

**Monash  
Alfred  
Psychiatry  
Research  
Centre  
(MAPrc)**

Annual Report  
2014

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## Introduction - Director's Report, Professor Jayashri Kulkarni MBBS, MPM, FRANZCP, PhD



It is my great pleasure and privilege to invite you to read the 2014 annual report for the Monash Alfred Psychiatry research centre.

As our name spells out, we are a clinical research centre belonging to both Monash University and the Alfred Hospital. We are delighted with the progress that has been made in our quest to innovate new treatments for severe mental disorders such as schizophrenia, depression, bipolar disorder and autism as well as the work we have done to further the understanding of the causes of these conditions. In particular, being an active clinical part of the Alfred Hospital department of Psychiatry assists us to readily translate our research discoveries into clinical practice.

In 2014 we saw a further increase in the number of patients attending the MAPrc tertiary referral clinics. The MAPrc women's mental health clinic provides specialist assessment and management for women with a variety of mental disorders, the mood disorders clinic provides the opportunity for people to take up cutting edge brain stimulation treatments and the voices clinic utilises psychological techniques to assist patients with intractable auditory hallucinations. In this way we are a vibrant, clinically active and research driven centre that has grown rapidly since establishment in 2002. MAPrc hosts a number of students from different educational backgrounds. We are proud of the excellent quality of the

student research projects that result in ongoing innovations. Teaching the next generation of health professionals is part of MAPrc's brief and we enjoy the vibrancy and enthusiasm for psychiatry that our students share with us.

Through a number of activities including media presentations, liaising with advocacy groups, conducting fundraising activities and providing information about the latest mental health research findings, MAPrc communicates directly with our local community as well as more broadly with members of the public nationally and internationally.

2014 was another big year for MAPrc! A significant event was the visit by our new patron, Governor-General, His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd) and Her Excellency Lady Cosgrove. We have been very fortunate to have the former Governor-General Dame Quentin Bryce AD CVO as our first patron and now Sir Peter Cosgrove as our second.

MAPrc has a great reputation for applying the latest discoveries in the broad field of neuroscience to innovate treatments and understanding of mental disorders. We will continue to do our best to unlock the secrets of the brain to enhance the treatments of disorders that impair the mind. We continue to look forward to many more discoveries and innovations in the years and decades to come



Professor Paul Fitzgerald

I recently decided to review data from clinical trials that we have been conducting using transcranial magnetic stimulation (TMS) over the last 10 years or so. Since the early 2000's, my team has been engaged in research evaluating the use of TMS, a potential new treatment for depression and other disorders. This has involved over 15 clinical trials. Initially we aimed to demonstrate whether TMS was effective as a treatment for depression. Our research contributed to the eventual approval of this as a treatment in many countries, including Australia. More recently we have tried to develop better ways to use this treatment and to explore its use in the treatment of other conditions like obsessive compulsive disorder and autism.

The primary goal of doing research is clearly to enhance knowledge. With clinical trials it is to prove that something works or to improve the way in might be applied in clinical practice. Hence, the goals and aims for clinical trials research are usually realised in the future and not in the present. When I went back to look at the outcomes of our clinical trials, I was pleasantly surprised. Over the last 12 years we have treated over 1100 patients in trials. 44% of these patients, over 500, achieved a marked improvement in their depression with treatment and at least another 20% improved but to a lesser degree. Looking at this data made one thing really clear to me. Clinical research has the potential to help people in the here and now. Over 500 patients markedly benefited from their access to a new treatment, something that would have been considered investigational for much of the time we were doing this research and not available to them otherwise.

This is not necessarily a perspective that is usually taken when the pros and cons of funding medical research are being evaluated. Clearly, an

even greater impact of this research will arise if it can improve access to an effective treatment for tens of thousands of patients in the future. However, every one of the patients engaged in our research is unique and an important human being. Every person whose depression lessens, everyone who is able to smile or enjoy time with their family after treatment is a victory. The fact that these victories accumulate whilst we gather data that contributes to the greater scientific and medical goal of enhancing the treatment of depression and other mental illnesses, makes the victories even more satisfying and valuable.

Participating in research requires a substantial commitment by patients. They often have to take a chance, invest time and energy into something that is unproven or uncertain. They might have to do this in spite of their doubts, the doubts of their family or doctor. They do it for a whole range of reasons, including the altruistic desire to help others who suffer similar problems to themselves. No matter what the reasons, there is chance and risk involved in participation: something beyond their normal existence. We owe a debt to these individuals. Without them taking these chances, there is no potential for improvement, no potential for discovery. They are the heroes of clinical research and should be acknowledged as such. They are certainly our partners in discovery and advancement.

I hope that when I look back at our work in another 10 years' time, that I can see the impact of our clinical research blossoming and expanding. I hope that the hundreds of patients who were helped with treatment can turn into thousands and that we are helping individuals with depression as well as an ever increasing range of substantial mental health problems.

## Patronage



MAPrc is very privileged to have had two distinguished Governor Generals as patrons. The Honourable Dame Quentin Bryce AD CVO was our patron from 2009 to 2014. In 2014, His Excellency General the Honourable Sir Peter Cosgrove AK MC (retd) agreed to be the Centre's patron.

On September 23, 2014 His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd) and Her Excellency Lady Cosgrove visited MAPrc and met with staff and students. Professor Kulkarni presented an overview of the work conducted at MAPrc, and senior researchers presented highlights from their specific fields.

Their Excellencies also visited our Transcranial Magnetic Stimulation (TMS) Lab, our ElectrovestibuloGraphy (EVestG) Lab, and our National Register of Antipsychotic Medication in Pregnancy (NRAMP) unit to discuss our research in these fields in greater detail. Many of our students greatly appreciated the opportunity to discuss research with Their Excellencies over a cup of tea.

We are very privileged to have had General Sir Peter and Lady Cosgrove visit our Centre and take great interest in our research.



## Background Info

MAPrc is the Monash Alfred Psychiatry research centre. Our name reflects our position within two major institutions - Monash University's Central Clinical School, and the Alfred Hospital's Department of Psychiatry.

Our focus is on world class, translational, clinical research. The location of our centre within the Alfred Hospital Precinct in Melbourne provides a vital impetus, connecting our work with the real issues facing people with mental illness.

We have many national and international collaborative partners including consumers & carers, advocacy organisations, biotechnology companies and researchers from a number of diverse fields.

Our goal is to improve the lives of people suffering with serious mental health illnesses such as schizophrenia, bipolar affective disorder, major depression and major anxiety. These severe mental illnesses impact hugely on the quality of a sufferer's life, and impose a huge cost on families and on our wider community.

Research at MAPrc is extraordinarily diverse. Our projects include experimental neuroscience studies which are recognised around the world for the breakthrough insights they provide into brain structure and function, in health and illness. New and effective treatment approaches being developed at MAPrc include Transcranial Magnetic Stimulation as a treatment for depression, and Estrogen as a treatment for schizophrenia.

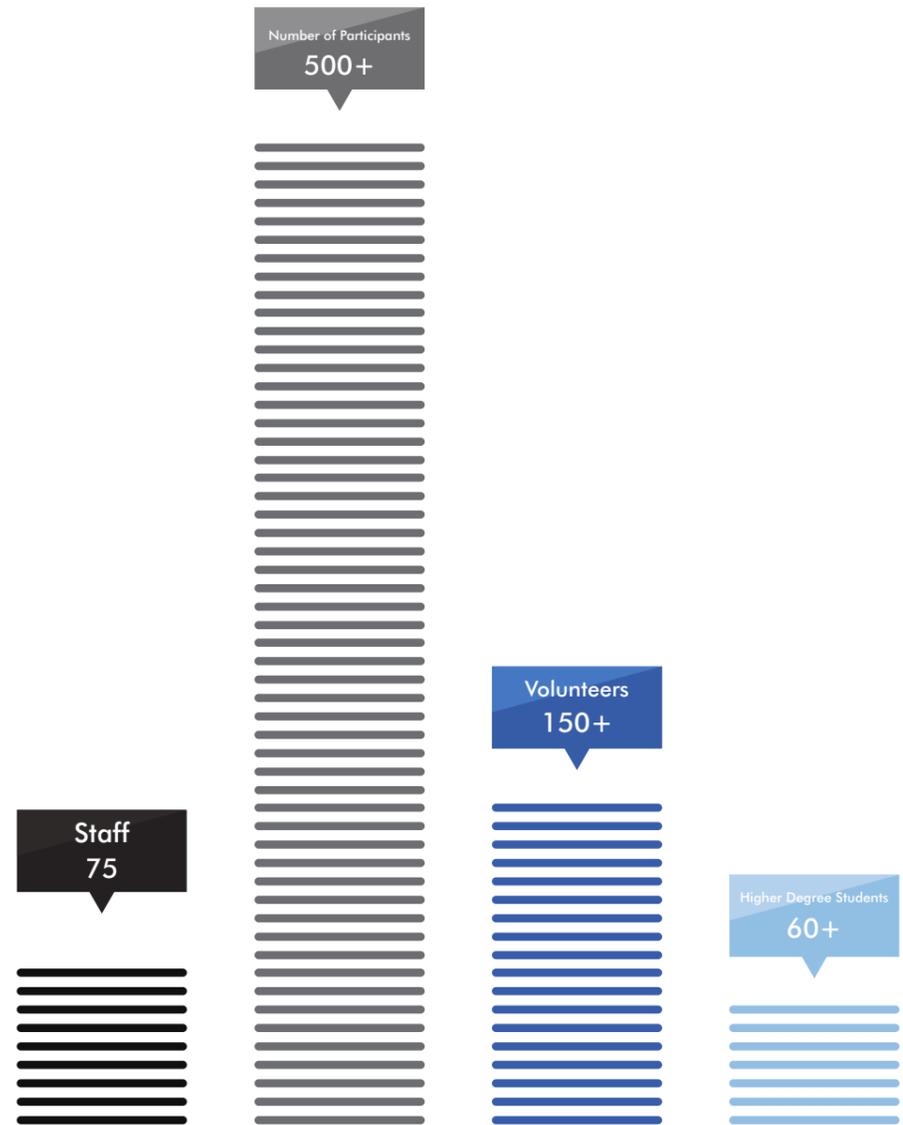
Our researchers are a multidisciplinary team from various backgrounds, including medicine, nursing, psychology, engineering, allied health, neuroscience, and health information services.

Our research is funded by independent competitive grants and a range of other philanthropic funding bodies. These grants typically provide only a portion of the funds required to fully cover the total cost of each individual research

study or trial. Therefore we also rely on donations, and on our own fund raising events to ensure that we can continue to undertake valuable and innovative research in our pursuit of improving the outcomes and quality of life of people living with mental illness.

MAPrc's Executive team is supported by our Research Fellows, Clinical Research Assistants, our teaching staff, our post-graduate and under-graduate students, our enthusiastic team of volunteers and our dedicated administrative staff.

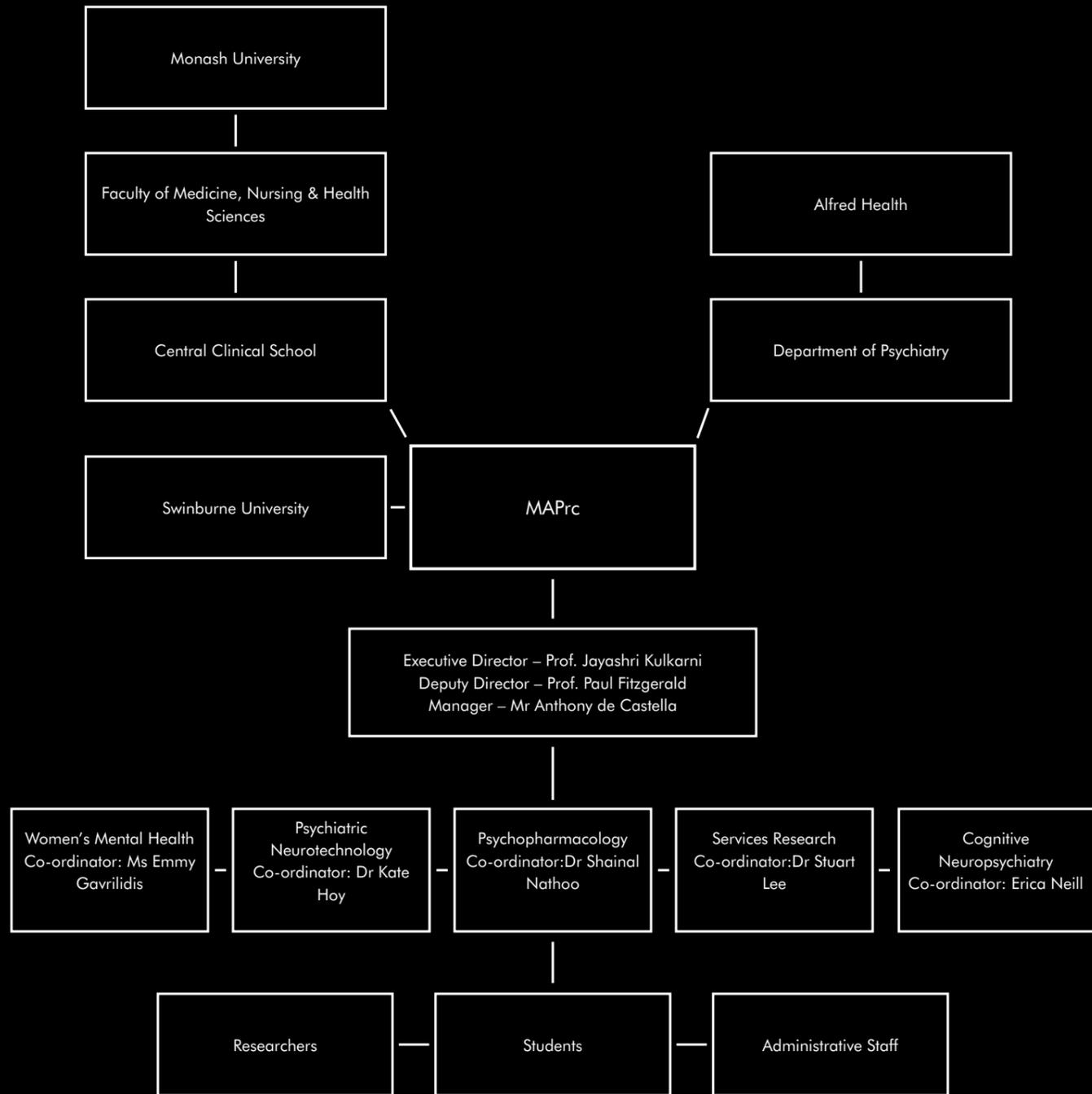
# Overview 2014



Patron: His Excellency General the Honourable **Sir Peter Cosgrove** AK MC (Retd)

<p>Staff</p> <p><b>75</b></p>	<p>Number of participants</p> <p><b>500+</b></p>
<p>Volunteers</p> <p><b>150</b></p>	<p>Awards/Fellowships</p> <ul style="list-style-type: none"> <li>• <b>2014 Young Tall Poppy Award</b> (3 consecutive awards in a row!)</li> <li>• <b>Melbourne Award Jayashri Kulkarni</b> "Individual in the Community"</li> <li>• <b>Three fellowships awarded</b></li> </ul>
<p>Higher Degree Students</p> <p><b>60+</b></p>	<p>Grant Funding</p> <p><b>\$2.5 million</b></p>
	<p>Fundraising / Donations</p> <p><b>\$101K</b></p>

# Organisational structure diagram



# Research

## Case Study

Mrs M, a 51-year-old administrative worker, struggled with depression, lack of motivation and difficulty concentrating. Everyday activities, that she used to take for granted, like brushing her teeth and going out to the mailbox required a lot of effort. Her late onset depression, which started at the age of 45, had coincided with the beginning of her menopause symptoms..

