meyer
- ▶ Professor Sue Moore
- ▶ Dr Maja Nedeljkovic
- ▶ Dr Richard Nibbs
- ▶ Dr Julian Oldmeadow
- ▶ Dr Conrad Perry
- ▶ Dr Jeffrey Pfeifer
- ▶ Dr Christopher Plummer
- ▶ Dr Diane Sivasubramaniam
- ▶ Dr Stephen Theiler
- ▶ Dr Neil Thomas
- ▶ Dr Ben Williams
- ▶ Dr Lisa Wise
- ▶ Professor Andrew Wood
- ▶ Dr Catherine Wood
- ▶ Dr William Woods

www.swinburne.edu.au/lss/bpsyc

THE UNIVERSITY OF MELBOURNE

The Melbourne Neuroscience Institute (MNI) is the principal body for the promotion of cross-disciplinary research in the Neurosciences at the University of Melbourne. The calendar year of 2015 has been a period of immense activity for the MNI. Our sponsored themes focusing on Neural Engineering, Imaging, Stem Cell Science and Music Mind and Wellbeing continue to thrive.

- ▶ **Stem Cells Australia** The harnessing of stem cell biology to study the function of neural networks in vitro keeps our neuroscientists at the cutting edge, for example those who are studying the pathogenesis of epilepsy and Alzheimer's disease.
- ▶ **The Melbourne Brain Centre Imaging Unit** Research undertaken on the 7 Tesla MRI and PET-CT scanners is progressing well and involves a mature synthesis of basic development work and clinical application.
- ▶ **The Centre for Neural Engineering** The team continues to undertake world leading research in the development of microsensor technology and its application to monitoring the activity of neurological disease. The commissioning of the Helium ion microscope within the CfNE has also provided our investigators with a rare opportunity to visualise the microstructure of the biological and physical systems they work with at unparalleled resolution.
- ▶ **Music, Mind and Wellbeing** This initiative has continued its successful partnership with the Melbourne Recital Centre to deliver the 'Music on the Mind' seminar series and continues to voice the importance of music to the general community, to education and to medical rehabilitation. The initiative also provides insights into how music education is optimised and how music is appreciated as a key cognitive process.

Linkages with our partner institutes were further enhanced during 2015 and 2016. Of note, we held a theme-based conjoint workshop with the University of Calgary/Hotchkiss Institute focusing on concussion. The workshop was highly successful and has led to the establishment of key partnerships focusing on paediatric trauma, diagnostic imaging, guidelines for management of concussion and discovery based research. The two institutes are currently planning a follow-up workshop in 2017.

The MNI also fostered a strategic alliance with the Monash Institute for Pharmaceutical Sciences supported via our Interdisciplinary Seed Funding Scheme. Two collaborative projects between the two Institutes were supported through this interaction and other concrete interactions have been formulated for mutual benefit. Another University of Melbourne/Monash University program is 'Project Mercury' – a combined initiative with a \$60m+ infusion of capital. The aim of the initiative is to promulgate drug development and diagnostics. The targets are oncology, neuroscience, neuropsychiatry, immune diseases, infectious diseases and childhood diseases.

The Yulgilbar Foundation has generously provided the MNI in excess of \$2 million in funding to be devoted to a young clinician's research network. The MNI is using this funding to sponsor a cohort of young clinical investigators, on the basis that the promotion of clinical translation is a core responsibility of MNI that needs to be nurtured.

We will continue to nurture strong and productive interactions with the commercial sector, including the pharmaceutical industry, imaging vendors and key partners of the University of Melbourne, such as IBM. We will also nurture our extant interactions with our international academic partners, for example the Hotchkiss Institute, Calgary and Université Pierre et Marie Curie, Paris. The MNI also actively promotes ongoing interactions with other University of Melbourne Institutes. We already interact with the Melbourne Social Equity Institute to promote disability oriented research and plan to interact substantively with the Melbourne Networked Society Institute in the area of technological developments for the elderly, in particular to reduce the impact of cognitive decline.

Our public seminar program incorporates these themes and enables interaction with a number of Hallmark Research Initiatives including the Ageing, Disability and Indigenous Research Initiatives. Every year we seek to advance our public outreach program and in 2016 we are working with the Music Mind and Wellbeing team to arrange a plenary session at Melbourne Music Week.

www.neuroscience.unimelb.edu.au

RISK AND AUDIT COMMITTEE

The Risk and Audit Committee is a committee of the NSV Board that oversees the audit and risk functions of the Company. The Committee is comprised of the Chair of the Board and non executive Independent Directors.

