SCHIZOPHRENIA RESEARCH INSTITUTE

Opportunity
for a Better Future

ANNUAL REPORT 2011

Our Mission

To discover the ways to prevent and cure schizophrenia

contents

Introduction

Chairman's report

Opportunity – bringing people together

The Schizophrenia Research Institute continues to grow and thrive. We are constantly seeking and embracing new opportunities to advance our knowledge of schizophrenia.

The Schizophrenia Research Institute believes that medical research is the best way to discover the clues for solving schizophrenia. It is only with scientific research that we can understand the genetic contributions to the condition, how we can better treat schizophrenia or even prevent it.

We continue to pursue opportunities to raise the much needed money to support our scientists in their valuable work by strengthening our partnerships with the many individuals, organisations and businesses that support the Institute.

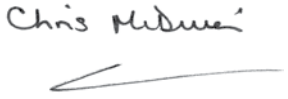
In 2011 our signature gala black tie event, 'Spark of Genius', was highly successful in raising funds and building partnerships because of the unique formula of having one mystery genius guest at each table. Our genii were leaders in their fields ranging from the arts, media, sports, politics, entertainment, business and academia. Having so many people of renown gathered in one room created a great buzz and high level of excitement that provided everyone with the opportunity to have a wonderfully entertaining and inspirational evening.

The Spark of Genius event was dedicated to the Schizophrenia Research Laboratory*, headed by Professor Cyndi Shannon Weickert, the Macquarie Group Foundation Chair of Schizophrenia Research.

The Institute thanks our evening's principal sponsor the Macquarie Group Foundation and our government supporter, NSW Health. In addition we thank our major sponsors,The Ainsworth Family, Brookfield Multiplex, City of Sydney, Etihad, KPMG, Mulyan Wines, The Northside Group-Ramsay Health and Schweizer Kobras. In addition we thank our genii, the organizing committee members and all our guests without whom the evening would not have been the success it was.

The Board has continued to actively support the Institute in all its work and all meetings have been well attended. Peter Maher retired as Chairman of the Board, a position he has held with great distinction since 2006, but we are pleased to say he remains as a Director. During the year we welcomed as new Directors Chad Barton, CFO of Salmat, and Norbert Schweizer, Principal lawyer of Schweizer Kobras.

The Institute thanks our supporters, volunteers and donors who are all vital to our program, extending our opportunities to bring people together to solve the mystery of schizophrenia.



Chris McDiven AM
Chairman

The Schizophrenia Research Laboratory is a joint initiative of the Schizophrenia Research Institute, University of NSW, Neuroscience Research Australia (NeuRA), and the Macquarie Group Foundation. It is supported by NSW Health.

CEO's report

Opportunity – the evolution of research

At the Institute we continue to embrace opportunities to develop our work, to collaborate with our peers and to foster our relationships with our collaborative partners and supporters.

Scientific study and research is a constantly changing field, with expectations continuously shifting and evolving.

As an Institute and a scientific community we continue to grow and mature, and this evolution is evident in the development of a proactive research agenda and in our relationships with our collaborative partners. It is also seen in the development of our science as a body of knowledge and of the technological tools that are now rapidly advancing our work.

In genetic research, these developments are very apparent. Fifteen years ago when the Institute first formed we were searching for the single gene thought to be responsible for schizophrenia.

It is now clear that there is not one gene. In fact there are likely to be multiple susceptibility genes, and no primary susceptibility gene to focus on. We are also realising that it may in fact be the way that genes talk to each other and interact with environmental factors that could hold the key to understanding the underlying biological processes of the illness.

It is in this ongoing and rapidly advancing scientific framework that we seek every opportunity to move forward in our research.

Our work at the Australian Schizophrenia Research Bank has been embraced by our international colleagues, playing a key role in an international genetics collaborative study that investigated genetic variants associated with schizophrenia. This is a first for the Bank, and one that marks the beginning of a more extensive contribution to the international research community.

Our first clinical trial being undertaken by Prof. Cyndi Shannon Weickert, the Macquarie Group Foundation Chair, continues at the Schizophrenia Research Laboratory, with preliminary results expected in late 2012.

Institute Chairman, Chris McDiven AM was appointed a Member of the Order of Australia in the 2011 Australia Day Honours for service to the Liberal Party of Australia, and to the community through women's and education organisations. I congratulate Chris on her appointment and her dedication to her community.

Our scientists and collaborative partners are leaders in their fields, exploring the shifting research landscape and the opportunities and challenges that this brings. This 2011 Annual Report highlights just some of their work, and where this research is leading us.

Prof. Vaughan Carr
Chief Executive Officer

Board of Directors

Chris McDiven AM

Non-Executive Director

Chris McDiven AM joined the board of the Institute in 2009. Currently a Company Director. Qualified school teacher. Previously President Kambala School Council; Federal President Liberal Party of Australia; NSW State President Liberal Party of Australia. Other not-for-profit board positions have included the Association of Independent Schools (NSW); Australian Sports Foundation; Keep Australia Beautiful Council; International Women's Democrat Union; International Committee of Asian Political Parties; Menzies Research Centre; National Foundation of Australian Women; Powerhouse Museum Fund Raising Committee; Rotary Club of Sydney.

Professor Vaughan Carr

Chief Executive Officer

Executive Director

A board member since 2004, Prof. Vaughan Carr is the CEO of the Schizophrenia Research Institute and Professor of Schizophrenia Epidemiology and Population Health at the University of New South Wales. He was previously Professor of Psychiatry at the University of Newcastle and is Past President, Australasian Society for Psychiatric Research.

Chad Barton

Non-Executive Director

Chad Barton joined the board in July 2011. He is the Chief Financial Officer at Salmat Limited and has previously held the positions of Chief Financial Officer with Electronic Data Systems Corporation (EDS), a HP company, in Australia and New Zealand as well as CFO for EDS's Global Financial Services practice. Prior to this, he was Commercial Director with SingTel Optus Limited. Chad is a Chartered Accountant and has professional experience at Arthur Andersen. Appointed: August 2011

Dr Matthew Cullen

Deputy Chairman

Non-Executive Director

Dr Matthew Cullen joined the board in 2004. He is Group Executive of Medibank Health Solutions and Visiting Medical Officer at St Vincent's Hospital Sydney. He is a Deputy Chairman of the Schizophrenia Research Institute, Fellow of the Royal Australian and New Zealand College of Psychiatrists, a Member of the Australian Institute of Company Directors, and Associate Fellow of the Australian College of Health Service Executives.

Peter James Maher

Chairman

Non-Executive Director

Peter Maher became a board member in 2003 and was Chairman from 2006 until November 2010. He is Group Head of Macquarie Group Ltd's Banking and Financial Services Group. He is also the current Chairman of Religare Macquarie Wealth Management Ltd, Director of Macquarie Financial Services Holdings (Asia) Pty Ltd, Macquarie Digital Pty Ltd, Macquarie Equities Ltd, Macquarie Investors Pty Ltd and Risk Advice Specialists Pty Ltd. He is also Chairman of the Financial Services Council.

The Board of Directors *continued*

Rita Mallia

Non-Executive Director

A board member since 2003, Rita Mallia is the President of the Construction, Forestry, Mining and Energy Union (NSW Branch), Construction and General Division. Prior to 2011 Rita was the Senior Legal Officer of the Union. She is Director of the NSW Dust Disease Board, Director of the Asbestos Diseases Research Foundation and Director of United Super Pty Ltd.

Alexandra Rivers

Non-Executive Director

Alexandra Rivers is a psychologist and ex academic, and carer of a now adult person with schizophrenia. She is Vice President of the Schizophrenia Fellowship of NSW, a board member of the Aboriginal Education Council of NSW, and a member of the Mental Health Consumer and Carer National Register. She is an ex- Member, of the Governing Committee, Australian Consumers' Health Forum. She has been a board member since 2003.

Anne Mortimer

Non-Executive Director

Anne Mortimer joined the board in June 2010. Anne is National Strategy and Business Development Manager, Ramsay Health Care. Anne is also CEO of The Northside Group which comprises Ramsay's three private mental health hospitals in Sydney. She is a member of the Australian Mental Health Council, Australian Private Hospital Association and Mental Health Priority Taskforce.

Norbert Schweizer

Non-Executive Director

Norbert Schweizer joined the board in June 2011 and is the founder and partner of Schweizer Kobras, Lawyers and Notaries, and an accredited specialist in business law. He is a Life Member and former Chairman of the Silver Committee of the Royal NSW Institute for Deaf and Blind Children and a Board Member and former President of Emanuel Synagogue in Woollahra (of which he is a life governor). He is a Member of the Dean's Board of Advice of the Sydney Conservatorium of Music and a foundation director of the Swiss-Australia Chamber of Commerce and Industry. He is also a non-executive director of a number of companies in the electrical products for utilities and building services industries. Norbert is also a recipient of the Bundesverdienstkreuz, the Order of Merit of the Federal Republic of Germany.

The Institute would also like to recognise the contributions of former Board members Christopher Rex (resigned July 2010) and Sam Lipski (resigned September 2010).

Michael Visontay

Non-Executive Director

Michael Visontay joined the board in February 2010. He is Editor of Alumni Publications at the University of Sydney, Editor of Australian Author magazine and is a former Deputy Editor of the *Sun Herald* and Managing Editor of Sections for the *Sydney Morning Herald*. He is highly regarded for his years in journalism and was the winner of the European Union Journalism Award in 2007. He has written three books and is also an occasional commentator on sport for the 2BL morning show.