After seeing an advertisement for the menopause and depression study at the Monash Alfred Psychiatry research centre, Mrs M participated in a 12-week double-blind randomised controlled trial, aimed at improving depression in women during menopause. The participants were randomised to receive either daily tibolone or oral placebo, while continuing with their current antidepressant medication.

At the start of the trial Mrs M was experiencing physical menopausal symptoms.

Mrs M experienced major improvements in depression and went into remission at week 4. Her menopause symptoms had subsided from moderate severity to mild by week 4 also. These improvements remained consistent until the end of the trial. At the end of the trial Mrs M was informed that she had received tibolone during the trial.

Mrs M decided to continue taking tibolone and had regular monitoring of her physical and mental health from her family doctor.

Mrs M contacted MAPrc one year after the trial finished, to let us know that she was working in a full-time executive administrative role, and had recently enjoyed a holiday overseas with her husband. She has continued to take tibolone with no adverse effects.

## Professor Jayashri Kulkarni winner of the 2014 Melbourne Award for Contribution to Community by an Individual



For more than two decades, Professor Kulkarni has tirelessly contributed to the mental health field and the greater Melbourne community by bringing new and innovative treatments to patients in desperate need, and training and educating future health professionals from around the world.

Professor Kulkarni is a passionate advocate for women's mental health and has delivered a range of reforms, including the establishment of the Monash Alfred Psychiatry Research Centre Women's Mental Health Clinic; establishment of a women's only in-patient unit at Alfred Psychiatry; development of a world-first treatment approach, using hormones, for women with schizophrenia, bipolar disorder, and depression; and establishment of a national register to improve the management of pregnant women needing treatment with antipsychotic medications.

Professor Kulkarni has led the way in new understandings of gender-specific mental illness, and improved treatment options. Countering the traditionally 'gender blind' approach to psychiatric care, Professor Kulkarni has risen to be a world-recognised pioneer and advocate, highlighting the hormonal, social and cultural factors at play in women's mental health.

# Womens Mental Health



## CHIEF INVESTIGATOR/ TEAM LEADER:

Prof Jayashri Kulkarni

## TEAM COORDINATOR:

Ms Emmy Gavrilidis

## RESEARCHERS:

- Dr Roisin Worsley
- Ms Heather Gilbert
- Dr Jasmin Grigg
- Dr Shainal Nathoo
- Dr Wei Wang
- Dr Tamsyn Van Rheenen
- Dr Annabelle Warren
- Dr Caroline Gurchich
- Mr Anthony de Castella
- Dr Kirsty Raymond

Mental illness has many gender-specific aspects that clinical research has not always addressed. For example, in conditions such as schizophrenia, the age of onset and pattern of symptoms commonly seen is different for women and men. Women and men may also respond differently to medications or other treatments. In addition, fluctuations in sex hormones such as estrogen and progesterone have a significant impact on the mental health of many women. Conditions such as perimenopausal depression, premenstrual depression, postnatal disorders, are all real entities due to hormone changes. Different oral contraceptives can also affect mood.

The Women's Mental Health team is working on numerous aspects of

women's mental health. We conduct a wide range of research in women - from the biological effect of hormones on mental health, to the psychological experience of mental illness and the social or environmental causes of mental ill health, including violence against women. We are developing new treatments and approaches for women. Some examples of our work include:

- A. Research into the role of the neuroendocrine system in mental illnesses, and specifically the use of female hormones to improve the results of treatment. We are conducting ground-breaking research into the use of estrogen to improve symptoms in schizophrenia and the use of selective brain estrogens in postmenopausal women.

We are also exploring possible links between the oral contraceptive pill and depression.

- B. The NRAMP project - the National Register of Antipsychotic Medications in Pregnancy. This is the first study of its kind worldwide. NRAMP is creating a database of information about the effects of antipsychotic medications taken during pregnancy and the postnatal period on mother and baby.
- C. In considering environmental factors and their effect on mental ill health in women, we have conducted work into the impact of domestic or interpersonal violence on women. As part of this we have helped to transform clinical inpatient services for women, and the ongoing development of "women-only" areas in psychiatry wards consolidates our work and lobbying efforts.

## HIGHLIGHTS

- Professor Jayashri Kulkarni won the 2014 Melbourne Award for Contribution to Community by an Individual
- Paper published in the highest impact factor psychiatry journal in the world – Molecular Psychiatry titled : Estradiol for treatment-resistant schizophrenia: a large-scale randomized-controlled trial in women of child-bearing age
- Hosting the Mind Your Family

Conference- held on Oct 10th 2014 at Monash University as well as the development and launch of the GP toolkit

- Publication of paper titled: Establishing female-only areas in psychiatry wards to improve safety and quality of care for women in Australasian Psychiatry journal. This paper raised awareness regarding the importance of female- only areas in the psychiatric ward setting and highlighted that it was an effective way to improve the safety and

experience of care for female patients.

- Publication of paper titled: A Prospective Cohort Study of Antipsychotic Medications in Pregnancy: The First 147 Pregnancies and 100 One Year Old Babies in PLoS One journal. This paper is widely cited and highlights the importance collecting safety and efficacy information about the use of antipsychotic medications in pregnancy which this study has been doing since 2005.

# Current Projects

## DOUBLE-BLIND RANDOMISED INVESTIGATION OF TIBOLONE ALONE OR IN ADJUNCT TO STANDARD ANTIDEPRESSANT TREATMENT FOR DEPRESSION IN MENOPAUSAL WOMEN

### RESEARCHERS:

- Ms Emmy Gavrilidis
- Dr Tamsyn Van Rheenen
- Dr Shainal Nathoo

### CHIEF INVESTIGATOR/ TEAM LEADER:

Prof Jayashri Kulkarni

#### Rationale

All women experience menopause and a significant number suffer from ongoing, severe depression beginning with the major hormone fluctuations in the middle stage of life. We know that the brain and mental state is affected by fluctuating hormone systems about 5 years before the common physical symptoms of hot flushes and cessation of the menstrual period. Studies have shown that many women experience significant physical and psychological changes as they approach menopause and for a long time following. Symptoms such as hot flushes, night sweats, sleep disturbances and changes in libido are common, and impact significantly on quality of life. However, the major reason that many women seek help from menopause clinics or their doctors is for depression and anxiety.

### CHIEF INVESTIGATORS

Dr Kirsty Raymond

### FUNDING

National Health and Medical Research Council (NHMRC) awarded in 2013 for 3 years (\$599,514.44)

#### Aim

We are undertaking a clinical trial aimed at discovering a new treatment approach for this understudied depression that affects a large proportion of women in their late forties and fifties. This trial is comparing the effectiveness of a hormone treatment (Tibolone) for women with severe depression related to menopause, compared with placebo.

#### Participant Criteria

Women aged 45-65 with a (likely) diagnosis of a depressive episode that occurs either as a first onset or a relapse during menopause.

#### Methods

This study is a 12-week randomized controlled trial. Participants will be randomly selected to receive daily

either 1) 2.5mg Tibolone or 2) inactive placebo. Participants will meet with the study coordinator at screening/baseline and at week 12, and will participate in fortnightly over the phone follow-ups in between, to monitor symptoms. The occurrence of any unwanted side effects is also monitored. Following completion of the trial, participants meet with the chief investigator, Professor Jayashri Kulkarni, to discuss their study outcomes and potential treatment options.

#### Project status

The study is ongoing and recruiting participants in 2015.

## AN INNOVATIVE ADJUNCTIVE HORMONE TREATMENT FOR MEN AND WOMEN WITH SCHIZOPHRENIA

### MALE SERM STUDY RESEARCHERS:

Dr Jasmin Grigg

### CHIEF INVESTIGATOR/ TEAM LEADER:

Prof Jayashri Kulkarni  
Dr Caroline Gurvich  
Prof David Barton

### FUNDING FOR SERMS IN MEN

National Health and Medical Research Council (NHMRC) Project Grant commencing in 2013 for 3 years (\$788,419.13)

#### Rationale

Increasing evidence points to the protective role of estrogen in the brain, and its positive effect on the symptoms of schizophrenia and schizoaffective disorder. However, adverse effects on breast and uterine tissue in females, and feminisation of males, limit the long-term therapeutic use of estrogen in this population. Raloxifene is a new hormone treatment that belongs to a group of medications called Selective Estrogen Receptor Modulators (SERMs). Raloxifene is thought to have positive estrogenic effects in the brain without affecting peripheral body tissue, thus offering a longer-term treatment approach with potential mental health and cognitive benefits, and few estrogenic side effects.

Although more commonly associated with women, estrogen is also a naturally occurring hormone in

### FEMALE SERM STUDY RESEARCHERS:

Dr Jasmin Grigg

### CHIEF INVESTIGATOR/ TEAM LEADER:

Prof Jayashri Kulkarni  
Dr Caroline Gurvich  
Prof David Barton

### FUNDING FOR SERMS IN YOUNG WOMEN:

National Health and Medical Research Council (NHMRC) Project Grant commencing in 2011 for 2 years (\$205,016.00)

the bodies of men, and is already used clinically to reverse bone loss, enhance cardiovascular function, and treat prostate cancer. The advantage of using raloxifene instead of estrogen in men is that the beneficial effects of estrogen can be experienced in the brain without the feminising side effects typically associated with hormone treatments.

#### Aim

To examine whether adding raloxifene 120mg/day to regular antipsychotic treatment can improve psychotic symptoms, mood and cognitive functioning, for men and women with schizophrenia or schizoaffective disorder.

#### Participant Criteria

Men and women who are 18+, who have been diagnosed with schizophrenia or schizoaffective disorder, are invited to take part in this study.

#### Methods

This study is a 12-week randomised controlled trial. Participants will be randomly selected to receive daily either 1) 120mg raloxifene hydrochloride, or 2) inactive placebo. Participants will meet with the study coordinator every two weeks to monitor psychopathology symptoms, and memory functioning will be assessed twice during the study. The occurrence of any unwanted side effects is also monitored. Following completion of the trial, participants meet with the chief investigator, Professor Jayashri Kulkarni, to discuss their study outcomes and potential treatment options.

#### Project status

The study is ongoing and recruiting participants in 2015.

## THE NATIONAL REGISTER OF ANTIPSYCHOTIC MEDICATION IN PREGNANCY (NRAMP)

### RESEARCHERS/ INVESTIGATORS

Ms Heather Gilbert/ Prof Jayashri Kulkarni

### NATIONAL COLLABORATORS

A/Prof Kylie Gray ( Centre for Developmental Psychiatry and Psychology, Monash Health)  
Prof Louise Newman - the Royal Women's Hospital  
Dr Thanh Nguyen (WA)  
Dr Felice Watts (WA)  
Professor Philip Boyce (NSW)  
Dr Debra Kennedy (Mothersafe, NSW)  
Dr Roger Bartrop (NSW)  
Professor John McNeil (VIC)  
Professor Fiona Judd (VIC)  
Professor Jane Fisher (VIC)  
Professor Anne Buist (VIC)  
Professor Christos Pantellis (VIC)  
Professor Helen Herrman (VIC)

#### Funding –

AstraZeneca (\$270,000), Janssen-Cilag (\$450,000), Hospira (\$30,500) and Australian Rotary Health Research Fund (\$33,000), Eli Lilly (\$10,000)

#### Rationale

The desire to reproduce is both a powerful urge and a basic human right for women, regardless of mental health status. Deinstitutionalised treatment for mental illness, better pharmacotherapies, and generally higher expectations for a normal quality of life have the potential to raise the incidence of pregnancy in women with psychosis (Miller, Bloom & Resnick, 1992). The right of women with mental illness to become parents subsequently places responsibility upon health care professionals to ensure sound antenatal and ongoing care is both available and accessible.

However there is a notable dearth of information available to clinicians and women who need to make informed decisions for the health and wellbeing of both mother and baby

during pregnancy and breast feeding. Therefore The National Register of Antipsychotic Medication in Pregnancy (NRAMP) was established in 2005, to investigate the safety of antipsychotic medication at this time.

This targeted development of evidence-based clinical guidelines will expand our knowledge, understanding and care plan options for pregnant women and new mothers with severe mental illness who take antipsychotic medication during pregnancy.

#### Aim

To provide a better understanding of the safe use of antipsychotic medication during pregnancy and breastfeeding. This will aid the development of evidence-based guidelines to advise clinical decisions for improved treatment options and encourage safer outcomes for mother and baby.

#### Participant Criteria

Women who are pregnant or have had a baby in the last 12 months,

took antipsychotic medication during pregnancy and are able to provide informed consent

#### Methods

Participants are referred to NRAMP by their clinicians or by self-referral, and may join the study at any time during pregnancy or up to the first 12 months of the baby's life. Participation involves regular telephone and/or face to face interviews, at six to eight weekly intervals during pregnancy, when maternal and fetal health and developmental progress are tracked. Following the birth, further interviews will gather information on the birth outcome and the health and wellbeing of both mother and baby for the first 12 months of life.

#### Project status

NRAMP is current and ongoing; participants do not receive financial reimbursement for their involvement in this study.

## A RANDOMISED DOUBLE-BLIND PLACEBO CONTROLLED INVESTIGATION OF THE EFFICACY OF MEMANTINE AS AN ADJUNCT TO QUETIAPINE IN PATIENTS WITH BORDERLINE PERSONALITY DISORDER

### RESEARCHERS/ INVESTIGATORS

Ms Emmy Gavrilidis & Dr Jasmin Grigg /  
Prof Jayashri Kulkarni

#### Rationale

Memantine is a moderately selective noncompetitive NMDA antagonist that has recently been shown to be effective in improving emotional dysregulation and cognitive performance. Given that these processes are impaired in borderline personality disorder, this research project will investigate the effectiveness of memantine in the treatment of its symptoms. Specifically, we aim to develop evidence-based guidelines to help reduce the symptoms of borderline personality disorder and complex post-traumatic stress in the hopes that, with appropriate intervention, the symptoms of borderline personality disorder can be better managed, reduced or even eliminated.

#### Participant Criteria

Women and men who are 18-35 years old, have been diagnosed with borderline personality disorder or complex post-traumatic stress disorder and are stabilized on Quetiapine

#### Methods

This study is an 8-week randomized controlled trial. Participants will be randomly selected to receive daily either 1) Memantine or 2) inactive placebo. Participants will meet with the study coordinator at screening/baseline, week 2, 4, 6 and 8 and will participate in a clinical interview and some cognitive tasks. Following completion of the trial, participants meet with the chief investigator, Professor Jayashri Kulkarni, to discuss their study outcomes and potential treatment options.