The primary objective of the Committee is to assist the Board in fulfilling its responsibilities by:

- ▶ Overseeing the internal control functions of the Company and its corporate entities.
- ▶ Reviewing the relationship of those functions to external audit.
- ▶ Reviewing the financial statements and reports.
- ▶ Identifying the areas of risk affecting the Company and its corporate entities.
- ▶ Monitoring the Company's development, implementation and audit of policies and practices in relation to risk.
- ▶ Monitoring compliance with law.
- ▶ Assisting the Company to identify and manage risks and opportunities in the commercialisation of intellectual property.
- ▶ Reviewing proposals for resource allocation and making recommendations to the Board.

The Committee also oversees the activities of the Remuneration Committee, that has carriage of the remuneration framework and level for the CEO as well as the CEO's performance plan.

MEMBERSHIP

Mrs Jan West AM – Chair

Mr Bill Burdett

Ms Debbie Beadle

Mr Bruce Kean AM

SCIENTIFIC COUNCIL

The Scientific Council is a committee of the NSV Board, established to generate initiatives and facilitate collaboration and the sharing of knowledge, skills and resources across a widely representative neuroscience community.

The Council is comprised of representatives from each of NSV's Members, as well as scientific directors of the NSV Board.

The strategic aims of the Council are:

- ▶ To focus the Council to that of a strategic and operational interaction between Members, directed towards development of Melbourne as a global centre for neuroscience.
- ▶ To identify and fast track major initiatives and maintain strong communication with government, industry and philanthropy where appropriate.
- ▶ To provide a forum for senior management across the Victorian neuroscience cluster to identify and manage priorities and strategies for the Victorian neuroscience community.

Operational activities applied to achieve these strategic aims include:

- ▶ Maintain an awareness of issues relevant to neuroscience across the sector, locally, interstate and internationally.
- ▶ Identify and coordinate new program development where there is a major technology gap in Victoria and identify world-class staffing for these initiatives.
- ▶ Support important capability areas where there is opportunity.
- ▶ Form working groups to facilitate liaison and development of initiatives.

MEMBERSHIP

Professor Graeme Jackson – Chair

Associate Professor Joe Ciorciari

Professor Stephen Davis AM

Professor Geoffrey A Donnan AO

Professor Paul Fitzgerald

Professor Trevor Kilpatrick

Dr Andrew Milner

Professor Christopher Rowe

Professor Rob Shepherd

Professor Ian Smith

FINANCIALS

NEUROSCIENCES VICTORIA LIMITED ABN 56 094 548 973

STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 30 JUNE 2016

	Consolidated 2016 \$	Parent 2016 \$	Parent 2015 \$
Revenues	815,644	745,719	626,423
Employee benefits expense	-586,233	-586,233	-578,779
Depreciation, amortisation and impairment losses	-2,334	-2,334	-2,567
Business development expense	-62,782	-62,782	-59,118
Insurance expense	-12,214	-12,214	-11,227
Professional fees	-39,826	-39,826	-51,200
Travel expense	-58,871	-58,871	-48,643
Occupancy expense	-2,880	-2,880	-6,968
Other expenses	-22,125	-22,115	-20,145
Profit before tax	28,379	-41,536	-152,224
Income tax expense	-	-	-
Profit for the year	28,379	-41,536	-152,224
Other comprehensive income/(expense)	-	-	-
Total comprehensive income/(expense) for the year	28,379	-41,536	-152,224

STATEMENT OF FINANCIAL POSITION

AS AT 30 JUNE 2016

	Consolidated 2016 \$	Parent 2016 \$	Parent 2015 \$
Current assets			
Cash and cash equivalents	310,588	310,588	299,599
Trade and other receivables	290,897	290,897	67,116
Other financial assets	1,600,000	1,600,000	1,800,000
Other assets	187,332	187,332	130,635
Total current assets	2,388,817	2,388,817	2,297,350
Non-current assets			
Property, plant and equipment	6,588	6,588	7,582
Other financial assets	7	7	7
Total non-current assets	6,595	6,595	7,589
Total assets	2,395,412	2,395,412	2,304,939
Current liabilities			
Trade and other payables	276,103	346,028	224,929
Borrowings	10	-	-
Employee benefit liabilities	165,960	165,960	156,677
Total current liabilities	442,073	511,988	381,606
Non-current liabilities			
Employee benefit liabilities	3,215	3,215	1,588
Total non-current liabilities	3,215	3,215	1,588
Total liabilities	445,288	515,203	383,194
Net assets	1,950,124	1,880,209	1,921,745
Equity			
Reserves	2,248,420	2,248,420	2,248,420
Retained earnings	-298,296	-368,211	-326,675
Total equity	1,950,124	1,880,209	1,921,745

STAFF

ANDREW MILNER PhD

Chief Executive Officer and Managing Director

CLARE FAUX PhD

Office Manager and Researcher

IRWIN SAUNDERS

Chief Financial Officer

JACKIE THOMPSON

Accounts

MARION THOMPSON

Company Secretary



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