Professor Cynthia Shannon Weickert

Non-Executive Director

Prof. Cyndi Shannon Weickert is the Macquarie Group Foundation Chair of Schizophrenia Research leading the Schizophrenia Research Laboratory and has been a board member since 2007. Formerly Unit Chief, of MiNDS (Molecules in the Neurobiology and Development of Schizophrenia), Clinical Brain Disorders Branch, National Institutes of Health, 2004-2007. Senior Staff Fellow, NIH, NIMH, Clinical Brain Disorders Branch, April 1999-April 2004. Postdoctoral Intramural Research Training Award-NIH, NIMH Clinical Brain Disorders Branch, 1995-1999. She holds a PhD from Mount Sinai School of Medicine, CUNY, New York, NY, Ph.D. Biomedical Science, 1990 -1995. She is also the first Australian woman to sit on the Scientific Advisory Board of the international online Schizophrenia Research Forum.

Jill Wran

Non-Executive Director

Jill Wran joined the board in 2009. She is widely experienced in business and has served on a number of public company boards as well as giving honorary service on the boards of many of the state's leading cultural institutions. Former Directorships include Bilfinger Berger, Abigroup, SMEC Australia, Ansett New Zealand, the Australian Graduate School of Management, International Grammar School, the NSW State Conservatorium of Music, Sydney Symphony Orchestra, Centennial and Moore Parks Trust, and the Sydney Opera House Trust. More recently she was Chairman of the Historic Houses Trust and a Council member of the University of New England.

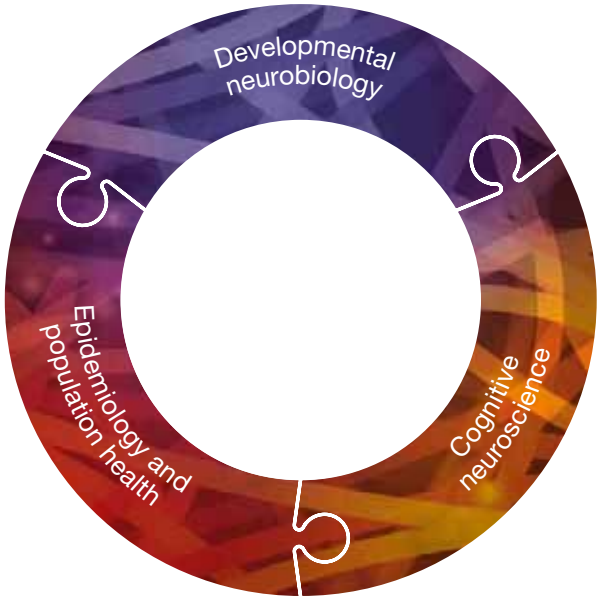
Research

Research Overview

The Schizophrenia Research Institute is the only Australian medical research institute solely dedicated to discovering the ways to prevent and cure schizophrenia.

The Institute was established by passionate scientists and parents of people with schizophrenia in 1996 as Australia's first virtual medical research institute, at a time when little research was being done into schizophrenia in NSW. The mission of the Institute is to discover the ways to improve treatments, prevent and cure schizophrenia.

The organisation conducts and supports schizophrenia research in hospitals, universities and research institutes across the country and internationally. With a national network of 200 researchers, the Institute drives a proactive research agenda, has invested over $26 million and has had numerous successes to date.



Research Outcomes

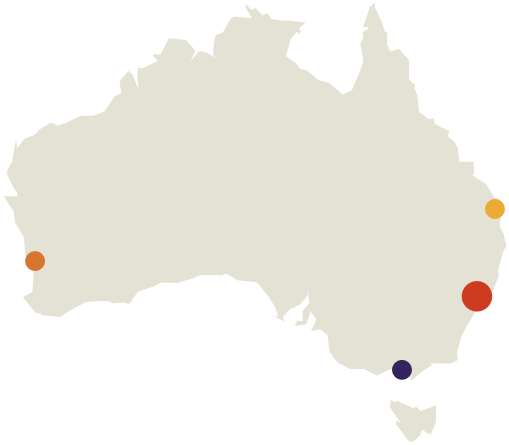
Successful outcomes in research are demonstrated by publications in scientific journals, presentations at conferences and academic progression.

Over this year Institute support has contributed to 85 publications in peer-reviewed journals and Institute researchers have made 138 presentations at scientific conferences in Australia and internationally.

Institute supported students were also awarded twelve research higher degrees including three PhDs, two Masters Degrees and seven Honours Degrees.

Research Partners
Universities, Institutes and Hospitals

The Institute has formal agreements with universities and institutes to conduct research at the following locations:



New South Wales

ANSTO
Bloomfield Hospital
Garvan Institute
Hunter New England Area Health Service
Hunter Area Pathology Service
James Fletcher Hospital
Macquarie University
NSW Health InforMH
Mental Health and Drug and Alcohol Office
The Mater Hospital
Neuroscience Research Australia
St Vincent's Hospital
University of Sydney
University of NSW
University of Wollongong
University of Newcastle
Victor Chang Cardiac Research Institute
Westmead Hospital

Queensland

University of Queensland and Queensland Centre for Mental Health Research

Victoria

Melbourne Neuropsychiatry Centre
Mental Health Research Institute of Victoria
University of Melbourne

Western Australia

Centre for Clinical Research on Neuropsychiatry
University of WA

SCHIZOPHRENIA RESEARCH BANK

Key Role in International Genetic Collaborative Study

Dr Carmel Loughland, Manager of the Australian Schizophrenia Research Bank

The Bank has played a key role in a global study that investigated genetic variants associated with schizophrenia. The study replicated findings from previous genetic research and made new discoveries.

The study by the Schizophrenia Psychiatric Genome-Wide Association Study Consortium used blood samples from a large number of international projects, including our Bank, and is published in *Nature Genetics*. The findings identified five genomic loci that are newly associated with schizophrenia and confirmed two genomic loci previously identified in schizophrenia.

This is the Bank's first contribution to an international study that involved over 51,000 individuals and marks an important step as one of the new genetic discoveries may be implicated in contributing to particular brain abnormalities in schizophrenia. When cases of bipolar disorder were added to the study sample the findings indicated some shared genetic susceptibility for both schizophrenia and bipolar disorder.

Our involvement in this global replication study is a first for the Bank, and one that marks the beginning of a more extensive contribution to the international research community.

About The Bank

The Australian Schizophrenia Research Bank is the largest research resource of its type ever undertaken in Australia.

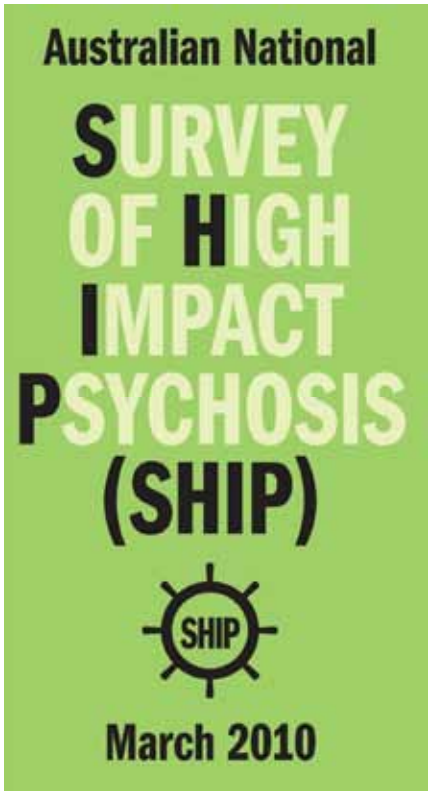
The Bank provides researchers with access to a unique set of de-identified data including blood samples, brain scans and clinical information from people with schizophrenia, as well as a healthy control group.

Our team, headquartered at the University of Newcastle, worked tirelessly with our interstate collaborators to reach this milestone. We could not have achieved this without the technological boost from eResearch experts, Intersect, who provided us with a commercial grade database worth $800,000.

Thank you to all of the Bank's supporters, The Pratt Foundation, Perpetual Trustees, on behalf of the Patrick Brennan Trust and the Baxter Charitable Trust, State Trustees, Ramsay Health Care, The Viertel Charitable Foundation, The Trust Company Ltd, Ron and Peggy Bell Foundation and The Ian Potter Foundation. This support has placed the Australian Schizophrenia Research Bank in a key position to help make future discoveries.

Visit the Australian Schizophrenia Research Bank mini website at

www.schizophreniaresearch.org.au/bank



Survey of High Impact Psychosis

The Bank collaborated with the Survey of High Impact Psychosis (SHIP), the second Australian national survey of psychosis and associated patterns of disability and service use.

This valuable partnership enabled the Bank to acquire additional blood samples for genetic studies as well as diagnostic and demographic data from the SHIP participants who gave their consent to be included. This provides an important opportunity to grow the Bank's resources, enhance its national profile and open up new opportunities for scientific collaboration.

Results from the SHIP analyses were published late this year and the data will become available for use by other researchers in 2013. SHIP is funded by the Commonwealth Department of Health and Ageing.

Next steps...

The Bank will now have the opportunity to undertake future genetic analysis including the additional blood samples provided through the SHIP study participants. This will broaden the pool of samples available and may facilitate more in-depth analysis of specific genes associated with particular subgroups of psychotic illnesses.

Volunteers

Thanks to the generosity of all our wonderful research volunteers, more than 65 research projects have been supported by the Australian Schizophrenia Research Bank. By taking part in the Bank, your contribution will be used in perpetuity to help future generations of people affected by schizophrenia.

The Bank is still recruiting patients and healthy controls. To find out more contact 1800 639 295

Our People

dedicated to making
a difference

Living with Schizophrenia

Eva quickly recognised the signs of schizophrenia when her daughter, Wendy, began exhibiting them – because Eva had witnessed her mother suffer the effects of schizophrenia for many years. But with the support of family and friends, modern treatments and a willingness to confront the illness Eva and Wendy are taking on schizophrenia together and speaking out to help stop the stigma.

"I am so proud of my daughter. She is delightful and responsible, and eager to confront her illness."

Eva, Mother and Institute Family Ambassador.

"I think it is really important that people are able to speak openly about schizophrenia, without feeling judged. We don't need to suffer in silence while the search for answers continues."