#### Project status

The study is ongoing and recruiting participants in 2015

## COGNITIVE NEUROPSYCHIATRY

### TEAM LEADER:

Prof Susan Rossell

Susan Rossell is a Professorial Research Fellow at Brain and Psychological Sciences Research Centre, Swinburne University and holds adjunct positions at the Monash Alfred Psychiatry research centre and Psychiatry within St Vincent's Health. Her research has focused on understanding the cognitive and neurobiological processes involved in psychosis and related disorders. Prior to coming to Australia, Susan studied at the University of Manchester, the Institute of Psychiatry

(part of Kings College London) and Oxford University. She gained experience in neuroimaging whilst undertaking a position at the world renowned Functional Imaging Lab, Queens Square, London, UK. In 2000, she was awarded a prestigious International Wellcome Post-doctoral Fellowship during which she spent part of her time at Macquarie University in Sydney. From 2004 to 2007, she was Head of the Cognitive Neuropsychiatry Department at the Mental Health Research Institute,

Melbourne. In 2008, she moved to Monash Alfred Psychiatry Research Centre and in 2010, joined Swinburne University. Susan has published extensively, and has received the International and European awards for Young Investigator in schizophrenia.

### TEAM COORDINATOR:

Dr Erica Neill

### SENIOR RESEARCHERS:

Dr Caroline Gurvich  
Dr Neil Thomas  
Dr Tamsyn Van Rheenen  
Dr Wei Lin Toh  
Eric Tan

### STUDENT RESEARCHERS:

Shayden Bryce (D.Psych Neuropsychology)  
Sean Carruthers (PhD)  
Natalia Contreras (PhD)  
Sarah Lancaster (PhD)  
Stephanie Louise (D.Psych Clinical Psychology)  
Maree Reser (D.Psych Clinical Psychology)  
Monique Scott (D.Psych Clinical Psychology)  
Phillip Sumner (PhD)

### LIST OF ASSOCIATE INVESTIGATORS

Prof David Copolov,  
Monash University  
Prof Tony David,  
Institute of Psychiatry, UK  
Dr Sonia Davidson  
Monash University  
Dr Rachel Mitchell  
Institute of Psychiatry, UK  
Prof Sue Davies  
Monash University  
Prof Val Curran  
University College London, UK  
Dr Andrea Gogos,  
Monash University  
Prof Celia Morgan  
University of Exeter, UK

Dr Fiona Jane  
Monash University  
Dr Philip Grant at  
University of Giessen, Germany  
Prof Jennie Ponsford  
Monash University  
Prof Iris Sommer  
University of Utrecht, Netherlands  
Dr Greg Yelland  
Monash University  
Dr Yitz Hollander  
Alfred Hospital  
Dr Kiyomet Bozaoglu,  
Baker IDI  
A/Prof Mal Hopwood  
Austin Health

Dr John Farhall  
La Trobe University  
Dr Ellie Fossey  
La Trobe University  
Prof Pat Michie  
University of Newcastle  
Prof Gary Egan  
Howard Florey Institute  
A/Prof Carol Harvey  
University of Melbourne  
Prof David Castle  
St Vincent's Health  
Swinburne University Neuroimaging  
Facility



## HIGHLIGHTS

Dr Tamsyn Van Rheenen was awarded a travel award to attend the International Cognitive Neuroscience Society Conference in Brisbane. Further, Tamsyn also won both the Swinburne School of Health Sciences Best Thesis Award and the APS Award for Excellent Thesis in Psychology. Professor Susan Rossell and Dr Neil Thomas will be responsible for organising the International Consortium on Hallucination Research in Melbourne, Australia in 2015.

Professor Susan Rossell, Dr Erica Neill and Eric Tan presented at the prestigious Schizophrenia International Society Conference held in Florence and all three were awarded poster prizes for their work (all three posters were regarded to be in the top 40 of over 800 posters presented).

## TEACHING

Professor Rossell coordinates the Neuropsychology lecture series through Swinburne University for psychology honours students. A number of these lectures were presented by members of our research group including Dr Erica Neill, Dr Tamsyn Van Rheenen and Dr Caroline Gurvich.

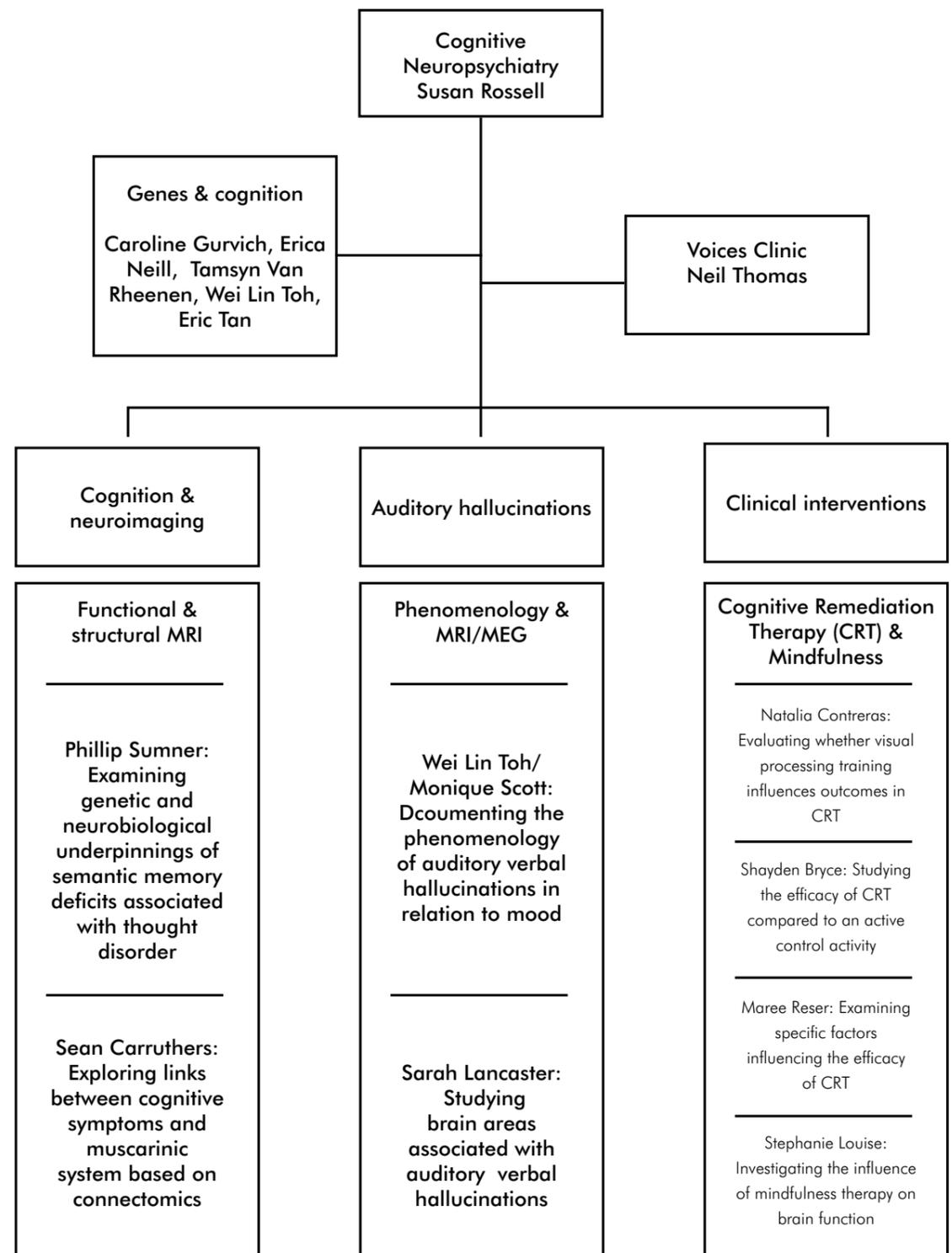
## COLLABORATIONS

Dr Erica Neill and Professor Susan Rossell set up a research collaboration with Dr Philip Grant at Giessen University in Germany. Together, we are investigating the genetics of schizotypy.

Professor Susan Rossell has an ongoing collaboration with Dr Kiymet Bozaoglu at the Baker IDI to explore the genetics of severe mental illness

## Overview of team's research and aims

The Cognitive Neuropsychiatry lab aims to examine the relationships between mental illness, cognitive function and emotion processing, especially focusing on schizophrenia, schizoaffective disorder, bipolar disorder and major depressive disorder. We use techniques involving a full battery of cognitive assessments, eye-tracking and neuroimaging to better understand the biological underpinnings of these disorders. We also collect genetic information so that in time, we may link the cognitive, eye-tracking and neuroimaging data to specific combinations of genes.



## Current Projects

In the Cognitive Neuropsychiatry lab group, focus is placed on a large-scale research program, with a series of smaller studies subsumed under the umbrella of this project. These individual studies are often run by students to fulfil the research component toward attaining their postgraduate qualifications (see Figure 1). Our large-scale research program 'Genes and Cognition' requires participants to complete a set battery of tasks designed to evaluate clinical symptomatology, cognitive function and eye movements. The majority of participants assessed by our research group will complete this battery. Thereafter, they may wish to further participate in specific projects, for instance neuroimaging sessions conducted at Swinburne University, or therapies aimed at strengthening specific thinking skills, such as attention, memory and organisation.

### COGNITION AND NEUROIMAGING STUDIES

Prof Susan Rossell (Chief Investigator)  
Dr Caroline Gurvich  
Dr Erica Neill  
Dr Tamsyn Van Rheenen,  
Eric Tan  
Sean Carruthers  
Sarah Lancaster  
Phillip Sumner

### FUNDING

NHMRC; Barbara Dicker Brain Sciences Foundation

### BACKGROUND

Psychotic disorders, involving schizophrenia, schizoaffective disorder, and bipolar disorder, are characterised by a broad range of symptoms, such as hallucinations, delusions, and thought disorder. People who experience psychosis are also likely to exhibit noted cognitive difficulties, specifically in the areas of language, memory and executive function. There is a need to further investigate how these cognitive deficits are linked to particular psychotic symptoms, such as 'hearing voices', unusual beliefs or impaired thinking patterns. In some cases, the cognitive deficits have also been coupled with specific brain abnormalities. In a similar way, multiple genes have been found to be related to the presence of certain observed symptoms. Our hope is that a better understanding of cognition, neurobiology and genetic contributions underlying these disorders will spur the development of effective and novel pharmacological and psychological interventions.

### AIM

Study 1 aims to examine the genetic and functional magnetic resonance imaging (fMRI) underpinnings of semantic memory deficits associated with thought disorder in schizophrenia. Study 2 aims to specifically investigate the influence of a genetic polymorphism of the M1 receptor gene on cognition as well as structural networks connecting key brain regions involved in cognitive function in schizophrenia.

### METHOD

Participant groups are individuals with schizophrenia (n=50; including those with thought disorder) as well as age-, sex-, and IQ-matched healthy controls (n=50). Participants are asked to undergo a standard clinical and cognitive assessment battery, blood-taking for genetic testing, followed by a two-hour non-invasive functional and structural magnetic resonance imaging (MRI) session.

### CURRENT STATUS

Ongoing until end 2016.

## Current Projects

### AUDITORY VERBAL HALLUCINATION STUDIES

Prof Susan Rossell (Chief Investigator),  
Dr Neil Thomas  
Dr Wei Lin Toh  
Sarah Lancaster  
Monique Scott

### FUNDING

NHMRC; Barbara Dicker Brain Science Foundation

### BACKGROUND

Auditory verbal hallucinations, also known as 'hearing voices', refer to the perception of verbal utterances in the absence of corresponding external stimuli. Whilst auditory verbal hallucinations are regarded as a hallmark indicator of psychosis, they are encountered in various diagnoses. Yet only limited research has considered them in the presence of bipolar disorder and major depressive disorder, despite recognition of their frequency in these conditions. These gaps in knowledge therefore need to be addressed, and it is imperative to identify how voice characteristics differ in the mood disorders, and also fluctuate according to diagnostic subtype or illness phase.

Whilst the phenomenology of auditory verbal hallucinations has been well-documented in schizophrenia, its specific neurobiological mechanisms and genetic underpinnings remain unknown. Emerging research indicates that individuals with auditory verbal hallucinations show auditory and cortical abnormalities not present in other individuals with psychosis who do not 'hear voices'. As such, neuroimaging techniques involving MRI and magnetoencephalography (MEG; with millisecond 'real-time' resolution) will be employed to elucidate the specific neuroanatomical brain regions as well as cerebral activation patterns implicated in 'voice-hearing' experiences.

### AIM

Study 1 aims to explore the phenomenology of auditory verbal hallucinations in relation to mood in bipolar disorder and major depressive disorder. Study 2 aims to discover activations associated with 'voice-hearing' in schizophrenia, as well as determine the roles that the anterior cingulate, primary auditory cortex and superior temporal gyrus play in these experiences.

### METHOD

For Study 1, participant groups are individuals who experience auditory verbal hallucinations, and have a diagnosis of bipolar disorder (n=60), major depressive disorder (n=30) or schizophrenia (n=60), OR who do not have a significant mental health history (n=30). Participants are asked to undergo a standard clinical assessment battery, followed by a focused interview on the phenomenology of their 'voice-hearing' experiences. For Study 2, participant groups are schizophrenia 'voice-hearers' (n=50), schizophrenia 'non-voice-hearers' (n=50) and healthy controls (n=50). Participants are asked to undergo a standard clinical and cognitive assessment battery, blood-taking for genetic testing, followed by a two-hour non-invasive MRI and MEG session, and auditory tasks.

### CURRENT STATUS

Study 1 is ongoing until end 2015, and Study 2 is ongoing until end 2016.

## Current Projects

### CLINICAL INTERVENTION STUDIES

Prof Susan Rossell (Chief Investigator), Dr Neil Thomas, Shayden Bryce, Natalia Contreras, Stephanie Louise, Maree Reser

### FUNDING

MAZDA; St Vincent's Hospital Research Endowment Fund

### BACKGROUND

Cognitive Remediation Therapy (CRT) comprises a set of cognitive drills or compensatory interventions designed to improve cognitive abilities such as attention, working and verbal memory, flexibility and planning, and executive function, which in turn lead to improved social functioning. There is increasing empirical support regarding the benefits of CRT for people with schizophrenia. These positive effects on cognitive performance are noted to persist, even after the interventions have ceased. In fact, these cognitive gains have been linked to advances in securing and maintaining gainful employment. There is wide variation in existing CRT programs in terms of their focus (e.g. psychosocial vs. vocational), frequency/duration of sessions, or appropriate outcome measures. Ongoing research has tried to identify the 'active ingredients' promoting a positive treatment response as well as motivational enhancements indicative of intervention success.

Mindfulness-based therapy seeks to interrupt automatic cognitive processes and teach individuals to focus less on reacting to incoming thoughts and feelings, but instead become aware of, observe and accept them without attachment or judgment. This mindfulness practice allows one to notice when these involuntary responses are occurring and to alter their reaction to form more of a reflection. There has been scant neuroimaging research in this area, but preliminary fMRI data has shown increased activation in the prefrontal cortex, signifying a greater degree of self-control.

### AIM

Studies 1, 2 and 3 all seek to evaluate various aspects pertaining to the efficacy of CRT in individuals with schizophrenia or schizoaffective disorder. Study 1 aims to evaluate whether visual processing training

influences outcomes in CRT. Study 2 aims to examine the efficacy of a top-down cognitive remediation program (COGPACK) relative to an active video-game control. Study 3 aims to identify specific factors influencing the efficacy of CRT outcomes. Study 4 is a mindfulness-based treatment for people who experience auditory verbal hallucinations, and comprises a group therapy program designed to help people cope better with these experiences.