Wendy, Daughter and Institute Patient Ambassador.

Opportunities for Growth

Dr Kelly Newell began as a student with the Institute, and is now a teaching and research academic guiding the future generation of researchers as an Institute scientist and a Senior Lecturer at the University of Wollongong.

Dr Newell's first steps into schizophrenia research were as a Summer Scholar in 2001 supported by the Institute. At the time, she was a promising medical science undergraduate student with a keen interest in investigating how the brain is affected in schizophrenia.

Since her initial scholarship Dr Newell received Institute funding for a research project, and then a Postgraduate Scholarship to continue her PhD studies which focused on unravelling the role of various neurotransmitter systems in schizophrenia's development.

As well as undertaking a robust research program, the Institute's role is to support the professional development of members of our scientific community, and to ensure that future generations of the brightest minds are drawn to this area of research.

By supporting early career researchers such as Dr Newell, the Institute is investing in the future and longevity of our work, and in the research community as a whole.

" The support that I received from the Institute from the beginning of my career was without a doubt the underlying reason why I ended up being a schizophrenia researcher today," Dr Kelly Newell

Dr Newell's current research focuses on the glutamate-mediated neurotransmission system in schizophrenia. Of particular interest is Dr Newell's research on a specific glutamate receptor, mGluR5, investigating its role in the pathology and treatment of schizophrenia. This involves examining the functioning of this receptor and characterising whether and how it is altered in schizophrenia.

Dr Newell's work also examines whether drugs that target this receptor have the potential to prevent or treat schizophrenia related behaviours.

Awards

The Institute is committed to supporting the professional growth of young scientists from undergraduate to doctorate to fellowship. These researchers are at a critical point in their careers and rely on support for their work until they are able to secure their own funding.

Each year, in recognition of dedication and achievements, the Institute gives awards to some of the most gifted early career researchers and post graduate students.

Dr Ans Vercammen from the Cognitive Laboratory associated with the Schizophrenia Research Laboratory received the Early Career Researcher Award and $7000 to support her research in recognition of her research success. Dr Vercammen has a critical role in the clinical trial at the Schizophrenia Research Laboratory.

This year two Postgraduate Student Awards were presented with $3000 going to support each recipient.

Erin Gardiner is based at the University of Newcastle and is investigating microRNA and the potential to identify biomarkers in peripheral blood lymphocytes.

Duncan Sinclair is based at the Schizophrenia Research Laboratory and is working to understand how the glucocorticoid receptor, which is involved in stress signalling, develops normally across the lifespan and how this receptor system is affected in schizophrenia.

*Professor Cyndi Shannon Weickert Macquarie Group Foundation Chair of Schizophrenia Research heads the team at the Schizophrenia Research Laboratory**

Developmental Neurobiology

Although the environment plays a strong contributing role in the development of schizophrenia, we know that genetic factors make a substantial causal contribution and therefore our understanding of the interaction between environmental and genetic factors in this illness is vital to future progress.

The Schizophrenia Research Laboratory

Professor Cyndi Shannon Weickert and her team at the Schizophrenia Research Laboratory examine the cellular and molecular changes that occur in the brain at different stages of individuals' lives.

Cyndi's work is a personal challenge to uncover the mysteries of this illness, as she watched her twin brother develop schizophrenia in his teen years, and has spent the last twenty years investigating how the developing brain is affected by genes, hormones and growth factors in schizophrenia. Most importantly, she has turned those many years of study and experimentation into the application of a novel treatment and the first clinical trial run by the Institute.

When Does Schizophrenia Begin?

There are many theories surrounding the development of schizophrenia - questions surrounding the genetics and environmental triggers of the illness. No-one knows for sure when schizophrenia begins, is it in foetal life, at birth, in infancy, in adolescence or in adulthood? Our recent research suggests that the answer could be any of the above as the brain is still developing new neurons and making new connections well into the second decade of human life. Thus, in schizophrenia, which involves abnormal brain development, the disorder may begin at different times for different people.

What is the Nature of the Developmental Pathology?

Researchers in the field of schizophrenia neuropathology have known for over a decade that there are more neurons in the white matter under the cerebral cortex in the brain of a person that suffers from schizophrenia. These were interpreted as neurons that served a transient purpose in development, however, researchers at the Schizophrenia Research Laboratory* have provided the first evidence that they are not just left over remnants, but are inhibitory neurons that are destined for the cortex. Our researchers believe that these interneurons are "stuck" during a normal migration process towards the brain's cortex that occurs throughout postnatal life.

These interneurons appear to be accumulating at an increased rate under the cortex in patients who have predominantly negative symptoms of schizophrenia such as social withdrawal and cognitive difficulties. For the first time, we have linked the increase of neurons under the cortex to decreased health of the inhibitory neurons in the overlying cortex. What we need to determine next is where the problem lies in the recruitment of these "fresh" new neurons into the cortex. We have identified factors that can "call" migrating neurons into the cortex and these types of molecules may be developed to attract these inhibitory neurons into the cortex where they can make connections and perhaps have a normalising influence.

Examining the Immune Response in Schizophrenia

Our scientists are investigating immune responses and their association in schizophrenia, and have discovered that there is an increase in the mRNA expression of pro-inflammatory cytokine molecules - Interleukin 6, and Interleukin 8 - in the brains of people with schizophrenia.

The occurrence of these inflammatory molecules usually signals a problem such as an infection; however there is no known infection in the brains of patients with schizophrenia, suggesting that this pathway is induced for other reasons. We have also identified an increase in microglia - glial cells whose job it is to destroy the agent causing the inflammation - in the brain. This raises the question: are the microglia contributing to dysfunction in the brains of patients with schizophrenia?

Future research will investigate what causes

**The Schizophrenia Research Laboratory is a joint initiative of the Schizophrenia Research Institute, University of NSW, Neuroscience Research Australia (NeuRA), and the Macquarie Group Foundation. It is supported by NSW Health.*

DEVELOPMENTAL
NEUROBIOLOGY

The Schizophrenia Research Laboratory is a cutting-edge centre for training and experimentation in the developmental neurobiology of schizophrenia.

this neuro-inflammatory response, its effects on the brain and on the development of schizophrenia. We are carrying this study forward by examining whether activation of pro-inflammatory cytokines can be detected in the blood of living patients and if it can be used to identify patients who may respond by more directly targeting these changes.

Personalising Treatments in Schizophrenia

The team at the Schizophrenia Research Laboratory has a vision to personalise the treatment of schizophrenia. We know that this is a heterogeneous illness and that there are many likely causes and contributing factors and recognise that there is likely to be more than one single cure found for schizophrenia.

We now have access to high-throughput technology to deliver unprecedented genetic and transcriptional data with which to identify novel mechanisms of the illness and biomarkers of treatment response. We expect that 20% of people with schizophrenia will benefit from our current clinical trial, and that 30% of people with schizophrenia will have immune system activation and that 30% of the people with schizophrenia will have increased neurons under the cortex. This sounds encouraging, but we should point out that these groups are not mutually exclusive but are overlapping. Thus, it remains to be determined how many people will have pathologies in these biological subtypes and how they may be related and used to inform treatment.

This, along with a greater understanding of the neurodevelopmental basis of schizophrenia and the potential for hormone based interventions, lays a path for greater investigation into this area and, in time, the personalisation of treatments for patients.

Clinical Trial Update

Professor Cyndi Shannon Weickert and her team are conducting the Institute's first clinical drug trial aimed at improving cognitive performance.

In addition to their ongoing medication, 80 patients with schizophrenia receive a hormonal modulator called raloxifene which stimulates the oestrogen receptor in the brain. The aim is to learn how this hormonal modulator can influence thought processing in schizophrenia and determine whether it could be used as a novel treatment for cognitive problems in patients.

With the trial set to conclude in mid-2012, it is anticipated that early analyses and initial results will become available by the end of the year.

"Science is most useful to society when it can give some practical help."

Leonora Long
Postdoctoral Research Officer
at the Schizophrenia Research Laboratory

Dr Murray Cairns is based at the University of Newcastle.

Dr Cairns is supported by The Ainsworth Family.

Investigating Small RNA Biomarkers of Schizophrenia

Dr Cairns and his colleagues are investigating schizophrenia-associated changes to small non-coding RNA known as microRNA (miRNA). These molecules are involved in regulating gene expression and are important for both neural development and brain function.

While these molecules were shown to be altered in post-mortem brain samples they may also be changed in other more accessible tissues such as blood, and thus provide a potential biomarker of the disorder in living patients. In some diseases such as multiple sclerosis, Alzheimer's and cancer some miRNA changes are seen in a component of blood called peripheral blood lymphocytes (PBLs).

Dr Cairns and the Newcastle team are researching to determine if this is also the case in schizophrenia by identifying which miRNA molecules are differentially expressed in PBLs. This work may one day enable the development of alternative ways of diagnosing the illness, perhaps by identifying schizophrenia subtypes and better predicting the response to medication.

Chromosomes and Auto-immune Responses

In recent work the team discovered that a number of miRNAs that were downregulated in blood from individuals with schizophrenia came from a single location on chromosome 14. The function of these miRNA molecules, inferred from their target genes, suggests effects on the immune system, neurogenesis and development.

Our scientists are investigating whether these miRNAs act as stress-dependent regulators, and the possibility that this downregulation is due to an environmental trigger such as infection or an autoimmune response.

Our research indicates that this alteration may be the result of both genetic and epigenetic influences, where change is caused by the interaction between genes and the environment.

Professor Xu-Feng Huang, University of Wollongong works with Institute researchers Dr Chao Deng, Dr Elisabeth Frank, Dr Francesca Fernandez, and Dr Kelly Newell.

The team at Wollongong was awarded major competitive NHMRC funding.

The team at the University of Wollongong is seeking to improve treatments for schizophrenia as well as to reduce the side effects of current treatments related to weight gain and metabolic disorders.

The Brain's Black Box

The hypothalamus, the 'black box' of the brain, is responsible for the hormones that regulate (amongst other things) hunger, body temperature, sleep, and moods. However, much is still unknown about how the mechanisms of this region work in response to antipsychotic drug therapy.

By examining the interactions between antipsychotic compounds and brain chemicals within specific brain regions, we can develop an understanding of the structural and functional relationships from which new antipsychotic medications can be developed. We are now seeking treatments to better manage the illness and some of the side effects of current drug therapies.

Prof. Huang is investigating the potential of pharmacological strategies that are urgently needed to assist in optimal body weight control during treatment.

Examining the Side Effects of Atypical Antipsychotics

Antipsychotic medications have long been recognised for revolutionising the treatment of schizophrenia and are the most effective method for treating the positive symptoms of the illness.

Atypical or second generation antipsychotics such as olanzapine, clozapine and risperidone are effective in treating schizophrenia. However, nearly 40% of people with schizophrenia taking atypical antipsychotics become overweight and develop metabolic disorders, leading to Type II diabetes, hypertension and cardiovascular disease.

As well as increasing other health risks, weight gain is also a strong predictor of non-adherence during antipsychotic treatment - a common issue when treating people with schizophrenia. Patients who do not adhere to their treatment are five times more likely to relapse and worsen the outcome of the illness in the long-term.

If we can mitigate the weight gain side-effects of these medical treatments, this could ultimately dramatically increase the success of current treatments, as well as contribute to better long-term health outcomes for patients.

Exploring Histamine Receptors

While work continues into the discovery of newer treatments for schizophrenia, Prof. Huang and members of the Wollongong team are also examining existing medications that are known, safe compounds and exploring their potential for use in schizophrenia.

A histamine receptor known as H1R is being targeted as having the potential to influence some of the metabolic side effects in people taking olanzapine.

How well a drug antagonises or blocks H1R is correlated with increased hunger and eating, and therefore more weight gain, as seen with atypical antipsychotics.

Antagonism of H1R prevents activation of AMP-activated protein kinase (AMPK), leading to, among other things, decreased lipid and glucose metabolism and increased lipid synthesis.

"As scientists, it is important for our focus to remain on the patients that will benefit from our work – not just five to ten years from now, but also next week."

Professor Xu-Feng Huang

Professor Ulrich Schall

Cognitive Neuroscience

Cognitive Neuroscience is a fairly new area of scientific study that examines the biological basis of cognitive functions, with the aim of understanding the relationship between the structure and function of the brain.

Professor Ulrich Schall, University of Newcastle, is a Cognitive Neuroscientist at the Priority Centre for Translational Neuroscience & Mental Health Research. A psychiatrist and psychologist, he is leading a key team for the Schizophrenia Research Institute at Newcastle.

Professor Schall has been awarded major competitive NHMRC grant to support his research.

One area that our team of cognitive neuroscientists is examining is an early stage of sound processing, a cognitive process that is uniquely affected in schizophrenia. Institute researchers in Sydney, Wollongong, Orange and Newcastle are also currently collaborating on a number of projects devoted to this phenomenon.

This area of research has already demonstrated a profound utility when researching the course of illness, predicting the response to treatment and identifying the brain regions affected in schizophrenia.

Cannabis and Vulnerability to Schizophrenia

Associate Professor Nadia Solowij and her team at the Universities of Wollongong and Newcastle are collaborating with researchers from Kings College, London, investigating how cannabis use affects brain markers of sensory memory and glutamate-mediated neurotransmission to better understand vulnerability to developing schizophrenia and by what mechanisms cannabis might trigger psychosis.

"This program of research may provide the critical information required for making early detection of schizophrenia and early intervention more effective when young people are seeking help in the new specialised youth mental health clinics across our country,"

Professor Ulrich Schall

MinT™
Minds in Transition

The Minds in Transition or 'MinT' project led by Professor Schall investigates how a deficit in the processing of sound is linked to other early signs of emerging schizophrenia.

First results were recently published in *Biological Psychiatry* showing that auditory information processing is already impaired in a subtle way well before the onset of psychosis. Continuing research now aims to identify the neural correlates of this deficit in the emerging illness using brain imaging techniques.

This project is supported by a major competitive NHMRC grant.

www.mint.org.au

Mapping the Brain

Paul Rasser is an Institute Research Officer based at the Priority Centre for Translational Neuroscience & Mental Health Research, University of Newcastle. He also supports the brain imaging component of the Australian Schizophrenia Research Bank.

Paul's research involves mapping the brain's anatomical structures, such as the cerebral cortex, and investigates the relationship between brain activity and structure using computational techniques.

These methods use MRI scans to produce 3D statistical models of the brain which enable us to compare particular landmarks of the brain between groups of people, such as those suffering from schizophrenia at various stages of their illness, cannabis users (with and without psychosis) and healthy volunteers.

COGNITIVE NEUROSCIENCE

"When great ideas converge with advanced technology we have a very real opportunity to make a difference in schizophrenia research"

Dr Juanita Todd

Dr Juanita Todd, University of Newcastle, specialises in measuring the brain's response to sound.

Dr Todd has been awarded major competitive NHMRC funding to support her research.

Impaired cognition is recognised as a core feature of schizophrenia. Cognition encompasses many abilities the brain requires for everyday function, including perception, memory, attention and reasoning. Problems in cognition may be apparent long before the diagnostic signs and symptoms of schizophrenia emerge.

Dr Todd and her team use brain imaging and behavioural measures of cognition to better understand the nature, emergence and significance of cognitive deficits in schizophrenia.

We know that schizophrenia involves changes in brain function and it is important that our research helps explain why and how this happens, and how it is connected to altered subjective experience. It is of course most important that we learn how to prevent or remedy these changes. This task has driven us to develop techniques that provide new knowledge about how these processes work, not just in schizophrenia but in all of our brains.

Filtering Relevance in the Environment

Mismatch negativity is a measure of how well the brain organises sound information. It reflects a process that happens automatically, even when we sleep. Our brains use experience to predict how the world around us should be. This helps us filter information to decipher what is important and what is not. This process breaks down in schizophrenia in a way that might be intimately tied to the earliest symptoms of the illness.

Our latest study suggests a conservative bias in how we process the relevance of information around us. Even outside our awareness, what we learn first has a strong influence on how we interpret things that happen. Our data show that this bias is reliant on a cognitive ability routinely observed to be impaired in schizophrenia. We are currently designing new studies to determine whether this protocol can teach us about how "faulty filtering" of relevance emerges and its links to symptom development.

Dr Melissa Green is a Senior Lecturer and ARC Future Fellow in the School of Psychiatry, University of New South Wales.

Dr Green has been awarded major competitive NHMRC and ARC funding to support her research, and her work utilises the Australian Schizophrenia Research Bank.

Dr Green examines genetic and environmental factors that influence cognition and brain function in disorders on the schizophrenia spectrum including schizophrenia, schizoaffective disorder, and bipolar I disorder.

Genetics and Subtyping

Dr Green's work is defining the different subtypes of psychotic disorders that share certain clinical, cognitive, or biological characteristics.

The subtyping approach is a necessary step toward determining the function of genes implicated in the development of psychotic disorders via large-scale "case-control" studies.

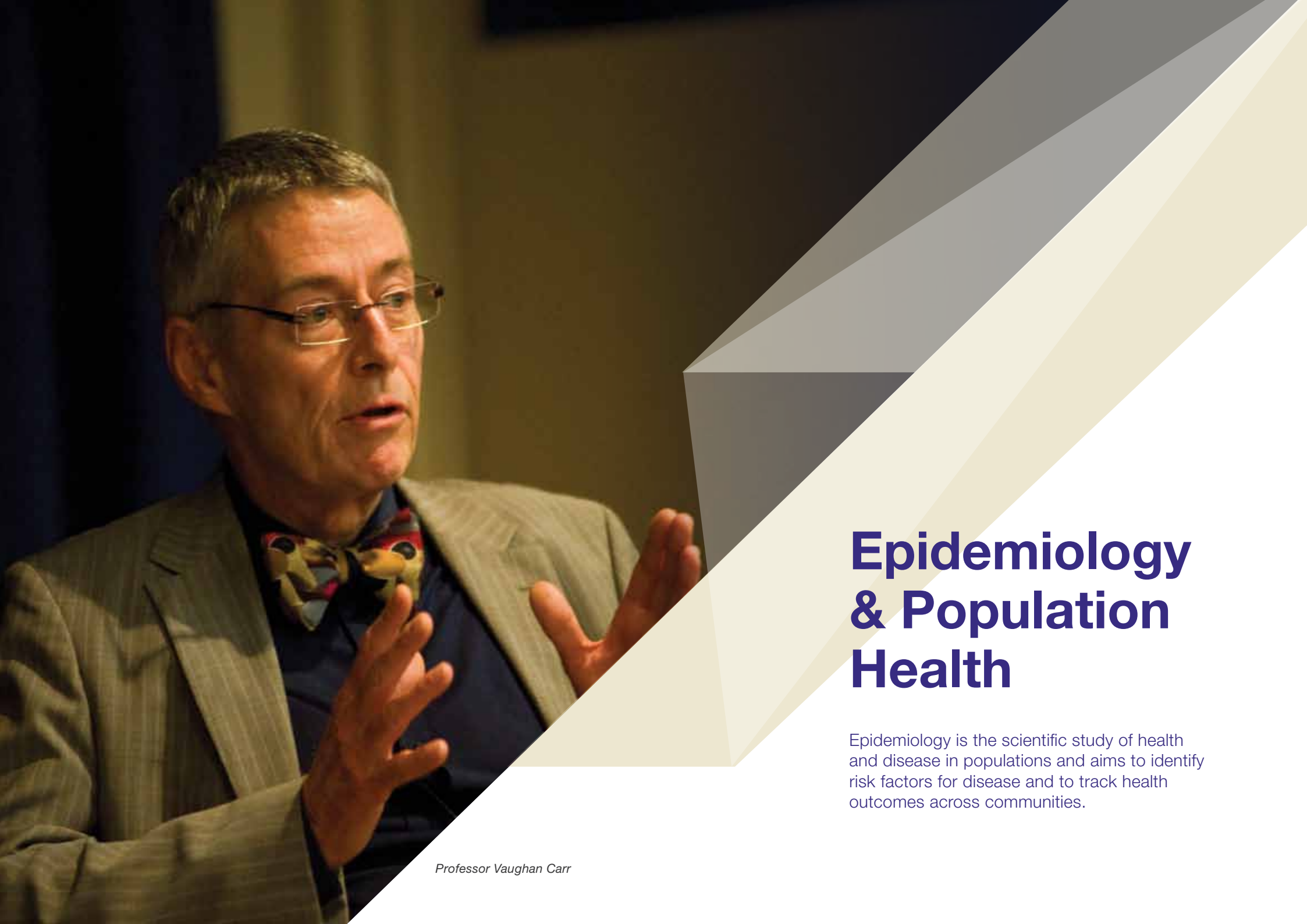
These traditional genetic approaches have considered psychotic patients as a single group, despite well-known variation among patients in the expression of symptoms and brain disturbances; this categorising of individuals into one group, despite this diversity, may account for the relatively inconsistent genetic findings that have emerged to date.