### METHOD

For Studies 1, 2 and 3, participants are asked to attend a set number of hour-long group CRT sessions per week for a pre-determined number of weeks. Baseline, mid-intervention, end-intervention, and follow-up assessments will be conducted, with cognitive performance (MATRICS) and self-reported independent living skills as the main outcome measures. For Study 4, participants attend a mindfulness-based group therapy program targeted at 'voice-hearers'. Prior to and following this intervention, they are asked to undergo a neuroimaging session to explore whether such therapy can lead to brain changes.

### CURRENT STATUS

Study 1 has been completed, and is currently in the data analysis and write-up stage. Studies 2, 3 and 4 are ongoing until end 2016.

## CCT and tDCS Case Study:



Ben\* is a 42 year old married father of three who works in the construction industry. He came to MAPrc seeking treatment for recurrent depression, which began during his adolescence. Ben has experienced periods of depression on and off throughout his adult life, with the longest episode lasting the past 10 years. There is a history of depression in both sides of Ben's family. He has trialled a number of antidepressant medications in the past, but none had given him persistent relief from his depressive illness. Ben took part in the Beyondblue sponsored cognitive control training (CCT) and transcranial Direct Current Stimulation (tDCS) trial. This is a clinical trial testing the antidepressant efficacy of a new cognitive therapy for depression (CCT) and a mild form of brain stimulation (tDCS). He attended MAPrc for three weeks of daily treatment sessions. Before beginning the treatment Ben described feeling flat and down every day, with little interest in activities he previously enjoyed such as exercising and socialising. He was often anxious

and struggled with persistently low energy and motivation and felt he was just "going through the motions" of daily life. Ben described his outlook on life as "beige" and often felt weary of being alive. After three weeks of daily CCT and tDCS Ben's mood, energy levels and outlook improved. He felt brighter and more emotionally connected with his family and started to enjoy socialising again. He no longer felt anxious and was coping much better with work and home life stressors. Ben started to feel optimistic about the future for the first time for a number of years and no longer questioned the point of being alive. When Ben came back to see the MAPrc team again two months later his mental state had improved even further, and his depression was in remission.

# PSYCHIATRIC NEUROTECHNOLOGY

## OVERVIEW OF TEAM'S RESEARCH AND AIMS

Psychiatric Neurotechnology research uses advanced neuroscience technology to investigate brain function and to develop innovative treatments for Depression, Schizophrenia, Autism and Asperger's syndrome, Bipolar disorder, Obsessive Compulsive Disorder (OCD), Fibromyalgia, Traumatic Brain Injury and Mild Cognitive Impairment.

Our novel treatments include the following Brain Stimulation techniques, which are being increasingly used as effective non-invasive ways of studying and modifying brain function: Transcranial Magnetic Stimulation (TMS), Transcranial Direct Current Stimulation (tDCS), Transcranial Alternating Current Stimulation (tACS), Transcranial Random Noise Stimulation (tRNS), Magnetic Seizure Therapy (MST) and Deep Brain Stimulation (DBS).

The team uses advanced imaging techniques, including Electroencephalography (EEG), Near infra-red spectroscopy (NIRS), Magnetic resonance imaging (MRI), Diffusion tensor imaging (DTI) and Positron emission tomography (PET).

### TEAM LEADER:

Professor Paul Fitzgerald

### SENIOR RESEARCH FELLOW/GROUP LEADER:

Dr Kate Hoy, Cognitive Neurotechnology Research Group

### RESEARCH FELLOWS:

Dr Rebecca Segrave, Dr Richard Thomson, Dr Neil Bailey, Dr Bernadette Fitzgibbon, Dr Jerome Maller

### RESEARCH REGISTRAR:

Dr Atima Saxena

### RESEARCH NURSES:

David Elliot, Susan McQueen and Julia Quirk

### RESEARCH ASSISTANTS:

Sara Arnold, Hannah Coyle, Cassie Thomson



## HIGHLIGHTS

- Prof Paul Fitzgerald: Biological Psychiatry Australia, Isaac Schweitzer Lecture award, October, 2014
- Dr Bernadette Fitzgibbon: 2014 Bethlehem Griffith Foundation Young Investigator of the Year.
- Dr Bernadette Fitzgibbon: 2014 Victorian Young Tall Poppy Award.
- Dr Kate Hoy: Election to Deputy Chair Position of the Australian Academy of Science Early-Mid Career Researchers Forum.
- Dr. Rebecca Segrave: Selected to represent Australian ECR's at the 64th Lindau Nobel Laureates Meeting.
- Mr Dean Whitty (BMed Sci Student)'Present to A Person of Influence' prize AMREP ECR Conference.
- Ms Laura Blair-West (BMed Sci Student): 'Poster Prize' at the AMREP ECR Conference.

## CURRENT PROJECTS

### CLINICAL TRIALS

#### ACCELERATED RTMS IN THE TREATMENT OF DEPRESSION

##### Researchers

Prof. Paul Fitzgerald (PI), Dr Kate Hoy, Ms Susan McQueen, Mr David Elliot, Ms Julia Quirk, Mr Rodney Anderson, Ms Melissa Kirkovski, Ms Hannah Coyle, Ms Cassandra Thomson

##### Funding

NHMRC Project Grant, \$470,000, 2013-2016

##### Aim

To investigate whether accelerated rTMS has efficacy in the treatment of patients with a major depressive disorder.

##### Participants

Persons with treatment resistant depression between the ages of 18 – 75.

##### Methods

It is a randomised control trial where participants have a 50/50 chance of being in either a standard treatment arm (single treatments, Monday to Friday, for 4 weeks) or to the accelerated treatment arm (3 treatments per day on 6 days spread over 3 weeks).

##### Project status

This project is currently in progress. 45 participants have consented, with a recruitment target of 80.

#### PREDICT: INVESTIGATING PREDICTORS OF RESPONSE TO TMS

##### Researchers

Prof Paul Fitzgerald (PI), Dr Kate Hoy, Ms Susan McQueen, Mr David Elliot, Ms Julia Quirk, Mr Rodney Anderson, Ms Melissa Kirkovski, Ms Hannah Coyle, Ms Cassandra Thomson.

##### Funding

Alfred Health Grant, \$485, 818, 2011-2014

##### Aim

To explore the potential of both novel and more established neuroscience tools as potential predictors of response to repetitive transcranial magnetic stimulation (rTMS) treatment in patients with depression

##### Participants

Persons with treatment resistant depression between the ages of 18 – 75.

##### Methods

Participants will undergo either a TMS/ EEG recording or an MRI brain scan as part of pre-treatment assessments. Then they will be provided with three weeks of left sided high frequency (LHF) rTMS treatment. At week three depressive symptoms are assessed, if no significant reduction of depressive symptoms is demonstrated participants are randomised to one of three treatment conditions for the next three weeks i) continuing HFL treatment, ii) low frequency right sided (LFR) treatment or iii) bilateral stimulation (HFL and LFR). Pre-treatment assessments are repeated at the end of the treatment course.

##### Project status

This study is nearing completion. Currently 115 of a projected 125 patients have consented to be involved in the study. 28 of a targeted 60 controls have also consented.

#### CCT: COGNITIVE CONTROL TRAINING FOR DEPRESSION: APPLICATION, EVALUATION AND AUGMENTATION

##### Researchers

Dr Rebecca Segrave, Prof Paul Fitzgerald, Dr Kate Hoy and Ms Cassandra Thomson

##### Funding

Beyond Blue, Victorian Centre of Excellence – Early Career Researcher Award, \$97,598, 2013 – 2015 Monash University, Central Clinical School, Early Career Researcher Strategic Development Grant, \$52,604, 2012

##### Aim

The aim of this study is to see whether cognitive control training is an effective treatment for depression, and also whether combining it with tDCS boosts antidepressant outcomes.

##### Participants

Persons currently suffering depression between the ages of 18-65 years who do not have a neurological illness, history of brain injury, a learning difficulty or ADHD and are not taking any benzodiazepines, mood stabilisers or antipsychotic medications.

##### Methods

Participants will be provided with three weeks of daily treatment (Monday-Friday). Each treatment session will involve cognitive training and mild brain stimulation and will take approximately 45 minutes. Participation in the study will also include clinical interviews and completion of some computerised activities

##### Project status

The study currently has 29 participants recruited and is ongoing in 2015.

#### TBI: THE USE OF TMS IN THE TREATMENT OF THE SEQUELAE OF CLOSED HEAD INJURY.

##### Researchers

Prof Paul Fitzgerald (PI), Dr Kate Hoy, Ms Susan McQueen, Mr David Elliot, Ms Julia Quirk, Ms Hannah Coyle, Ms Cassandra Thomson.

##### Funding

Victorian Neurotrauma Initiative, \$500,000, 2008-2014

##### Aim

To assess the effectiveness of rTMS in treating depression post traumatic brain injury.

##### Participants

Persons with major depressive disorder between the ages of 18-70 who have experienced a closed head injury of mild to moderate severity preceding their depression and are at least 6 weeks post injury.

##### Methods

The study involved a 4 week (20 sessions) randomised double-blind clinical trial with two treatment arms. The first arm involved rTMS active bilateral treatment. The second type was a placebo treatment. Participants participated in reviews every two weeks to monitor changes in depressive symptoms. Cognitive tasks were completed at the initial assessment and the end of the treatment course. All individuals in the placebo condition first are offered active treatment.

##### Project status

This study is completed. 22 participants consented and the data is currently being analysed for publication in 2015.

#### MST/ECT: A RANDOMISED CONTROLLED TRIALS OF MAGNETIC SEIZURE THERAPY IN MAJOR DEPRESSIVE DISORDER

##### Researchers

Prof. Paul Fitzgerald, Dr Kate Hoy, Ms Cassandra Thomson, Ms Susan McQueen, Ms Julia Quirk, Mr David Elliot, Ms Hannah Coyle,

##### Funding

NHMRC Project Grant, \$360,000, 2011 - 2014 Beyond Blue Victorian Centre of Excellence Project Grant, \$121, 890, 2012 - 2015

##### Aim

To evaluate magnetic seizure therapy (MST) for patients with depression that has proved extremely resistant to standard treatments.

##### Participants

Persons with treatment resistant depression between the ages of 18 – 75.

Methods - It is a randomised controlled trial comparing the effectiveness of MST to ECT.

Participants have 50/50 chance of receiving receive MST or ECT. The treatment course will involve up to 15 treatments over a five week period (i.e. three treatments a week). Participation involves an interview and cognitive assessments prior to commencing in the clinical trial.

##### Project status

The study currently has 34 participants recruited and is ongoing in 2015.

## Education and Training

The Psychiatric Neurotechnology Team provides comprehensive clinical and research training in brain stimulation techniques. In 2014 we expanded our work in this area, and in 2015 will be running six training courses.

Our various training programs have been developed to cater for both researchers and clinicians.

The Brain Stimulation Courses for Researchers are designed for research

students and post-docs who are new to techniques such as TMS and tDCS, as well those with more experience who wish to use advanced brain stimulation methodologies such as integrating TMS with EEG.

The Clinical TMS Certification Courses provide training in the provision of TMS for the treatment of Major Depression. These courses have been designed for medical and nursing

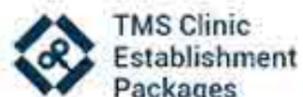
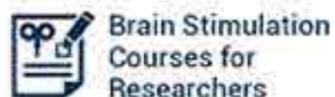
graduates, with options for those new to TMS as well as those with TMS experience.

Our training website for these courses was also launched in 2014: [www.tmscourse.com](http://www.tmscourse.com)



### BRAIN STIMULATION Training programs at MAPrc

Training programs designed and delivered by Professor Paul Fitzgerald and his internationally recognised team of clinicians and researchers.



For more information visit  
[www.tmscourse.com](http://www.tmscourse.com)



## Cognitive Neurotechnology Research Group



This research group is led by Dr Kate Hoy and, situated within the Psychiatric Neurotechnology Team, investigates the neurocognitive outcomes of techniques such as transcranial Direct Current Stimulation (tDCS), transcranial Alternating Current Stimulation (tACS), transcranial Random Noise Stimulation (tRNS), Transcranial Magnetic Stimulation (TMS), and Theta-Burst Stimulation (TBS). The ultimate goal of this program of research is the development of novel biological approaches to the treatment of cognitive impairment.

### Current Projects

1. Neurobiology of cognitive symptoms in Schizophrenia: a TMS-EEG study
2. Investigating the use of direct current stimulation for the enhancement of cognition in Schizophrenia
3. A clinical trial of transcranial direct current stimulation and cognitive training in TBI
4. Brain stimulation, aging and cognition
5. Exploring the Behavioural and Neurobiological Effects of 'High-Definition' tDCS

### OTHER/CURRENT EXPERIMENTAL STUDIES

- Optimizing the use of Theta Burst TMS in Modifying Brain Activity
- Optimizing TBS protocols for major depressive disorder: A focus on affective processing bias.
- Bridging the Gap between Sensory and Social Processing Impairment in Autism Spectrum Disorders: An Investigation into Multimodal Pain Processing.
- Deep Brain Stimulation for treatment refractory major depression.
- Neurobiology of Mindfulness

## Case Study:

Amanda\* is a qualified health professional in her early 30's with longstanding treatment resistant depression and anxiety. Amanda's episodic depression developed in her adolescence and has been recurrent throughout her adult life. Psychological and pharmacological interventions have only been partially effective. Amanda's depression is in the context of a significant family history of mental illness. In the year before receiving treatment at MAPrc Amanda was admitted to hospital twice for her mental health.

Prior to commencing TMS treatment Amanda reported she felt consistently sad and was getting very little satisfaction out of previously

pleasurable activities and time with friends. Poor motivation, low energy and difficulty concentrating meant that each day it was a struggle for to go to work and perform her job. Amanda described feeling her future was hopeless.

Amanda received six weeks of daily TMS treatment as part of a clinical trial. Post treatment Amanda reported her mood and energy levels had improved, she could think more clearly and felt she was able to manage stressors better. Amanda is now 4 months post treatment and reports she has "never felt this good"; she is optimistic about her future and her friends and family have remarked that the changes in her mood and outlook are significant.

## Psychopharmacology



**Principal investigator:**  
Professor Jayashri Kulkarni

**Team Leader:**  
Dr Shainal Nathoo

**Team Manager:**  
Mr Anthony de Castella

**Sub-investigators:**  
Dr Shainal Nathoo and Dr Kirsty Raymond

**Researchers:**  
Bodil Hook, Rachael Clear, Mirjana Stojkovic, Natalia Contreras and Macarena Aguilar

### AREA OF STUDY

Medication remains a cornerstone of treatment for most mental illnesses. For this reason, one of our areas of research is examining new and improved medications for serious mental illnesses such as schizophrenia, bipolar affective disorder, major depression, anxiety and other disorders.

In keeping with our research philosophy of equality, respect and understanding, the clinical trials that we undertake are limited in number and aim to provide better symptom resolution and overall outcomes for our patients. We do not undertake studies that contain placebo-only groups and we require that the active medications being trialled are ones that have been shown in preliminary trials to be superior to currently available

medications. During trials, we take care in monitoring the participants' subjective assessments of their experience, the effects of the trial medications and other general responses. We also invite carers to give their views and opinions about the treatments being studied. In recent years, a number of new and improved treatments have become available, and advances in biotechnology are paving the way for new techniques for drug discovery. We believe that the future holds substantial hope for new and better treatment options for people living with devastating mental illnesses.