Using data from the Australian Schizophrenia Research Bank, Dr Green has determined subtypes of schizophrenia patients on the basis of clinical and cognitive features, and discovered that common genetic candidates previously implicated in schizophrenia are associated with specific features of the illness. Research in this domain is continuing, with the aim to delineate subgroups of psychotic patients based on structural and functional brain abnormalities using neuroimaging data.

Genetic Modulation of Environmental Stress

Investigation into the way that genetic profiles interact with environmental risk factors to contribute to the variable expression of psychotic illness have demonstrated the role of common genetic variants in modulating the effects of stressful experiences such as childhood adversity, or cannabis use, on cognitive function and symptoms.

Continuing studies within this theme are being conducted in relation to psychosis subtypes to determine genetic and biological features that render certain types of patients vulnerable to specific environmental stressors in their lives.



Professor Vaughan Carr

Epidemiology & Population Health

Epidemiology is the scientific study of health and disease in populations and aims to identify risk factors for disease and to track health outcomes across communities.

The NSW Child Development Study

Institute CEO Professor Vaughan Carr and his team in Schizophrenia Epidemiology and Population Health at the University of New South Wales have been awarded major competitive grant funding from the Australian Research Council to support their research, the NSW Child Development Study.

The study aims to follow a large cohort of primary school age children over a 5-20 year period, to identify risk and protective factors that influence mental health-related outcomes during adolescence and early adulthood.

Schizophrenia is a neurodevelopmental disorder, with its origins lying much earlier in life than the onset of first psychotic symptoms; at present the early life factors involved in the illness are not well understood.

If we are able to identify risk factors in the development of mental disorders, including schizophrenia, this would assist in the development of better services and prevention programs.

The NSW Child Development Study will also identify potential preventative factors that contribute to resilience in children and will highlight other social and well-being outcomes in adolescence and early adulthood.

Partnering with other organisations such as the NSW Ministry of Health and the Department of Education and Communities, this study links existing databases, such as birth and education records to identify early markers that may be associated with health and well-being later in life.

Explaining Record Linkage

Record linkage studies look at large populations of de-idenitifed records in order to detect subtle population-level risk and protective factors, but are not able to identify or diagnose at an individual level.

Although there are many risk factors that confer a slightly increased risk for schizophrenia such as urban upbringing, winter births and cannabis use, these factors alone in no way enable predictions of future diagnoses of schizophrenia in individuals.

A population-level analysis such as a longitudinal record linkage study will better identify factors or stages that impact on development, health and well-being throughout the lives of a population of children.

SCHIZOPHRENIA LIBRARY

The Schizophrenia Library is a world first, free online one-stop-shop for a wide range of information on schizophrenia. The brainchild of Professor Vaughan Carr, the Schizophrenia Research Institute was given full support and funding of over $1 million from NSW Ministry of Health to develop this resource.

The Library provides the most comprehensive summary of what we know today about schizophrenia, and importantly it quality assesses the findings of research undertaken.

The Library only includes systematic reviews, which are the highest quality reviews, and undertakes a quality assessment of each review for bias and transparency of methodology. Within each review we also assess the quality of the data using a validated procedure and assess the statistics for precision and variability.

This offers the general public, researchers, clinicians and policy makers information that is easy to access and understand, across more than 400 topics in nine key areas of schizophrenia including treatment, signs and symptoms, risk factors, diagnosis, course and outcomes of the disorder, physical factors, comorbid conditions, population perspectives and information on families.

Subscribe to the free Schizophrenia Library E-Newsletter at
www.schizophreniaresearch.org.au/library

Filling the Gaps

Alana Shepherd is a Research Assistant with the Schizophrenia Library. As well as undertaking systematic reviews of existing research, she also identifies gaps in the wider body of knowledge of schizophrenia research and is filling these gaps by undertaking meta-analyses in these areas.

Meta-analysis combines results from a number of studies that address similar hypotheses, and produces a statistically weighted effect for the outcome variables of interest in the particular studies.

Alana and the team at the Library are currently undertaking meta-analyses on a number of topics, including childhood trauma and structural brain changes in schizophrenia.

Community

Andrew Hansen and Chris Taylor from The Chaser joined in the fun at Spark of Genius

Fundraising and Marketing

The Institute is grateful to all our supporters from government, corporates, trusts and foundations, individual donors and the community.

Spark of GENIUS

‘Spark of Genius’ is the signature gala black tie event of the Schizophrenia Research Institute. The event is highly successful because of the unique formula of having one mystery Genius guest at each table.

All of the Genii are leaders in their fields ranging from the Arts, Media, Sports, Politics, Entertainment, Business and Academia.

Journalist Kerry O’Brien, actors Robyn Nevin and Barry Otto, author Thomas Keneally, retired High Court Judge The Hon. Michael Kirby, the guys from The Chaser, writer Anne Deveson, and NRL legend Nathan Hindmarsh were just some of the Genii at the event.

The Institute thanks our MC, the wonderful Gretel Killeen, and all of our Genii, our Principal Supporter Macquarie Group Foundation and major sponsors, The Ainsworth Family, Brookfield Multiplex, City of Sydney, Etihad, KPMG, Mulyan Wines, The Northside Group – Ramsay Health Care and Schweizer Kobras.

Thanks to the event supporters, donors and everyone that joined us on the night for an evening of fun and fundraising.

Professor Shannon Weickert with host, Gretel Killeen

The Chaser’s Andrew Hansen with ABC’s Kerry O’Brien

The Cause

In 2011 we dedicated the Spark of Genius event to the Schizophrenia Research Laboratory, headed by Professor Cyndi Shannon Weickert, the Macquarie Group Foundation Chair of Schizophrenia Research.

Prof. Shannon Weickert (of ABC Australian Story fame) is driven by her own experience of growing up with a twin brother who developed schizophrenia. She is one of a handful of developmental neurobiologists in the world who specialise in schizophrenia research. Her team of researchers has had many successes, most notably the commencement of the first clinical drug trial for the Schizophrenia Research Institute. Using an existing hormone modulator, the trial aims to improve cognitive and memory functions for people with schizophrenia, opening a possibility to assist in their further education and extended employment.

Spark of Genius Committee Members

Mrs Chris McDiven, Chairman, Schizophrenia Research Institute

Mrs Jill Wran, Schizophrenia Research Institute

Ms Lisa George, Macquarie Group Foundation

Mrs Margarete Ainsworth

Mrs Jenni Fagan, Mulyan Wines

Mr Norbert Schweizer, Schweizer Kobras

Mr Paul Ruiz, KPMG

Prof. Cyndi Shannon Weickert, Schizophrenia Research Institute

Ms Natalie Austin, ICMS Australasia

Mrs Sharne Nicholls, Schizophrenia Research Institute

Ms Helen Connealy, Schizophrenia Research Institute

Spark of Genius Supporters

Principal Supporter

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NSW GOVERNMENT Health

Major Sponsors

The Ainsworth Family

Brookfield MULTIPLEX

CITY OF SYDNEY

ETIHAD AIRWAYS

KPMG cutting through complexity

MULYAN

The Northside Group Mental health for life

Schweizer Kobras LAWYERS & NOTARIES

SwearStop

www.swearstop.com.au

SwearStop, the annual online awareness and fundraising campaign for the Institute asks: Can You Give It Up For Mental Health?

Everyday Australians – and our SwearStop Ambassadors pledge to give up swearing for one week in May during Schizophrenia Awareness Week.

In 2011 Matt Dee, a lifeguard on the hit Channel TEN show Bondi Rescue, spoke about the pain and anguish of losing his sister, Rachel, to schizophrenia nearly two years ago.

He told his family's story to *The Sun-Herald* and *6.30pm with George Negus* program during Schizophrenia Awareness Week in May, speaking in support of SwearStop.

His friends and lifeguard mates, Maxi, Corey and Kerrbox from Bondi Rescue were also SwearStop Ambassadors, getting behind their mate and giving it up for schizophrenia research.

We also had a record number of SwearStop Ambassadors joining in the fun – Alvin Quah and Courtney Roulston, MasterChef finalists; music legend, Angry Anderson; Ray Warren, sports commentator; Channel 7's Glenn Wheeler; Jono Coleman from the Jono and Dano Show; Miss World Australia 2010, Ashleigh Francis; Nate Myles from the Sydney Roosters; Liam Reddy from Sydney FC; Mark Geyer from Triple M; and Nigel Brennan, author and photojournalist.

The Australian Schizophrenia Research Conference

The Schizophrenia Research Institute was the organising body for the biennial Australasian Schizophrenia Conference (ASC2010) in September 2010.