## A PHASE 3 EFFICACY AND SAFETY STUDY OF ALKS 5461 FOR THE ADJUNCTIVE TREATMENT OF MAJOR DEPRESSIVE DISORDER (THE FORWARD-4 STUDY)

### Researchers:

Professor Kulkarni (Principal investigator) , Dr Shainal Nathoo (sub-investigator), Ms Natalia Granifo and Ms Bodil Hook (study co-ordinators)

### Funding:

Project Sponsor : Alkermes, Inc. Waltham, MA, USA Local Sponsor, Premier Research (Australia) PTY LTD

### Rationale:

The study is a part of a program for developing a sublingual fixed-dose combination product, consisting of buprenorphine (BUP) and samidorphan called ALKS 5461, for use as an adjunctive therapy to antidepressants for the treatment of major depressive disorder (MDD).

This study is a multicentre, randomized, double-blind study to evaluate the efficacy, safety and tolerability of ALKS 5461 in participants with MDD, for the adjunctive treatment of MDD in adults who have an inadequate response to antidepressants.

### Objectives of study:

- To evaluate the efficacy of ALKS 5461 for the adjunctive treatment of MDD in adults who have an inadequate response to antidepressant treatment.
- To evaluate the safety and tolerability of ALKS 5461 in adults who have MDD and an inadequate response to antidepressant therapy.

### Main Criteria for Inclusion:

- Men and women aged between 18 and 70 years of age; with a diagnosis of MDD, in which the current Major Depressive Episode (MDE) has lasted 8 weeks to 24 months; and
- Have had an inadequate response to an adequate course of treatment with an SSRI, SNRI, or bupropion during the current MDE.

### Duration of Study:

The duration of the study will be between 16 and 24 weeks, and upon completion, participants may be eligible to enter a year-long open-label study investigating the long-term safety and tolerability of ALKS 5461 for the adjunctive treatment of MDD.

### Reimbursement:

Participants will be reimbursed for their travel expenses.

### Project status:

The study will start to recruit participants in early 2015.

### Study Coordinator:

Ms Bodil Hook

## MULTICENTRE, RANDOMIZED, DOUBLE-BLIND TRIAL TO ASSESS THE EFFICACY AND SAFETY OF ASC-01 IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER (MDD) – Otsuka Pharmaceutical Co., LTD

### Researchers

Professor Kulkarni (Principal investigator), Dr Shainal Nathoo and Dr Kirsty Raymond (sub-investigators), Ms Mirjana Stojkovic (study co-ordinator)

### Funding

Project sponsor: Otsuka Pharmaceutical Co. LTD  
Local Sponsor: Parexel International Pty Ltd

### Rationale

Aripiprazole is an antipsychotic developed by Otsuka Pharmaceutical Co. Sertraline is widely used in clinical settings among many SSRIs and was chosen as a SSRI to be combined with Aripiprazole to treat major depressive disorder.

Trial Phase 3: ASC-01 (Aripiprazole / Sertraline Combination)

### Aim

To evaluate the efficacy and safety of ASC-01 (Aripiprazole/Sertraline combination) compared to sertraline monotherapy in patients with major depressive disorders who have responded incompletely to antidepressant/s.

### Participant Criteria

- Males and females 20-65 years old
- Patients classified as MDD or MDD, Recurrent (DSM-5), and who are experiencing a current episode of major depression that has been continuing for at least 8 weeks
- Patients who have had one to three courses of adequate antidepressant treatment for their current episodes of major depression, but showed incomplete response to all these treatment courses.
- Patient currently on an antidepressant and willing to change their medication, or currently experiencing depression and on no medication.

### Exclusion criteria

- Patients who have had electroconvulsive therapy

### Study Coordinator

Dr Mirjana Stojkovic

## A DOUBLE-BLIND, PLACEBO CONTROLLED, RANDOMIZED INVESTIGATION OF ONDANSETRON IN CHRONIC RESIDUAL SCHIZOPHRENIA

### Researchers

Professor Kulkarni (Principal investigator) , Dr Shainal Nathoo , Dr Kirsty Raymond (sub-investigators), Ms Rachael Clear (study co-ordinator)

Funding – The Stanley Foundation

### Rationale

Ondansetron, a serotonin 5HT<sub>3</sub> receptor antagonist, has shown promising results in the treatment of schizophrenia symptoms in a number of small scale studies. In particular, ondansetron has shown benefits in reducing the persistent cognitive and other symptoms experienced by many patients with schizophrenia.

### Aim

To evaluate the effectiveness of ondansetron as an adjunct to antipsychotic medication, in the treatment of positive, negative and cognitive schizophrenia symptoms

### Study Design

- 12 week trial consisting of 5 visits
- 160 participants diagnosed with schizophrenia, schizoaffective or schizophreniform disorder
- Participants will be randomized to receive either ondansetron or placebo

### Main Inclusion Criteria

- Aged between 18-65 years
- Current DSM-IVTR diagnosis of schizophrenia, schizoaffective or schizophreniform disorder
- Current treatment with a stable and standard dose of an antipsychotic medication, oral or intramuscular (minimum 8 weeks)
- Ability to provide informed consent

### Main Exclusion Criteria

- Currently pregnant or breastfeeding
- Unstable medical condition, neurological disorder or unstable seizure disorder
- Current DSM-IV-TR diagnosis of substance abuse or dependence disorder or another Axis I disorder
- Regular use of another 5HT<sub>3</sub> antagonist (e.g. Cocaine)

## A PHASE 4, RANDOMIZED, DOUBLE-BLIND, ACTIVE AND PLACEBO -CONTROLLED, MULTICENTER STUDY EVALUATING THE NEUROPSYCHIATRIC SAFETY AND EFFICACY OF 12 WEEKS VARENICLINE TARTRAT 1 MG BID AND BUPROPION HYDROCHLORIDE 150 MG BID FOR SMOKING CESSATION IN SUBJECTS WITH AND WITHOUT A HISTORY OF PSYCHIATRIC DISORDERS.

### Researchers

Professor Kulkarni (Principal investigator) , Dr Shainal Nathoo, Dr Kirsty Raymond (sub-investigators), Ms Natalia Granifo and Ms Bodil Hook (study co-ordinators)

### Funding

Pfizer Australia Inc.

### Aim

The purpose of this study is to find out if the study drugs, varenicline and bupropion, can be used safely and effectively as smoking cessation treatments in people with a history of a mental health disorder. In order to do this, the study also needs to include people without a history of a mental health disorder as a comparison.

### Participants

The study requires male or female smokers who:

- are aged 18-75
- are motivated to quit smoking
- are considered suitable for a smoking cessation program
- have smoked a least 10 cigarettes per day during the past year and during the month prior to the study commencing.

### Methods

People selected to participate in the study will need to attend 15 outpatient visits over a 26-week period. They will also be required to be available for 11 phone calls during the study. Participants follow a course of active treatment for 12 weeks and receive one of the following - varenicline, bupropion, transdermal nicotine patch, or a placebo (an inactive substance, identical in appearance to the study drugs). Neither the researcher, nor the participant will know whether a treatment or placebo is being administered. After completing the 12 weeks of active treatment, there is an additional 12 week non-treatment follow-up phase. All participants will receive brief counselling and support for smoking cessation at each clinic visit.

## ISPOT-D STUDY - TITLE: INTERNATIONAL STUDY TO PREDICT OPTIMISED TREATMENT – IN DEPRESSION

### Researchers

Professor Kulkarni (Principal investigator) , Dr Shainal Nathoo and Dr Kirsty Raymond (sub-investigators), Ms Mirjana Stojkovic (study co-ordinator)

### Funding

BRC Operations Pty. Ltd. Australia

### Main objective

There are a range of medications offered to subjects with depression. One of the challenges for the clinician is to identify markers which will provide an objective way to determine the magnitude of improvement that can be expected with a particular treatment for a particular individual. Currently there are no accurate predictors of how patients will respond to antidepressant treatment. The aim of this study is to provide data which may help take the 'trial and error' out of prescribing effective antidepressant medication. Over 52 weeks, patient responses to antidepressant medication are compared to non-patient control responses using genetic, psychological and physiological measures. This is an open label, randomised trial, where patients are prescribed one of escitalopram, sertraline or venlafaxine. Study participants receive psychological and physiological testing. Their results are provided to their treating doctor. The study also aims improve future treatment of depression and increase our knowledge about the brain changes in depression.

### Main Inclusion Criteria for Patients

- Meets DSM-IV-TR criteria for a primary diagnosis of major depressive disorder (MDD)
- Currently depressed as measured by a Hamilton Rating Scale for Depression score of at least 16
- Males or females between 18 and 65 (inclusive) years of age
- Able to provide informed consent

### Main Exclusion Criteria for Patients

- Known contraindication to any of the three antidepressants used in the study (escitalopram, sertraline or venlafaxine)
- Presence of suicidal ideation and/or tendencies, bipolar disorder, psychosis or primary eating disorders
- Pregnancy and/or breastfeeding
- Serious illness including cardiovascular, hepatic, renal, respiratory, haematologic, endocrine and neurologic diseases
- Substance dependence according to Australian Bureau of Statistics criteria
- History of brain trauma

## MENTAL HEALTH SERVICE RESEARCH

### Team Coordinator:

Dr Stuart Lee

### Collaborators/Students:

Mr Shayden Bryce  
Mr Ross Anderson  
Ms Tegan Podubinski  
Ms Lynda Katona  
Dr Narelle Warren  
Dr Yitzchak Hollander  
Associate Professor Michael Daffern  
Associate Professor Simon Stafrace  
Ms Sandra Keppich-Arnold



### OVERVIEW OF TEAM'S RESEARCH AND AIMS

The Australian National Survey of Mental Health and Wellbeing has shown that in a 12 month period approximately 1 in 5 adult Australians will experience a mental illness. An array of public, private and not-for-profit services operate to offer treatment and support to people experiencing a mental illness. The way that treatment and support is offered across service settings can often vary considerably, however, influenced by such factors as effectiveness of leadership, access to resources, clinical expertise, effectiveness of staff training, partnerships with providers of complementary services, and commitment to using stakeholder feedback and evidence to inform service delivery.

The MAPrc Mental Health Service Research Stream is operated in partnership with the Alfred Health Department of Psychiatry, and has the aim of conducting research that 1) measures the effectiveness of innovative approaches to mental health care delivery, or 2) measures the mental health consequences of primary medical conditions (e.g. burns or cancer) and approaches to managing associated distress. A second aim of conducted research is to use research and evaluation to inform practice improvement or service redesign initiatives, to enhance the effectiveness, efficiency and sensitivity of provided care.

### HIGHLIGHTS

- Dr Stuart Lee (pictured above), nominated for the Monash Postgraduate Association Supervisor of the Year Award, 2014
- Filia S. Lee SJ, Sinclair K, Wheelhouse A, Wilkins S, de Castella A, Kulkarni J. Clozapine patients can successfully be transitioned into GP Shared-Care or private psychiatrist care. Oral Presentation at The Society for Mental Health Research Conference, Adelaide, 2014.

## CURRENT PROJECTS

### Problem Gambling in People Seeking Treatment for Mental Illness

#### Researchers

D Lubman, N Dowling, J Kulkarni, V Manning, S Lee, S Rodda, R Volberg, S Cosic

#### Funding

Victorian Responsible Gambling Foundation, \$399,025

#### Rationale

Problem gambling can be both a cause of and a reaction to mental illness. Currently, however, there is limited research demonstrating the prevalence and types of problem gambling in people accessing mental health services. There is also limited research demonstrating the attitude and practice of mental health clinicians in identifying and responding to problem gambling in their clients. The current project is being conducted jointly by MAPrc, Turning Point and Deakin University.

#### Aim

- 1) Examine the attitudes towards and practice of mental health clinicians from public, private and non-government mental health services in responding to problem gambling in their clients.
- 2) Measure the prevalence of problem gambling and comorbid disorders in people accessing mental health services.

#### Participant Criteria

- 1) Clinicians working in public, private and non-government mental health services.
- 2) Clients of public, private and non-government mental health services.

#### Methods

- 1) Cross-sectional clinician survey and in-depth clinician interviews.
- 2) Survey inviting clients attending during an established recruitment period, each of the services nominated as recruitment site.

Project status

Project is recruiting throughout 2014-2015.

### The impact of psychosocial factors on psychological distress, quality of life and survival of patients undergoing haematopoietic stem cell transplantation

#### Researchers

B Pillay, S Lee, L Katona, S De Bono, S Burney, S Avery.

#### Funding

School of Psychological Sciences – Monash University, \$3,500

#### Rationale

For patients with a haematological cancer, haematopoietic stem cell transplantation can offer a cure, but is a very arduous treatment to receive. Extensive research has explored the effectiveness and physical side of effects of treatment, however, less research has explored the psychological consequences of receiving this treatment or the potential impact that personality characteristics and acute psychological distress can have on treatment outcomes and survival. Two studies were conducted measuring the relationships between pre-transplant distress, quality of life, coping resources and adjustment style and either survival or quality of life and distress following transplant.

#### Participant Criteria

Patients undergoing a haematopoietic stem cell transplant as a treatment for haematological cancer.

#### Methods

- 1) Retrospective audit of clinical measures completed as part of the routine pre-transplant psychological assessment.
- 2) Prospective study measuring pre-transplant and at 2-3 weeks and 3 months post-transplant, quality of life, psychological distress, and coping resources.

#### Project status

Project was completed in 2014.

### Alfred Psychiatry Carer Participation Program Review

Researchers – S Lee, V Peterson, J Kuklych, P Lewisohn, J Burger, P McKenzie, F Whitecross, S Stafrace

Funding - Alfred Psychiatry, \$10,000

#### Rationale

Family members or friends (termed “carers”) of people experiencing a mental illness, often provide regular emotional, financial, activity of daily living or other support, which helps the person in maintaining wellness, accessing care when needed, and participating actively in the community. Alfred Psychiatry commenced in February 2014, a review of Carer Participation across the acute, community and rehabilitation programs of the adult and child and youth services. This was conducted to identify current needs of engaged carers, whether they were being met, and future priorities to strengthen carer experience and collaboration across the service.

#### Aim

1. Demonstrate what Alfred Psychiatry currently does well or not well with respect to engaging with or supporting carers.
2. Identify measures or indicators that Alfred Psychiatry could use to determine whether carers are effectively being engaged with or supported.
3. Identify principles or objectives to underpin how Alfred Psychiatry moves to strengthen its carer participation program.

#### Participant Criteria

Managers or clinical staff of Alfred Psychiatry Adult and Child and Youth Mental Health Services and carers of people accessing care from these services.

#### Methods

Individual interview and group discussions with identified stakeholders.

#### Project status

Data collection has been completed and the report is being used to inform the development of an action plan to address identified opportunities for improvement.

## Alfred Police, Ambulance and Crisis Assessment Team Early Response (Alfred PACER) Review

### Researchers

K Henderson, E Deveny, S Lee, E Evangelista, A Gallagher, J James, V Peterson, S Keppich-Arnold

### Funding

Bayside Medicare Local, \$5,000

### Rationale

Alfred PACER is a mobile unit involving a Victoria Police member and a Crisis Assessment and Treatment (CAT) team clinician from Alfred Psychiatry that jointly respond to people experiencing a mental health crisis. Alfred PACER commenced operation on 26 May 2013 (after an initial pilot operating between November 2011 and May 2012). It has the aim of improving the provision of community-based emergency responses to people experiencing a mental health crisis. Evaluation of the operation of Alfred PACER in 2013-14 was conducted in partnership with Victoria Police, Alfred Psychiatry and Bayside Medicare Local.

### Aim

- Demonstrate the utilisation, source of requests and responsiveness of the Alfred PACER;
- Characterise the consumers who are responded to by the Alfred PACER;
- Assess the frequency with which force is used with consumers responded to by Alfred PACER;
- Demonstrate what happens to consumers after being responded to by Alfred PACER; and
- Explore the consumer and carer experience of Alfred PACER as well as whether this is different from previous experiences with police and mental health services in the context of a mental health crisis.

### Participant Criteria

Clients and carers referred to Alfred PACER for a response.

### Methods

Retrospective audit of data that is routinely collected by Alfred Health and Victoria Police in relation to Alfred PACER activity and a semi-structured interview with people with a mental illness and their carers or family members who received a response from Alfred PACER.

### Project status

The audit has been completed and qualitative interviews are currently being conducted.

## Clinics

# Women's Mental Health Clinic

## WHY WOMEN'S MENTAL HEALTH?

Women's mental health is a special area of mental health requiring specifically tailored treatment for women suffering with a variety of mental illnesses. New approaches to understanding the impact of mental illnesses on women and their lives as well as new services delivered in a way that meets women's needs are urgently needed. Medicine has remained somewhat 'gender blind' to date, or has produced diagnoses and treatments based on an archetypal male patient. This often disserves women whose optimal treatment needs consideration of biological, psychological, and social factors, and of different responses to treatment.

The women's mental health clinic provides tertiary consultation in the form of second opinions by expert psychiatrists, physicians and psychologists for women with a variety of psychiatric disorders. In particular the impact of hormonal changes and other reproductive factors are carefully considered in the management of mental illnesses.

Women with disorders such as perimenopausal depression, menstrual cycle related mood disturbances, schizophrenia, bipolar affective disorder and many other illnesses are offered innovative treatments utilising hormone modulation techniques and other new approaches.

## MODE OF CONSULTATION

The main aim of the clinic is to provide an overview of the woman's current mental state and functioning, diagnosis, past treatments and offer suggestions for new or different treatments. We aim to use a biopsychosocial or holistic approach to really help the whole woman and her family. To do this, we spend at least one hour with each woman, discussing her history, her observations and views about her illness and previous treatments. We are also keen to involve family members in the consultation – but only if she wishes. A letter summarising the consultation is then sent to the referring doctor and a copy is also sent to the woman. We are also happy to send a copy of the letter to other health professionals, involved in the woman's treatment - but only with her permission.

We aim to empower the woman by listening to her - thereby validating her observations, discussing treatment options and providing educational material plus offering an opportunity to participate in research studies if she wishes.

We also aim to assist her treating team by providing a second opinion, the latest research information and new options for treatment. We do not take over the management of the woman, but hope to add to her treatment program.

## CLINIC STAFF

Professor Kulkarni  
Dr Rosie Worsley  
Psychiatry Registrar  
Medical student observer (only with patients' permission)

### Centre

Monash Alfred Psychiatry Research Centre  
Level 4  
607 St Kilda Rd  
Melbourne 3004

### Enquiries

Professor Jayashri Kulkarni  
Monash Alfred Psychiatry Research Centre, MAPrc  
Tel: 03 9076 6924  
Fax: 03 9076 8545  
Email: maprcpa@monash.edu

## REFERRAL TO THE CLINIC

Women seeking a second opinion require a referral from a general practitioner, or other medical practitioner, or from other mental health practitioners.

The women's mental health clinic runs once per week on Thursday mornings.

# The Voices Clinic

The Voices Clinic is a specialist psychological treatment and research clinic for people who hear voices or have similar experiences.

We provide:

- An initial appointment to discuss your experiences, provide advice and discuss therapy options at the clinic and elsewhere;
- Voices self-management sessions and psychological therapy are conducted at the clinic both through research trials and clinic therapists.

All therapy at the clinic is supervised by clinical psychologist Dr Neil Thomas, an expert on psychological therapy for voices.

We work closely with Voices Vic and can provide information on hearing voices support groups.

Any sessions take place alongside the person's usual treatment. We cannot provide advice on medication or crisis management.

## REFERRALS

To refer to the clinic please complete the Referral Form at <http://www.maprc.org.au/voices-clinic>. Referrals no longer require a Mental Health Care Plan and can be accepted from any health professional or community mental health worker.

## VOICES RESEARCH

As well as researching psychological therapies, the clinic also conducts research on the experience of voices, on adaptation to hearing voices and on their causes and mechanisms. We collaborate with researchers at Swinburne University, with Voices Vic (the voice hearer-led Hearing Voices Network of Victoria), and with national and international experts on hearing voices.

Research we conduct can involve a range of different methods including interviews, focus groups, questionnaires, computerised tasks and brain imaging.

### Clinic location

The Clinic operates from MAPrc:  
The Voices Clinic  
Monash Alfred Psychiatry Research Centre  
Level 4, 607 St Kilda Road  
Melbourne 3004

### Enquiries

Tel: 03 9076 6564  
E: [mail@voicesclinic.com.au](mailto:mail@voicesclinic.com.au)

## Undergraduate MBBS Medical Teaching: Monash University MBBS Year 4 Medicine of the Mind MED4091

### OUR TEAM

Psychiatry Department Head  
Prof Kulkarni

Clinical Site Co-Ordinator  
Prof Paul Fitzgerald

Assistant Clinical Site Co-Ordinator  
Dr Leo Chen

Assistant Clinical Site Co-Ordinator  
Dr Shainal Nathoo

Honorary Lecturer  
Dr Revi Nair

Clinical Site Administrator  
Ms Anne Crawford

The MAPrc Medicine of the Mind team is responsible for teaching psychiatry and psychological medicine into the Monash University MBBS course at Monash University's Central Clinical School which is located at the Alfred Hospital. Our team provides the interface between the clinical teaching of the host hospital and the university Course administration. Our mission is to deliver a seamless education in psychiatry and related disciplines to the undergraduate medical course.

We direct the MBBS Year 4 students' clinical placements at The Alfred Hospital for the Year 4 Psychological Medicine teaching program. This program is comprised of:-

- A continuous 9-week clinical placement program that emphasises clinically based learning and teaching. Students are embedded in a team and expected to play an active role. All clinical staff and students are provided with clear guidelines about the students' roles and responsibilities. Medicine of the Mind also involves psychiatry registrars in its teaching program to foster peer learning.
- A didactic teaching program which utilises the extensive knowledge and teaching expertise of senior academics within Alfred Psychiatry to conduct topic-based tutorials which familiarize students with critical concepts and disorders. Our program also includes specialist Community Health teaching sessions.

- A series of PEERLS tutorial sessions which have replaced traditional case-study-based workshops. PEERLS (Professionalism, Ethics, Evidence-base, Roles, Legal issues, Systemic issues) tutorials are patient-based and have been developed to help students integrate clinical experiences with theory. They are led by a clinician or visiting expert, rather than a generic tutor, and involve the tutor sharing his/her knowledge and experience.

The current structure of the program reflects a review and remodelling process which aims to achieve several things: to research new and vibrant models for teaching psychiatry; to encourage, recruit and reward vibrant teachers; to use staff and materials more efficiently; and to smooth the process by which students acquire the psychology and psychiatry knowledge they will need to be doctors. Medicine of the Mind continues to identify opportunities to improve students' learning experience. Student feedback and assessment indicates that these initiatives are having dramatic effects in increasing satisfaction with the course and quality of learning.

## Undergraduate MBBS Medical Teaching: Monash University MBBS Year 5 Advanced Clinical Practice 1 – Psychiatry Selective/Specialty



### OUR TEAM

Clinical Supervisor

Prof Jayashri Kulkarni

Monash University Year 5 MBBS medical students are required to complete a final year Advanced Clinical Practice 1 unit. The aim of this unit is to broaden their knowledge and skills in areas of clinical practice of their own choosing in a series of six-week clinical placements.

Students nominating to undertake a Year 5 Psychiatry Specialty or Selective at the Alfred Hospital have their time split between shadowing Professor Kulkarni at her clinical work (particularly the MAPrc Women's Mental Health Clinic), and supervision under a Consultant and a Registrar on the Alfred Hospital Psychiatry Inpatient Unit.

Under Prof. Kulkarni's supervision the students give a weekly case presentation, attend the Women's Mental Health Clinic on a weekly basis, attend case meetings, and assist the team by following up pathology test results.

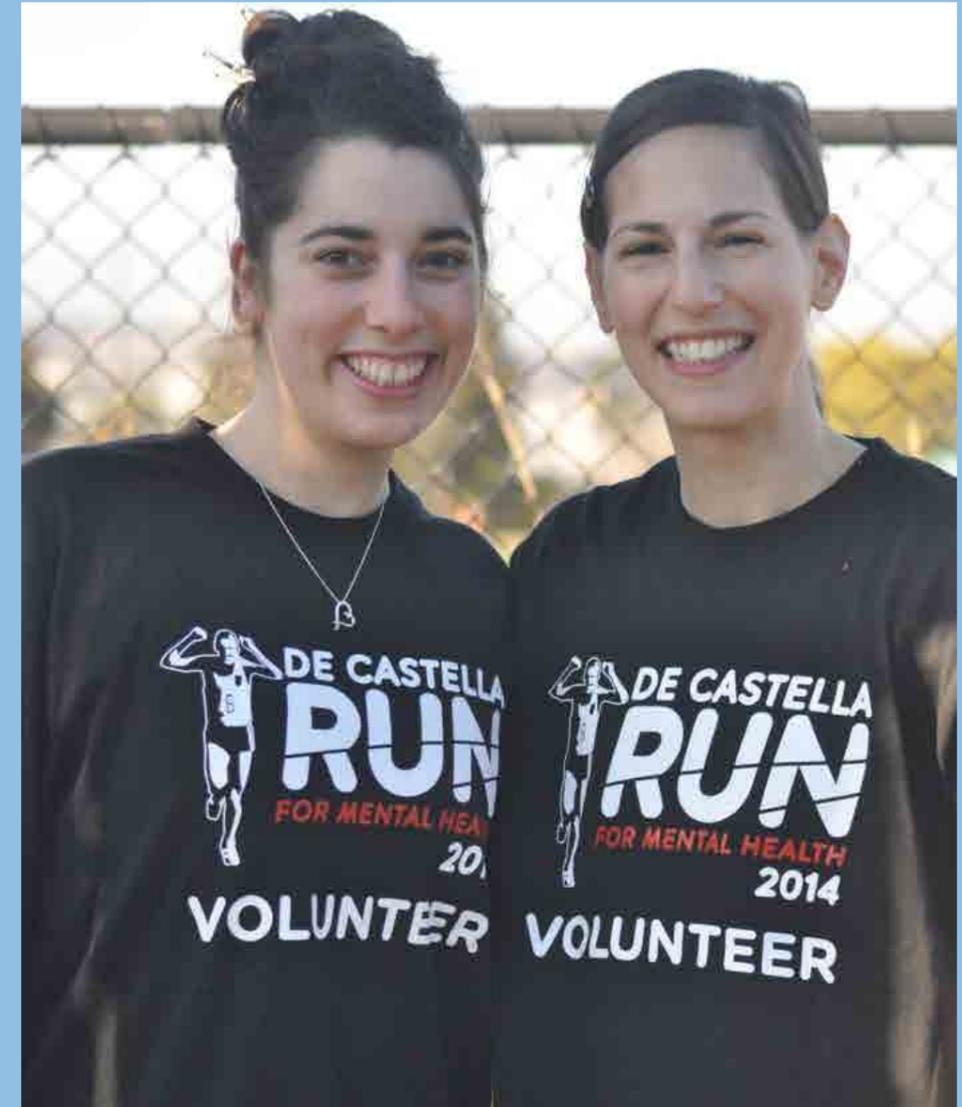
Our 2014 MBBS final year students have also published papers in peer-reviewed journals.

### BACHELOR OF MEDICAL SCIENCE (HONOURS)

The Monash University Bachelor of Medical Science (Honours) is a twelve month degree programme for MBBS students and graduates. The programme embeds students in a research setting with Australian and internationally recognised researchers.

This introduces them to the practice of clinical research. Students learn skills relating to data analysis and the communication of scientific ideas in oral presentations and a written thesis. The Bachelor of Medical Science (Honours) programme offers candidates a range of projects across an array of research streams, matching student interests to projects respectively. MAPrc offers BMedSci students a broad array of research projects to choose from. In 2014 our senior researchers supervised eleven Bachelor of Medical Science students at our centre. Please see the full list of students in the appendices.

## Community Engagement



As a not-for-profit organisation, volunteers are integral to the success of MAPrc. Without them much of the fundraising and community events that we do would not be possible. Each year, members of the community, 5th year medical students and our sponsors generously give their time, skills and energy to support our work. From the de Castella Run which has 150 volunteers, to our casual volunteers in the office – it all makes a big difference!

Thank you for helping to mend minds.

## 2014 de Castella Run for Mental Health

It was a stunning spring morning in Kew on Sunday 31st August, 2014 and we were delighted with the record number of runners and walkers in attendance. Just over 1900 people gathered to compete and enjoy the wonderful atmosphere of this special day on the fun run calendar. Our post event expo was buzzing with something for everyone; petting zoo, jumping castle, face painting, food stalls, clothing stalls, physio, osteopathy, podiatry treatments to name a few! We were overwhelmed by the positive response from local traders who were keen to get on board with this community event and support mental health in myriad ways from raising funds in store to donating prizes to our raffle, event winners, fundraising and spot prizes.

We were really pleased with the outcome of the inaugural SmartStart for kids program too, with 80 entrants and very positive feedback.

Without the wonderful support and enthusiasm from sponsors, donors and volunteers, we wouldn't be able to hold such an event. We are thrilled to announce that this year upwards of \$85,000 was raised. These funds will go directly to funding a new PhD Scholarship, allowing the important research here at MAPrc to continue.



### BPA 2014 ANNUAL SCIENTIFIC MEETING

The 4th Annual Biological Psychiatry Australia Conference was hosted by MAPrc in 2014. Held on the 13th and 14th of October 2014 at the Alfred Hospital's AMREP Centre, the conference was very well attended by Academics and researchers from all over Australia, with attendees representing all the major Australian research institutes.

Over 60 posters were accepted for presentation, and prizes awarded for the Best Clinical and Best Non-Clinical posters, along with over 30 abstracts. Highlights included the 2nd Isaac Schweitzer Lecture given by MAPrc's Professor Paul Fitzgerald, by invitation; the poster presentations; and the 5th Aubrey Lewis lecture given by Associate Professor Adam Guastella.

### MIND YOUR FAMILY CONFERENCE OCT 2014

The Monash Alfred Psychiatry research centre (MAPrc) and Greater Eastern Primary Health (GEPH) came together in October 2014 to present a special one-day conference for GPs, psychologists and mental health practitioners, dedicated to the identification, management and prevention of domestic violence.