Held in Sydney and convened by Prof. Vaughan Carr, ASC2010 brought together some of the best minds in schizophrenia research from across Australia and the world with a record attendance of 350 delegates.

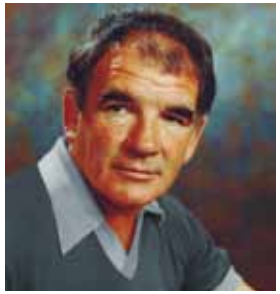
The ASC2010 Public Forum was a great success and attracted a full house at the Garvan Institute auditorium in September. Led by ABC journalist Kerry O'Brien, the panel included Prof Vaughan Carr, 2010 Australian of the Year Prof. Patrick McGorry, Prof. Cyndi Shannon Weickert, Patient Ambassador Richard Schweizer, international speaker Prof. David Penn and Schizophrenia Fellowship of NSW representative Elaine Goddard.

The success of ASC2010 was largely due to the wide range of research covered from psychosocial treatments to molecular genetics.

FUNDRAISING AND MARKETING

City2Surf

City2Surf participants raised over $12,000 and created greater awareness through web and media activity.



Jack Gibson Cup

The Jack Gibson Cup was held in August at Parramatta Stadium, which was packed with 20,000 spectators. MC Mark Warren, Life Governor Judy Gibson and Miss World Australia all spoke on schizophrenia and the need to support the cause. Over $12,000 was raised at the event.

Warren Media Hawkesbury Race Day

Warren Media Hawkesbury Race Day was held in November 2010 and raised over $20,000, bringing greater awareness to this large audience.

ASX Thomson Reuters Charity Foundation

The Institute has yet again been selected as one of the recipient charities from this year's fundraising. The Foundation raises funds for a large number of charities through a sailing regatta, a golf day, a gala black tie event and a raffle.

Corporate Events

Throughout the year presentations are given to a variety of corporate partners which included FSC (Financial Services Council), Macquarie Group, Deutsche Bank, HSBC, Suncorp, BNP Paribas, ASX Reuters Foundation, Deloitte and Westfield.

Education

The Institute has also participated in education days with corporate partners and exhibited at the Illawarra Mental Health Expo, with over 200 community members attending in September 2010.

Our Fundraisers

There are many passionate and energetic members of the community who act on our behalf to raise awareness and much needed funds.

Our thanks to all our supporters – it is so good to have you on this journey with us and we are grateful for your commitment.

Committees

In particular, the Institute's Sydney Fundraising Committee and Spark of Genius Committee have both made a great impact on income, new relationships and awareness during the year. Many thanks to all the committee members for joining our team and volunteering your time so generously.

Major Partners and Supporters

Government

NSW GOVERNMENT Health

Australian Government
National Health and Medical Research Council

NSW GOVERNMENT Industry & Investment

Foundations and Trusts

PRATT FOUNDATION

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HUNT FAMILY FOUNDATION

THE IAN POTTER FOUNDATION

ANZ Trustees

Corporate

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FSC

RAMSAY HEALTH CARE

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Abigroup
Constructing Australia's Future

PAYNTER DIXON
HEALTH & AGEING BUILDING SUCCESS

JANSSEN-CILAG

Thank you to all our supporters

For privacy reasons we have chosen not to list all our individual supporters but would like to take this opportunity to thank and acknowledge these kind people who have given us gifts – this generosity and commitment of the community is vital to our ongoing success.

Patron

Her Excellency Professor Marie Bashir AC

Life Governors

Judy Gibson
Don McDonald AM

SwearStop Ambassadors

Angry Anderson
Jono Coleman
Matt Dee
Ashleigh Francis
Mark Geyer
Rodd Kerr
Trent Maxwell
Nate Myles
Corey Oliver
Alvin Quah
Liam Reddy
Courtney Roulston
Ray Warren
Dr Jonathon Welch AM
Glenn Wheeler

Spark of Genius

Matthew Burke
Stan Catts
Jonathan Coleman
Gerry Connolly
Rowan Dean
Matt Dee
Anne Deveson AO
David Egan
Justice Elizabeth Evatt AC
Kate Fitzpatrick
Barbara Flynn
Catherine Fox
Dan Gregory
Bob Guth
Andrew Hansen
Nathan Hindmarsh
Narelle Hooper
Rory Jeffes
Thomas Keneally AO
The Hon. Michael Kirby AC CMG
Dominic Knight
Dee Madigan
Wendy McCarthy AO
Robbie McGregor
Joanne Moore
Robyn Nevin AM
Kerry O'Brien
Ben O'Donoghue
Barry Otto
Luke Priddis
Imelda Roche AO
Professor Ulrich Schall
Chris Taylor
Sheryl Taylor
James Valentine
Peter Van Onselen
Professor Kim Walker
Justene Williams
Kim Williams
Lyn Williams OAM

Government

NSW Ministry of Health
National Health & Medical Research Council (NHMRC)
Industry & Investment NSW

Foundations, Trusts and Grants

ANZ Trustees Foundation – The Ron & Peggy Bell Family Legacy
ASX Thomson Reuters Charity Foundation
Institute of Health & Biomedical Innovation
Institute of Psychiatry
Sylvia & Charles Viertel Foundation
The Hunt Family Foundation
The Pratt Foundation
Thyne Reid Foundation

Patient Ambassadors

Richard Schweizer
Kathleen Smith
Wendy Tsui

Family Ambassadors

Eva Urban
Matt Dee

Corporate

Aberdeen Asset Management
Abigroup Limited
Apache Energy Limited
AXA Australia
BlackRock
Bluedoor Technologies
BNP Paribas Securities Services
Bravura Solutions
BT Financial Group
Colonial First State
Dencona Pty Ltd
Fidelity Investment Management Australia Limited
Franklin Templeton Investments Australia Ltd
GIO Suncorp
J P Morgan Worldwide Securities Services
Lundbeck Australia Pty Ltd
Macquarie Group
Macquarie Group Foundation
Metlife
Milestone Group
MLC
QInvest
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Resmed Ltd
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ShareGift Australia
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Steggles
Swiss RE
Warren Media
Westfield Limited

Probono

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Etihad Airways
KPMG
Mulyan Wines
Origin Thirst
Red Balloon
Robert Oatley Vineyards
Southern Sydney Fishing Tours
SYDNEY FC
The Narrative
Usher Photography

Workplace Giving

Australian Charities Fund
Charities Aid Foundation (CAF)
Deutsche Bank
Insurance Australia Group (IAG)
Macquarie Group Foundation
The Royal Bank of Scotland N.V.

Community Groups

ARAFMI Cowra Branch
CFMEU NSW Branch
Charity Greeting Cards
Hornsby Ku-Ring-Gai Association
Action On Mental Health
Leichhardt Council
Onsite Construction Group

Many thanks to Bruce Usher for providing the majority of the photography for this annual report.

Organisation

Finance

The abridged consolidated financial position, accounts and financial performance for the year ended 30 June 2011 have been prepared from audited financial statements and passed by the Board of Directors, who are responsible for the presentation of those financial statements and the information they contain. For a better understanding of the scope of the audit by KPMG, this report should be read in conjunction with KPMG's report on the abridged financial statements.

This report can be obtained from:

Schizophrenia Research Institute
405 Liverpool Street
Darlinghurst 2010

Fundraising includes direct mail appeals, corporate partnerships, major gifts and community. External grants income includes government, peer reviewed grants, foundations and major campaign agreements.

1. The recorded loss reflects funding received in advance not being recognised until the activities commence.
2. Please note that although the Institute holds considerable cash and assets, most of these funds are committed to future research projects. Further funding to support our research program is therefore needed.

Financial Performance

for the year ended 30 June 2011

Income	2011	2010
Fundraising	941,963	798,191
External grant income	3,522,434	4,345,926
Investment income	43,802	39,411
Sundry income	171,089	64,392
Total	4,679,288	5,247,920
Less Expenses		
Fundraising, Marketing & Communications	395,686	382,385
Administration	247,378	216,936
Investment	13,085	12,464
Research	4,501,881	4,498,714
Total	5,158,030	5,110,499
Net Surplus (loss)	(478,742)	137,421
Opening retained earnings	2,092,640	1,935,539
Transfer to retained earnings	(478,742)	137,421
Available for sale reserve	14,042	19,680
Closing retained earnings	1,627,940	2,092,640
Retained earnings	1,627,940	2,092,640

Employees and Scientific Affiliates

The following list contains Schizophrenia Research Institute employees and funded positions, scientific affiliates and supported students.