Key speakers included Prof Jane Fisher (Public Health Expert on Violence, School of Public Health, Monash University; Director of the Jean Hailes Research Unit), Victoria Police Assistant Commissioner, Stephen Fontana, Magistrate Anne Goldbrough (Magistrates' court of Victoria), Dr Lisa Warren (Forensic Psychologist), Dr Jason Schreiber (Forensic Physician, Victorian Institute of Forensic Medicine), Dr Sally Cockburn (Melbourne GP and media commentator). The conference focus was on assessments, management strategies and other important aspects of assisting women experiencing intimate partner violence.

# Financial Report

## FINANCIAL STATEMENT

JANUARY 1ST – DECEMBER 31ST 2014

		AMT ('000)
Income	Higher Degree Supervision & Teaching	625.30
	Competitive Research Grant Funding	1,740.78
	Commercial Research Funding	597.70
	Government / Institutional Grant	1779.61
	Short Courses /Conferences	98.14
	MAPrc Clinics Revenue	71.51
	Fund Raising & Donations	101.92
	<b>Total:</b>	<b>5,014.97</b>
Expenditure	Salary related cost	2,906.92
	Infrastructure/Administration	415.72
	Direct Research Cost	590.38
	Depreciation	5.23
	Institutional Overheads and Charges	1,043.82
		<b>Total:</b>
	<b>Net Surplus/(Deficit)</b>	<b>52.90</b>

### Notes:

1. Surplus for the calendar year 2014 is carry forwarded into 2015 for ongoing projects.
2. Competitive research grant funding includes NH&MRC, ARC and other government and philanthropic grants
3. Commercial income includes industry related research grants and contracts
4. Government / Institutional grants include the Victorian Department of Health funding for academic positions at Alfred Health and other operating /infrastructure funding, and Monash University dispersed federal government funding generated on the basis of category one competitive research dollars generated by MAPrc
5. Institutional Overheads and Charges refers to Monash University central, faculty and school charges for central support and services



### Managing research funding to meet operating and strategic goals of the Centre is perpetually a challenge in the research community. MAPrc relies heavily on the our capacity to;

1. Generate and attract competitive research grants
2. Obtain competitive commercial research contracts and trials
3. Supervise quality higher degree research students and teach undergraduate students
4. Hold successful fund raising events and attract corporate, philanthropic and supporter donations

On an operating level, MAPrc must be prudent in expenditure of limited funding but also strategic in investment in activities that will maximise the potential to generate data and ideas which will seed future funding opportunities. Researchers must balance the competing needs of financial management of often insufficient project based funding with the required research activities to fulfil the Centre's mission and deliver new and innovative treatments for people in our community with serious mental illness. The main financial goals for MAPrc remain;

1. Managing received project grant funding to allow completion of funded projects within budget
2. Supporting higher degree research student projects which usually have no dedicated funding source
3. Meeting administration and infrastructure operating liabilities
4. Generating discretionary funding to allow strategic research investment in pilot projects and recruitment of senior research personnel who will contribute to the MAPrc' strategic direction
5. Enhancing the profile of the centre to the wider community and our key stakeholders to promote mental health awareness and build fund raising opportunities.

NHMRC GRANTS	PROJECT RESEARCHERS
Accelerated repetitive transcranial magnetic stimulation in the treatment of depression (Project Grant), 2013-2015 - \$471,252	Fitzgerald, Paul B; Hoy, Kate E
Adjunctive Hormone Therapy for Treatment Resistant Depression in Perimenopausal Women (Project Grant), 2013-2015 - \$599,514	Kulkarni, J
Advancing Brain Stimulation Treatments for Depression (Practitioner Fellowship), 2015-2019 - \$551,436	P Fitzgerald
Brain Stimulation Equipment Suite (Equipment Grant), 2014 - \$95,000	Hoy, Kate E; Fitzgerald, Paul B; Fitzgibbon, Bernadette; Fornito, Alexander; Maller, Jerome J; Rogasch, Nigel C; Segrave, Rebecca A; Yucel, Murat
Characterising and modulating corticostriatal connectivity in schizophrenia. (Peter Doherty Biomedical Fellowship (Australia) - Early Career Fellowship), 2014-2017 - \$304,596	Rogasch, Nigel C
Deep brain stimulation for treatment resistant major depression: Neural correlates and neuropsychological outcomes (Health Professional Research Fellowship - Early Career Fellowship), 2012-2017 - \$248,424	Segrave, Rebecca A, Fitzgerald P
Fibromyalgia: Investigating the prefrontal cortex and its role in novel treatment approaches (Peter Doherty Biomedical Fellowship - Early Career Fellowship), 2014-2018 - \$327,523	Fitzgibbon, B
Genetic variations and dopaminergic contributions to prefrontal cognitive systems in schizophrenia (Clinical Fellowship - Training (Postdoctoral) Fellowship), 2009-2015 - \$178,125	Gurvich, C
Neuroimaging after traumatic brain injury: What best relates to outcome? (Industry - Career Development Award Level 1 - fellowship), 2011-2015 - \$384,160	Maller, J J
Peter Doherty Early Career Researcher Fellowship, - \$309,436	T Van Rheenen

## NHMRC GRANTS

## PROJECT RESEARCHERS

Practitioner Fellowship, 2010-2019 - \$1,056,310	Fitzgerald, Paul B
Restoring cognitive function using brain stimulation (RD Wright Biomedical Career Development Fellowship), over 4 years - \$411,418	K Hoy
Selective Estrogen Receptor Modulators - A New Adjunctive Treatment for Men with Schizophrenia? (Project Grant), 2013-2015 - \$788,419	Kulkarni, J; Barton, D A; Gurvich, C
Using the latest neuroimaging and genetic advances to improve our understanding of auditory verbal hallucinations, - \$466,093	Susan Rossell, Matthew Hughes, Will Woods, Patricia Michie and Neil Thomas
AUSTRALIAN RESEARCH COUNCIL (ARC)	PROJECT RESEARCHERS
The development and testing of a device to enhance the application of repetitive transcranial magnetic stimulation (ARC Linkage Projects 2013), 2013-2016 - \$771,643	Fitzgerald, Paul B; Fifield, Warwick
When should we stop trusting the senses? Perceptual decision making under ambiguity (ARC Discovery Projects 2013), 2013-2014 - \$111,169	Hohwy, J; Enticott, P G; Frith, U
MONASH UNIVERSITY GRANTS	PROJECT RESEARCHERS
A Targeted Treatment for Cognitive Impairment Following Traumatic Brain Injury: Combining Transcranial Magnetic Stimulation with Cognitive Training 2014 - \$100,000	K Hoy
Development of a novel implantable form of brain stimulation (Faculty of Medicine Strategic Grant Scheme- Engineering Award), 2014 - \$50,000	P Fitzgerald
To investigate blood brain barrier permeability after traumatic brain injury. (Centre for Excellence in Traumatic Brain Injury Research Acute Care Fellowship). 2014 - \$100,000	J Maller

MONASH UNIVERSITY GRANTS	PROJECT RESEARCHERS
Understanding individual differences in response to non-invasive brain stimulation: The influence of gender and sex hormones. (Faculty of Medicine Strategic Grant Scheme ECR Award ), 2014 - \$50,000	B Pillay, S Lee, L Katona, S De Bono, S Burney, S Avery
The impact of psychosocial factors on psychological distress, quality of life and survival of patients undergoing haematopoietic stem cell transplantation (School of Psychological Sciences), \$3,500	B Pillay, S Lee, L Katona, S De Bono, S Burney, S Avery
GOVERNMENT FUNDING - HEALTH	PROJECT RESEARCHERS
A randomised controlled trial of magnetic seizure therapy in major depressive disorder (Beyondblue Victorian Centre of Excellence Research Grant), 2012-2014 - \$121,890	Fitzgerald, Paul B; Hoy, Kate E
Cognitive control training for treatment resistant depression: application, evaluation and augmentation (Beyondblue Victorian Centre of Excellence in Depression and Anxiety - Early Career Researcher Grant), 2013-2015 - \$97,598	Segrave, R A
The F.A.D. Study: Facebook use in affective disorders (Beyondblue Research Grant), 2013-2014 - \$77,100	Fitzgerald, Paul B; Miller, Rowan JS; Riley, Jeff
Problem Gambling in People Seeking Treatment for Mental Illness (Victorian Responsible Gambling Foundation), \$399,025	D Lubman, N Dowling, J Kulkarni, V Manning, S Lee, S Rodda, R Volberg, S Cosic
Alfred Psychiatry Carer Participation Program Review (Alfred Psychiatry, Alfred Hospital), \$10,000	S Lee, V Peterson, J Kuklych, P Lewisohn, J Burger, P McKenzie, F Whitecross, S Stafrace
Does visual training enhance standard cognitive remediation therapy outcomes in people with chronic schizophrenia? (St Vincent's Hospital Research Endowment Fund ), \$19,872	Rossell, S; Conreras, N; March, E; Castle, D J
Alfred Police, Ambulance and Crisis Assessment Team Early Response (Alfred PACER) Review, (Bay-side Medicare Local), \$5,000	K Henderson, E Deveny, S Lee, E Evangelista, A Gallagher, J James, V Peterson, S Keppich-Arnold

COMMERCIAL FUNDING PHARMACEUTICAL COMPANIES	PROJECT RESEARCHERS
329-10 Phase III, multi-center, randomized, 24 week, double-blind, parallel-group, placebo-controlled study to evaluate efficacy and safety of RO4917838 in stable patients with persistent, predominant negative symptoms of schizophrenia treated with antipsychotics followed by a 28 week, double-blind treatment period (Roche Pharmaceuticals Pty Ltd), \$95,264	Kulkarni, J
A Phase 2, Multicenter, Double-blind, Parallel-group, Randomized, Placebo-controlled, Forced-dose Titration, Dose-ranging Efficacy and Safety Study of SPD489 in Combination with an Antidepressant in the Treatment of Adults with Major Depressive Disorder with Inadequate Response to Prospective Treatment with an Antidepressant. (Shire Pharmaceuticals Pty Ltd), \$43,158	Kulkarni, J
"A phase 4, randomized, double-blind, active and placebo-controlled, multicenter study evaluating the	
Neuropsychiatric safety and efficacy of 12 weeks varenicline Tartrate 1mg bid and bupropion hydrochloride 150mg bid for Smoking cessation in subjects with and without a history of Psychiatric disorders (Pfizer Pharmaceuticals Pty Ltd), \$397,689"	Kulkarni, J; Nathoo, S; Raymond, K; Granifo, N; Hook, B.
International Study to Predict Optimised Treatment - in Depression (iSPOT-D), Brain Resource Centre, \$29,218	Professor Kulkarni (Principal investigator) , Dr Shainal Nathoo and Dr Kirsty Raymond (sub-investigators), Ms Mirjana Stojkovic (Study Co-ordinator)
The National Register of Antipsychotic Medication in Pregnancy (NRAMP) AstraZeneca (\$270,000) Janssen-Cilag (\$450,000) Hospira (\$30,500) , Eli Lilly (\$10,000), 2006-2014 - \$793,500	Kulkarni, J
Psychotropics in Pregnancy - (PIPs), Australian Rotary Health Research Fund \$33,000	Kulkarni, J; De Castella, R A; Elsom, S J; Fitzgerald, Paul B
A Phase 3 Efficacy and Safety Study of ALKS 5461 for the Adjunctive Treatment of Major Depressive Disorder (the FORWARD-4 Study), Alkermes Inc, - \$6,500	Kulkarni, J; Nathoo, S; Granifo, N; Hook, B.

## COMMERCIAL FUNDING PHARMACEUTICAL COMPANIES

## PROJECT RESEARCHERS

HREC/12/Alfred/11 (Local Reference: Project No 2/12) A Phase 2 Randomized, Double Blind , Placebo-controlled Study to evaluate the effect of Add-on-AMG747 on Schizophrenia Negative Symptoms (Amgen Pharmaceuticals), - \$8,152

Kulkarni, J

## COMMERCIAL FUNDING OTHER

## PROJECT RESEARCHERS

An Open label trial of Accelerated Multi-Coil rTMS for Treatment-Resistant Depression (CERVEL), \$35,000

Kulkarni, J

The diagnosis, biomarker identification and measurement of drug efficacy for neurological and mental disorders (Neural Diagnostics), \$68,000

Kulkarni, J

## PRIVATE PHILANTHROPIC

## PROJECT RESEARCHERS

An examination of the characteristics (phenomenology) of auditory verbal hallucinations (AVHs) in relation to mood in bipolar disorder (BD) and major depressive disorder (MDD). (Barbara Dicker Foundation ), \$19,993

S Rossell

The role of the BDNF gene in cognitive ageing and depression in healthy adults (Barbara Dicker Foundation ), \$19,942

E Neill, E; Rossell, S; Sumner, P; Carruthers, S; Gurvich, C

The use of modulated sound in the treatment of chronic tinnitus (Tinaway), \$3,200

Kulkarni, J

Investigating a visual test for bipolar disorder (NARSAD - Brain & Behaviour Research Foundation - Young Investigator Award 2012 - Grant ), 2013-2014 - \$57,158

Miller, S M

The Use of Non-Invasive Brain Stimulation to Improve Social Relating in Autism Spectrum Disorders (NARSAD - Brain & Behaviour Research Foundation - Young Investigator Award 2012 - Grant), 2013-2014 - \$54,180

Enticott, Peter G

## NOT FOR PROFIT ORGANISATIONS

## PROJECT RESEARCHERS

Interventional repetitive transcranial magnetic stimulation treatment for fibromyalgia (Arthritis Australia - ARA Project Grant), \$10,000

B Fitzgibbon

Double-blind, placebo-controlled, randomized investigation of Ondansetron in chronic residual schizophrenia (Stanley Medical Research Institute (US) - Research Grants ), 2010-2012 - \$998,405

Kulkarni, J; Fitzgerald, Paul B; Rossell, S L

Student	Project Title	Supervisor(s)
<b>Phd</b>		
Ross Anderson	Psychological wellbeing from the perspective of adolescents with vision impairment	Dr Stuart Lee
Rodney Anderson	Repetitive transcranial magnetic stimulation for treatment-resistant depression: Modulating dysfunctional connectivity.	"Prof Paul Fitzgerald Dr Kate Hoy
TingTing Cao Cao	Optimizing non-invasive brain stimulation protocols for major depressive disorder: A focus on information processing bias	Prof Paul Fitzgerald
Sean Carruthers	The Muscarinic cholinergic system and cognition in schizophrenia	"Prof Susan Rossell Dr Caroline Gurvich
Sung Wook Chung	Optimization of theta burst stimulation on depression	"Prof Paul Fitzgerald Dr Kate Hoy
Amity Green	A clinical and neurobiological exploration of memory and encoding impairment in schizophrenia	"Prof Paul Fitzgerald Rodney Croft
Phillip Hall	A Neuroeconomic investigation into Anhedonia and Major Depression	Prof Paul Fitzgerald Dr Luke Smillie Dr Rebecca Segrave
Aron Hill	Enhancing cognitive function/ neuroplasticity using non-invasive brain stimulation	Dr Kate Hoy Prof Paul Fitzgerald"
Melissa Krikovski	The Influence of Biological Sex on Neurobiological Mechanisms Underlying Autism Spectrum Disorder: An Investigation of Neural Activity and Connectivity	"Prof Paul Fitzgerald A/Prof Peter Enticott
Sarah Lancaster	A MEG of Auditory hallucinations in patients with schizophrenia	Prof Susan Rossell Matt Hughes Will Woods