Employees & Funded Positions

Ms Adnana Aliskovic
Schizophrenia Research Institute & University of Newcastle

Ms Katherine Allen
Schizophrenia Research Institute, Neuroscience Research Australia & University of New South Wales

Ms Julie Barlow
Schizophrenia Research Institute

Ms Inara Bebris
Schizophrenia Research Institute, Neuroscience Research Australia & University of New South Wales

Ms Bryarne Bielefeld
Schizophrenia Research Institute & University of Queensland

Mr Mikhail Bonch-Osmolovsky
Schizophrenia Research Institute & University of New South Wales

Mr Jason Bridge
Schizophrenia Research Institute & University of Newcastle

Dr Murray Cairns
Schizophrenia Research Institute & University of Newcastle

Professor Vaughan Carr
Schizophrenia Research Institute & University of New South Wales

Dr Vibeke Catts
Schizophrenia Research Institute, Neuroscience Research Australia & University of New South Wales

Ms Rose Chesworth
Schizophrenia Research Institute & Neuroscience Research Australia

Ms Helen Connealy
Schizophrenia Research Institute

Mr Gavin Cooper
Schizophrenia Research Institute & University of Newcastle

Dr Victoria Dalton
Schizophrenia Research Institute & Australia Nuclear Science and Technology Organisation

Ms Megan Diallo
Schizophrenia Research Institute

Ms Sandra Diminic
Schizophrenia Research Institute & University of Queensland

Ms Jyoti Doshi
Schizophrenia Research Institute & University of Western Australia

Mr Daren Draganic
Schizophrenia Research Institute

Ms Liesl Duffy
Schizophrenia Research Institute

Mr Tim Ehlkes
Schizophrenia Research Institute & University of Newcastle

Ms Rickie-Leigh Elliot
Schizophrenia Research Institute & University of Newcastle

Ms Cheryl Filippich
Schizophrenia Research Institute & Queensland Institute of Medical Research

Dr Elisabeth Frank
Schizophrenia Research Institute & University of Wollongong

Dr Samantha Fung
Schizophrenia Research Institute, Neuroscience Research Australia & University of New South Wales

Ms Sarah Gale
Schizophrenia Research Institute & University of Melbourne

Ms Janette Howell
Schizophrenia Research Institute & University of Newcastle

Ms Sarah Jauncey
Schizophrenia Research Institute

Dr Dipesh Joshi
Schizophrenia Research Institute, Neuroscience Research Australia & University of New South Wales

Ms Felicity Klopper
Schizophrenia Research Institute
& University of Melbourne

Dr Kristin Laurens
Schizophrenia Research Institute
& University of New South Wales

Ms Kelly Liu
Schizophrenia Research Institute
& University of Wollongong

Mr Warren Logge
Schizophrenia Research Institute
& Neuroscience Research Australia

Dr Leonora Long
Schizophrenia Research Institute,
Neuroscience Research Australia
& University of New South Wales

Dr Carmel Loughland
Schizophrenia Research Institute
& University of Newcastle

Ms Danielle Lowe
Schizophrenia Research Institute
& University of Melbourne

Ms Sandra Matheson
Schizophrenia Research Institute
& St Vincent's hospital

Ms Kathryn McCabe
Schizophrenia Research Institute
& University of Newcastle

Mr Jonathan McGuire
Schizophrenia Research Institute

Ms Antonia Merritt
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& University of Melbourne

Dr Linda Miller
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Neuroscience Research Australia
& University of New South Wales

Dr Elizabeth Moore
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& University of New South Wales

Ms Loretta Moore
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Neuroscience Research Australia
& University of New South Wales

Ms Bharti Morar
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& University of Western Australia

Dr Richard Morris
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Neuroscience Research Australia
& University of New South Wales

Dr Aslam Nasir
Schizophrenia Research Institute
& University of Newcastle

Ms Hayley Ndeira
Schizophrenia Research Institute

Ms Sharne Nicholls
Schizophrenia Research Institute

Mr Stewart Oxley
Schizophrenia Research Institute
& University of Newcastle

Ms Beatrix Palmer
Schizophrenia Research Institute
& University of Sydney

Mr David Paul
Schizophrenia Research Institute
& University of Newcastle

Ms Rachel Pinchbeck
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& St Vincent's hospital

Ms Michelle Poole
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& University of Newcastle

Dr Tertia Purves-Tyson
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Neuroscience Research Australia
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Ms Dominique Rich
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Neuroscience Research Australia
& University of New South Wales

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& University of New South Wales

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& Neuroscience Research Australia

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& St Vincent's hospital

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& University of Sydney

Mr Yash Tiwari
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Neuroscience Research Australia
& University of New South Wales

Ms Melissa Tooney
Schizophrenia Research Institute
& University of Newcastle

EMPLOYEES AND SCIENTIFIC AFFILIATES

Ms Shan-Yuan Tsai
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Mr Nicholas Vella
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Dr Ans Vercammen
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Dr Mathieu Verdurand
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Dr Eryn Werry
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Ms Sarah West
Schizophrenia Research Institute & University of Sydney

Dr Jenny Wong
Schizophrenia Research Institute, Neuroscience Research Australia & University of New South Wales

Mr Heng Woon
Schizophrenia Research Institute, Neuroscience Research Australia & University of New South Wales

Affiliated Scientists

Dr Jonathon Arnold
University of Sydney

Dr Rebbekah Atkinson
University of Newcastle

Ms Lisa Azizi
University of Sydney

Dr Jo Badcock
University of Western Australia

Professor Amanda Baker
University of Newcastle

Dr Emma Barkus
University of Wollongong

Dr Natalie Beveridge
University of Newcastle

Dr Nikola Bowden
University of Newcastle

Associate Professor Michael Breakspear
University of New South Wales

Dr Bill Budd
University of Newcastle

Dr Linda Campbell
University of Newcastle

Professor Stan Catts
University of Queensland

Professor Loris Chahl
University of Newcastle

Dr Martin Cohen
University of Newcastle

Dr Irina Dedova
University of Western Sydney

Dr Chao Deng
University of Wollongong

Dr Teresa Du Bois
University of Wollongong

Professor Jo DuFlou
NSW Department of Forensic Medicine

Dr Francesca Fernandez-Enright
University of Wollongong

Dr Allison Fox
University of Western Australia

Dr Ross Fulham
University of Newcastle

Dr Janice Fullerton
Neuroscience Research Australia

Ms Therese Garrick
University of Sydney

Dr Melissa Green
St Vincent's Hospital

Ms Mei Han
University of Wollongong

Professor Clive Harper
University of Sydney

Dr Anthony Harris
Westmead Hospital

Associate Professor Julie Henry
University of New South Wales

Associate Professor Frans Henskens
University of Newcastle

Professor Herbert Herzog
Garvan Institute of Medical Research

Dr Tina Hinton
University of Sydney

Associate Professor Deborah Hodgson
University of Newcastle

Ms Sarah Howell
University of Western Australia

Professor Xu-Feng Huang
University of Wollongong

Professor Assen Jablensky
University of Western Australia

Dr Linda Kader
Sunshine Hospital

Professor Luba Kalaydjieva
University of Western Australia

Dr Frini Karayanidis
University of Newcastle

Dr Tim Karl
Neuroscience Research Australia

Professor Simon Killcross
University of New South Wales

Dr Matthias Klugmann
University of New South Wales

Professor Jillian Krill
University of Sydney

Dr John Kwok
Neuroscience Research Australia

Associate Professor Robyn Langdon
Macquarie University

Dr Matthew Large
Prince of Wales Hospital

Ms Isabel Latz
University of New South Wales

Professor Rhoshel Lenroot
Neuroscience Research Australia

Mr Terry Lewin
University of Newcastle

Associate Professor Colleen Loo
University of New South Wales

Professor Gin Malhi
University of Sydney

Dr Pamela Marsh
Macquarie University

Professor Skye McDonald
University of New South Wales

Professor Patricia Michie
University of Newcastle

Professor Vera Morgan
University of Western Australia

Mr David Mossman
University of Newcastle

Professor Bryan Mowry
Queensland Centre for Mental Health Research

Dr Tamo Nakamura
University of Newcastle

Dr Kelly Newell
University of Wollongong

Dr Penny Newson
University of Newcastle

Dr Olav Nielssen
St Vincent's Hospital
& University of New South Wales

Dr Georgina Paulik
Bondi Junction Community Health Centre

Ms Kristy Payne
Centre for Rural and Remote Mental Health, Orange

Ms Jesseca Rowland
University of New South Wales

Dr Grant Sara
Mental Health and Drug and Alcohol Office, NSW Health & University of Sydney

Dr Maria Sarris
University of New South Wales

Professor Ulrich Schall
University of Newcastle

Professor Peter Schofield
Neuroscience Research Australia

Professor Rodney Scott
Hunter Area Pathology Service

Dr Marc Seal
University of Melbourne

Ms Donna Sheedy
University of Sydney

Dr Glen Smith
Macquarie Hospital

Dr Janette Smith
University of Newcastle (until 20 Apr 2011)

Dr Nadia Solowij
University of Wollongong

Dr Tirupati Srinivasan
University of Newcastle

Dr Helen Stain
Bloomfield's Hospital

Dr Renate Thienel
Bloomfield's Hospital

Dr Juanita Todd
University of Newcastle

Dr Paul Tooney
University of Newcastle

Associate Professor Jamie Vandenberg
Victor Chang Cardiac Research Institute

Dr Bryce Vissel
Garvan Institute of Medical Research

Ms Hongquin Wang
Australia Nuclear Science and Technology Organisation

Associate Professor Flavie Waters
University of Western Australia

Dr Thomas Weickert
Neuroscience Research Australia
& University of New South Wales

Professor Lea Williams
Westmead Hospital

Dr Katerina Zavitsanou
Australia Nuclear Science and Technology Organisation

Supported Students

Ms Deborah Arguedas
Macquarie University

Mr Tim Bakas
University of Sydney

Ms Natalie Beveridge
University of Newcastle

Mr William Body
University of Wollongong

Ms Sonja Bouwer
University of Western Australia

Mr Jakob Campbell
University of Wollongong

Mr Adam Carroll
University of Newcastle

Ms Mico Chan
University of New South Wales

Ms Saruchi Chhabra
University of Western Australia

Ms Julie Crabtree
University of New South Wales

Ms Amy Dawson
University of Wollongong

Ms Rickie-Leigh Elliot
University of Newcastle

Mr Martin Engel
University of Wollongong

Ms Sacha Filia
Monash University

Mr Stuart Fillman
University of New South Wales

Ms Erin Gardiner
University of Newcastle

Ms Belinda Goldie
University of Newcastle

Ms Mei Han
University of Wollongong

Ms Mary-Claire Hanlon
University of Newcastle

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University of New South Wales

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University of Newcastle

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University of New South Wale

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Ms Tia Morosin
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Mr Daniel Mullens
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Ms Margaret Nelson
University of Melbourne

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Ms Debora Rothmond
University of New South Wales

Ms Danielle Santarelli
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Ms Alana Shepherd
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Mr Duncan Sinclair
University of New South Wales

Ms Ashley Skilleter
University of New South Wales

Ms Ketrina Sly
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Ms Gemma Smith
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Mr Vaidy Swaminathan
University of Melbourne

Ms Sheena Takacs
University of Wollongong

Ms Louise Thornton
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Mr Yash Tiwari
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Ms Britta Wenske
University of Wollongong

Ms Katrina Weston Green
University of Wollongong

Supported Publications

The following publications were supported either via direct funding or access to Institute-supported infrastructure.

Badcock J, Paulik G, Maybery M. The role of emotion regulation in auditory hallucinations. *Psychiatry Research 2011*; 185: 303-308.

Barragan M, Laurens K, Navarro J, Obiols J. 'Theory of Mind', psychotic-like experiences and psychometric schizotypy in adolescents from the general population. *Psychiatry Research 2011*; 186: 225-231.

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SUPPORTED PUBLICATIONS

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SUPPORTED PUBLICATIONS

Webster M, Elashoff M, Shannon Weickert C. Molecular evidence that cortical synaptic growth predominates during the first decade of life in humans. *International Journal of Developmental Neuroscience 2011*; 29: 225-236.

Werry EL, Enjeti S, Halliday GM, Sachdev PS, Double KL. Effect of age on proliferation-regulating factors in human adult neurogenic regions. *Journal of Neurochemistry 2010*; 115: 956-964.

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Wye P, Bowman J, Wiggers J, Baker A, Knight J, Carr V, Terry M, Clancy R. Total smoking bans in psychiatric inpatient services: a survey of perceived benefits, barriers and support among staff. *BMC Public Health 2010*; 10: 372.

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Research Grants

Administered by the Schizophrenia Research Institute

Yang Y, Fung S, Rothwell A, Tainmei S, Shannon Weickert C. Increased interstitial white matter neuron density in the dorsolateral prefrontal cortex of people with schizophrenia. *Biological Psychiatry 2011*; 69: 63-70.

Zalesky A, Fornito A, Seal M, Cocchi L, Westin C, Bullmore E, Egan G, Pantelis C. Disrupted axonal fiber connectivity in schizophrenia. *Biological Psychiatry 2011*; 69: 80-89.

Zavitsanou K, Wang H, Dalton V, Nguyen V. Cannabinoid administration increases 5HT1A receptor binding and mRNA expression in the hippocampus of adult but not adolescent rats. *Neuroscience 2010*; 169: 315-324.

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Arnold J, Karl T, McGregor I, Xuang XF. An animal model of gene-environment interaction in schizophrenia (BioRad Helios Gene Gun). NHMRC Equipment Grant, 2010 ($2,000).

Carr V, Draganic D. Chair of Schizophrenia Research (Cognitive Neuroscience). OSMR Science Leveraging Fund, 2011-2016 ($500,000).

Carr V, Draganic D, Duffy L. Australasian Schizophrenia Conference 2010. Ian Potter Foundation, 2010 ($10,000).

Carr V, Draganic D, Duffy L. Australasian Schizophrenia Conference 2010. Mental Health Council of Australia (Mental Health Conference Funding Program), 2010, ($10,000).

Carr V, Schall U, Scott R, Jablensky A, Mowry B, Michie P, Catts S, Henskens F, Pantelis C. The Australian Schizophrenia Research Bank (ASRB). NHMRC Enabling Grant (extension), 2011-2012 ($440,650).

Schall U, Rasser P, Loughland C. ASRB Virtual Brain Bank. NHMRC Equipment Grant, 2010 ($4,581).

Administered by Host Institutions

Baker A, Richmond R, Castle D, Kay-Lambkin F. Follow-up of healthy lifestyles intervention for cardiovascular disease among people with a psychotic disorder. NHMRC Project Grant, 2011-2013 ($436,085).

Bowman J, Baker A, Wiggers J, Carr V. Integrated smoking care linking mental health inpatients to community services: A randomised controlled trial. Australian Rotary Health, Mental Health Research Grant 2011 ($23,300).

Cairns M, Scott R, Tooney P, Rostas J, Brichta A. IMPLEN NanoPhotometer pearl. NHMRC Equipment Grant, 2011 ($10,000).

Cairns M, Scott R, Tooney P, Rostas J, Brichta A. IMPLEN NanoPhotometer pearl. University of Newcastle Equipment Grant, 2011 ($6,000).

Carr V, Laurens K, Holbrook A, Lenroot R, Brinkman S, Bore M, Maloney E, Smith M, Matthews R. The NSW Child Development Study. ARC Linkage Projects 2011 Round 1, 2011-2014 ($429,099).

RESEARCH GRANTS

Catts V. The anti-cancer effects of cholesterol trafficking and synthesis inhibitors as co-drugs in an in vivo multifome model. Cure Care Grant, 2011 ($90,000).

Deng C. Revealing molecular mechanisms underlying the therapeutic efficacy and side-effects of antipsychotic drugs. URC Near Miss Grant, University of Wollongong, 2011 ($20,000).

Deng C. Understanding the mechanisms of functionally selective antipsychotic drugs: Implications for new generation antipsychotic drugs. NHMRC Project Grant, 2011-2013 ($359,182).

Frank E. The Neuregulin-1 back-signalling pathway – relevance of the nicotinic acetylcholine receptor subunit alpha 7 in the Nrg1 HET mouse model for schizophrenia. University of Wollongong, Faculty of Health and Behavioural Sciences, Early Career Researcher Grant, 2011 ($3,000).

Han M. Microsatellite variation of NRG1 in schizophrenia. University of Wollongong URC Research Grant, 2010 ($10,000).

Hanlon MC, Schall U. RHD Completion Scholarship. University of Newcastle, 2010 ($10,000).

Henskens F, Loughland C, McCabe K, Carr V. Server for the Australian Schizophrenia Research Bank. University of Newcastle, 2010 ($20,000).

Jolley S, Kuipers E, Dunn G, Browning S, Laurens KR, Maddox L, Hodgins S, Bracegirdle K, Hirsch C, Smith P. Coping with unusual experiences and emotional problems: An evaluation of a training package for children aged 8-14 years. Guy's & St. Thomas' Charitable Trust, 2011-2013 (GB£216,399).

Kumarasinghe N. RHD Completion Scholarship. University of Newcastle, 2010 ($10,000).

Long L. Society for Neurosciences Meeting. CASS Foundation Travel Grant, 2010 ($1,080).

Loughland C, Campbell L. Here's looking at you, kid: The relationship between face processing, emotional availability and reflective functioning in mothers with schizophrenia at 'high risk' of atypical parenting. Hunter Medical Research Institute Project Grant, 2011 ($29,500).

Maloney E, Carr V, Laurens K, Green M, Dean K. The impact of parental criminality on early development among offspring. UNSW Faculty of Medicine Early Career Research Grant, 2011 ($20,000).

Maloney E, Laurens K, Green M, Carr V, Harris F. Identifying targets and timing for early intervention: A NSW population record-linkage study to detect childhood indicators of risk for mental illness. Australian Rotary Health, 2011-2012 ($119,008).

McCabe K. RHD Completion Scholarship. University of Newcastle, 2010 ($10,000).

Michie P, Hodgson D, Zavitsanou K, Schall U, Hunter M. The effects of maternal infection on NMDA-related electrophysiological, behavioural and biochemical measures relevant to schizophrenia. University of Newcastle Near-Miss Grant, 2011 ($25,000).

Michie P. The effects of maternal infection on NMDA-related electrophysiological, behavioural and biochemical measures relevant to schizophrenia. University of Newcastle Near Miss Grant, 2010 ($25,000).

Newell K. Metabotropic glutamate 5 receptors in the pathology and treatment of schizophrenia. University of Wollongong, Faculty of Health and Behavioural Sciences, Early Career Researcher Grant, 2011 ($3000).

Solowij N, Croft R, Todd J, Fernandez F, Michie P, McGuire P, Murray R. Vulnerability markers in the association between cannabis and schizophrenia. NHMRC Project Grant, 2011-2013 ($499,006).

Todd J, Nakamura T, Fullham W, Michie P. DSI Implantable Telemetry Device for recording multiple EEG channels simultaneously. University of Newcastle RIBG Capital Equipment Grant, 2011 ($4,220).

Todd J, Schall U, Michie P, Ward P. Impaired anticipation of sensory events in schizophrenia. NHMRC Project Grant, 2011-2013 ($300,032).

Weickert T, Shannon Weickert C, Lenroot R, Seal M, Killcross S. Combining cognition, neuroimaging and genetics to identify the neurobiological basis of vulnerable brain regions in schizophrenia. UNSW Gold Star Award, 2011 ($40,000).

Weickert T, Lenroot R, Hodges J, Shannon Weickert C. DC stimulator 1 channel uni- and bi-polar AC model and DC stimulators 1 channel uni-polar model. UNSW Major Equipment and Infrastructure Scheme Grant, 2010 ($21,964).

Wong J. Travel Grant. The CASS Foundation, 2010 ($3,990).

Research Students and Awards

Schizophrenia Research Institute Supported Degrees

PhD

Mr Matthew Hughes, University of Newcastle, September 2010

Ms Mei Han, University of Wollongong, December 2010

Ms Natalie Beveridge, University of Newcastle, April 2011

Masters

Mr Tim Bakas, University of Sydney, January 2011

Ms Debora Rothmond, University of New South Wales, June 2011

Honours

Ms Belinda Goldie, University of Newcastle, December 2010

Mr Daniel Mullens, University of Newcastle, December 2010

Ms Tia Morosin, University of Wollongong, December 2010

Mr William Body, University of Wollongong, December 2010

Ms Gemma Smith, University of New South Wales, November 2010

Ms Merribel Kyaw, University of New South Wales, January 2011

Ms Mico Chan, University of New South Wales March 2011

Early Career Researcher Award

Dr Ans Vercammen, Schizophrenia Research Institute, Neuroscience Research Australia & University of New South Wales

Postgraduate Student Award

Ms Erin Gardiner, University of Newcastle

Mr Duncan Sinclair, University of New South Wales

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