Student	Project Title	Supervisor(s)
Kim Meates	Bridging the gap between sensory and social impairments in Autism	Dr Bernadette Fitzgibbon Dr Rebecca Segrave Prof Paul Fitzgerald
Phillip Sumner	The relationship between genres and FMRI in schizophrenia	Prof Susan Rossell Matt Hughes
<b>DPsych</b>		
Melanie Emonson	Brain Stimulation, Aging and Cognition	Dr Kate Hoy Prof Paul Fitzgerald Dr Nigel Rogasch
Nicci Grace	Hands in motion: Understanding movement and handwriting in children with autism spectrum disorder	A/Prof Peter Enticott Prof Nicole Rinehart Dr Beth Johnson
Oscar Murphy	Cognitive enhancement: an investigation of non-invasive electrical brain stimulation methods.	Dr Rebecca Segrave Dr Kate Hoy Dana Wong
Lisa Olive	Clinical placement (Psychology)	Dr Marlies Alverenga Prof Jayashri Kulkarni
Karyn Richardson	Developing Prefrontal Assessment of Cortical Inhibition as a Novel Endophenotype for Schizophrenia	Prof Paul Fitzgerald Dr Kate Hoy
Kirstyn Windsor	Using transcranial alternating current to enhance social cognition in schizophrenia	A/Prof Peter Enticott Dr Kate Hoy
Shayden Bryce	Comparing the effects of two cognitive remediation programs on neurocognitive and functional outcome in schizophrenia	Dr Stuart Lee
Brindha Pillay	The impact of psychosocial factors on psychological distress, quality of life and survival of patients undergoing haematopoietic stem cell transplantation	Dr Sue Burney Dr Stuart Lee Dr Lynda Katona

Student	Project Title	Supervisor(s)
Tegan Podubinski	The Psychological characteristics of hospitalised inpatients with problematic interpersonal styles	Dr Stuart Lee
<b>MPsych</b>		
Julia Nigro	B1 Placement - at Voices clinic	Dr Neil Thomas
Robyn Gill	A Longitudinal Study Measuring the Outcomes of a Multidisciplinary Chronic Fatigue Syndrome Rehabilitation Program	Dr Stuart Lee Helen Edwards
<b>BPsych (Hons)</b>		
Jess Myles	Saccadic eye movements across the schizophrenia spectrum	Dr Caroline Gurvich Prof Susan Rossell
Daniel Valladares	Source memory in a high Schizotypy sample	Prof Susan Rossell Dr Erica Neill
<b>BMedSc (Hons)</b>		
Treasa Gray	The effect of netformin min 1700mg/day on mood and cognition in adults with treatment resistant depression and abdominal obesity	Prof Jayashri Kulkarni Dr Rosie Worsley
Elizabeth Lim	The role of neuregulin and cognition in schizotypy	Dr Caroline Gurvich Dr Erica Neill
Anisa Ramadhianti	The interrelationship of psychosis, raloxifene and menstrual cycle	Prof Jayashri Kulkarni Dr Jasmin Grigg
Amita Roy	NRAMP - Follow up of children 1-5 years, developmental evaluations	Prof Jayashri Kulkarni Ms Heather Gilbert
Georgia Walter	Contraceptive use of women with severe mental illness	Prof Jayashri Kulkarni Ms Emmy Gavrilidis
Cindy Zahran	Characteristics of perimenopausal depression	Prof Jayashri Kulkarni Ms Emmy Gavrilidis

Student	Project Title	Supervisor(s)
<b>BMedSc</b>		
Laura Blair-West	Cognitive empathy following tACS stimulation of the TPJ: role of psychopathic traits	Dr Bernadette Fitzgibbon Dr Kate Hoy
Ruth McLeod	Facebook and affective disorders	Prof Paul Fitzgerald Dr Rowan Miller
Marco Micahel	Theta Burst stimulation for the enhancement of working memory in healthy controls	Dr Kate Hoy Dr Neil Bailey
Dean Whitty	A neuroscience approach to enhancing cognitive function: using TACS to enhance the effects of cognitive training	Kate Hoy Dr Neil Bailey
<b>MBBS</b>		
Elizabeth Ng	SERM Study - Research Experience	Prof Jayashri Kulkarni

## Books and Book Chapters

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Published by Springer; Volume II: .

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McCarthy-Jones, S., Thomas, N., Dodgson, G., Fernyhough, C., Brotherhood., E., Wilson, G & Dudley R., What have we learnt about the ability of cognitive behavioural therapy to help with voice hearing? Book Title: Psychological approaches to understanding and treating auditory hallucinations: From theory to therapy 2014; Chapter: 5; pp.78-99. Psychological approaches to understanding and treating auditory hallucinations: From theory to therapy. Publisher: Routledge, Editors: Mark Hayward, Clara Strauss, Simon McCarthy-Jones. (In Press)

Thomas, N., A model for the development of acceptance and mindfulness based therapies: Preoccupation with psychotic experiences as a treatment target. Book Title: Incorporating acceptance and mindfulness into the treatment of psychosis: current trends and future directions 2014; Chapter: 9, Incorporating Acceptance and Mindfulness into the Treatment of Psychosis: Current Trends and Future Directions. Publisher: Oxford University Press, Editors: Brandon Gaudio. Google eBook

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## Letters to the Editor

Yeong C, Gilbert H, Kulkarni J., Special issues for women with mental issues during pregnancy and beyond. Letter to editor. *Australian and New Zealand Journal of Psychiatry* 2014; 48 (10): 958

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## Current Research Projects

A 24-month, Multicenter, Randomized, Double-blind, Placebo-controlled, Parallel-group, Efficacy, Safety, Tolerability, Biomarker, and Pharmacokinetic Study of AZD3293 in Early Alzheimer's Disease (The AMARANTH Study).

A brain imaging study of auditory verbal hallucinations and inhibition in patients with schizophrenia.

A brain imaging study of social and emotional processing in bipolar disorder.

A clinical trial of transcranial direct current stimulation and cognitive training in TBI.

A double – blind sham controlled trial of rTMS in the treatment of bipolar depression.

A Multicenter 26-Week Extension Study to Evaluate the Safety and Clinical Effects of Prolonged Exposure to 1 and 2 mg Doses of EVP-6124, an Alpha-7 Nicotinic Acetylcholine Receptor Agonist, as an Adjunctive Pro-cognitive Treatment in Subjects with Schizophrenia on Chronic Stable Atypical Antipsychotic Therapy.

A Multicenter, Randomized, Double-blind Trial to Assess the Efficacy and Safety of ASC-01 in Patients with Major Depressive Disorder (MAPrc).

A Phase 3 Efficacy and Safety Study of ALKS 5461 for the adjunctive treatment of Major Depressive Disorder (the FORWARD-4 study).

A Phase 3 Multicenter Study of the Longterm Safety and Tolerability of ALKS 5461 for the Adjunctive Treatment of Major Depressive Disorder in Adults who Have an Inadequate Response to Antidepressant Therapy (the FORWARD2 Study).

A Phase 4, Non-Treatment Follow-up for Cardiac Assessments Following use of Smoking Cessation Treatments in Subjects With and Without a History of Psychiatric Disorders.

A phase 4, randomized, double-blind, active and placebo -controlled, multicenter study evaluating the neuropsychiatric safety and efficacy of 12 weeks varenicline tartrate 1 mg bid and bupropion hydrochloride 150 mg bid for smoking cessation in subjects with and without a history of psychiatric disorders.

A Pilot Study of Deep Brain Stimulation for Treatment Resistant Major Depression.

A Randomised Controlled Trial of Magnetic Seizure Therapy in Major Depressive Disorder.

A randomised double-blind placebo controlled investigation of the efficacy of memantine as an adjunct to quetiapine in patients with borderline personality disorder

A Randomized, Double-blind, Placebo-controlled, Parallel, 26-Week, Phase 3 Study of 2 Doses of an Alpha-7 Nicotinic Acetylcholine Receptor Agonist (EVP-6124) or Placebo as an Adjunctive Pro-cognitive Treatment in Schizophrenia Subjects on Chronic Stable Atypical Antipsychotic Therapy

A rationale supporting the placement of a graduate occupational therapist in the Alfred Psychiatry Mobile Support and Treatment Service

A2: Accelerated rTMS in the treatment of depression

Accelerated Repetitive Transcranial Magnetic Stimulation in the Treatment Of Depression

Alfred Police, Ambulance and Crisis Assessment Team Early Response (Alfred PACER) Review

Alfred Psychiatry Carer Participation Program Review

An Examination into the Brain Basis of Chronic Pain and Co-Morbid Mental Illness

An Innovative Adjunctive Hormone Treatment for Men and Women with Schizophrenia

## Current Research Projects

An investigation of non-invasive electrical brain stimulation methods to enhance cognitive processing in depression.

Auditory verbal hallucinations (AVH) in relation to mood in bipolar disorder (BD) and major depressive disorder (MDD)

BI-POLAR: A double-blind sham controlled trial of rTMS in bipolar depression

Brain stimulation, aging and cognition

Bridging the gap between sensory and social impairments in autism

Bridging the Gap Between Sensory and Social Processing Impairment in Autism Spectrum Disorders: An Investigation into Multimodal Pain Processing

Can transcranial Direct Current Stimulation enhance positive emotional processing bias?

Can transcranial Direct Current Stimulation enhance second language learning?

CCT: Cognitive control training for depression: application, evaluation and augmentation.

Characterising language and communication symptoms in schizophrenia using clinical, cognitive, neuroimaging and genetic evidence

Characterising perceptual rivalry in psychiatric disorders

Cognitive and genetic explanations of mental illnesses (CAGEMIS) bio-databank

Cognitive enhancement: an investigation of non-invasive electrical brain stimulation methods.

Comparison of the neurocognitive profiles in schizophrenia, bipolar disorder and depression through the use of the MATRICS consensus cognitive battery

Contraception use, attitude and experiences of women with psychosis

Cortical Inhibition, Plasticity and Working Memory in Schizophrenia

Decision making following transcranial direct current stimulation of the Temporal Parietal Junction: the role of personality

Deep Brain Stimulation for treatment refractory major depression.

Deep repetitive transcranial magnetic stimulation (rTMS) for autism spectrum disorder

Depression Treatment Preferences Survey

Developing Prefrontal Assessment of Cortical Inhibition as a Novel Endophenotype for Schizophrenia

Does concurrent transcranial direct current stimulation augment the antidepressant efficacy of cognitive control training for major depression?

Does visual processing training enhance standard CRT outcomes in people with schizophrenia?

Double blind, placebo-controlled, randomised investigation of Ondansetron in chronic residual schizophrenia

## Current Research Projects

Double-Blind Randomised Investigation of Tibolone Alone or in Adjunct to Standard Antidepressant Treatment for Depression in Menopausal Women

Double-Blind Randomised Investigation of Tibolone and Placebo in Adjunct to SSRI for Perimenopausal Depression

Early life trauma and hippocampus volume in depression

Effect of mindfulness meditation on working memory related alpha activity and cognitive inhibition

Effects of peer-support groups for voice hearers on distress, disability and recovery from psychosis

Effects of varying intertrain interval

Enhancing social cognition in SCZ

Enhancing Neuroplasticity in the Dorsolateral Prefrontal Cortex using Non-Invasive Brain Stimulation

Evaluation of the Victorian Statewide Problem Gambling and Mental Health Partnership

Examining the benefits of cognitive remediation on neurocognitive and functional outcomes in schizophrenia relative to an active control

Examining the effects of Nicotine on Working memory and Eye movements in Schizophrenia

Examining the neurobiological underpinnings of semantic memory deficits associated with thought disorder in schizophrenia

Exploring the Behavioural and Neurobiological Effects of 'High-Definition' tDCS

Exploring the links between the muscarinic system and cognitive symptoms in schizophrenia

FIBROMYALGIA: rTMS for fibromyalgia

Genetic variations and dopaminergic contributions to prefrontal cognitive systems in schizophrenia

Healthy Lifestyle intervention for cardiovascular disease risk reduction among people with psychotic disorders

Hearing voices: what does getting better mean?

HOPE+CRT: How effective is Cognitive Remediation in enhancing cognitive, social and vocational outcomes for job seekers with mental illness?

Immune response in Major Depressive Disorder and Psychophysiological Correlates

Influence of Gender on TMS and tDCS

International Study to Predict Optimised Treatment – in Depression

Internet Use and Access of People with Serious Mental Illness

Investigating brain mechanisms associated with autonomic responses in schizophrenia

Investigating factors that influence the efficacy of cognitive remediation therapy in people with schizophrenia.

## Current Research Projects

Investigating neural plasticity and cognitive enhancement following brain stimulation in mild cognitive impairment.

Investigating predictors of antidepressant response to Transcranial Magnetic Stimulation

Investigating the neurobiological and neurocognitive effects of repeated sessions of tDCS and itDCS in schizophrenia.

Investigating the use of direct current stimulation for the enhancement of cognition in Schizophrenia

Investigating thermal stimulation techniques as a therapeutic intervention for persistent pain conditions

Investigation of the extent clinicians elicit a history of previous trauma in female psychiatric inpatients

Investigations into a novel biomarker of chronic tinnitus

iSPOT-D Study - International Study to Predict Optimised Treatment – in Depression

MAPrc Potential Participant Database

Metformin for Mind and Metabolism: The effect of metformin 1700mg/day on mood and cognition in women with treatment resistant depression and abdominal obesity: a randomized placebo controlled trial over 12 weeks.

Mood and contraceptives - is there a relationship?

MST/ECT: A randomised controlled trial of Magnetic Seizure Therapy in Major Depressive disorder

Neural Changes Related to Depression and Traumatic Brain Injury

Neural Connectivity in Autism Spectrum Disorders

Neurobiological and cognitive effects of TMS

Neurobiological and Cognitive effects of tDCS

Neurobiology of cognitive symptoms in Schizophrenia: a TMS-EEG study

Neurobiology of Mindfulness

Neuroplasticity and MCI

Non-invasive brain stimulation and cognitive enhancement in healthy volunteers: investigating the effects of theta burst stimulation (TBS) on learning and memory.

Non-invasive brain stimulation and working memory enhancement in schizophrenia and healthy controls: investigating transcranial Direct Current Stimulation (tDCS) and transcranial Alternating Current Stimulation (tACS)

Non-Invasive Brain Stimulation: the Influence of Gender and Menstrual Phase

Non-Invasive Brain Stimulation: the Influence of Gender and Menstrual Phase

OCD: Neuronavigationally targeted TMS in treatment resistant obsessive compulsive disorder

## Current Research Projects

Optimisation of DLPFC Theta Burst Stimulation

Optimising the use of Theta Burst TMS in Modifying Brain Activity.

Optimizing non-invasive brain stimulation protocols for major depressive disorder: A focus on information processing bias

Optimizing TBS protocols for major depressive disorder: A focus on affective processing bias

Peer support groups for voice hearers: qualitative study of consumer views

Peer-delivered support intervention for people who hear voices: A pilot randomised controlled trial

Phase 3 -A Randomized, Multicenter, Double-Blind, Non-inferiority Study of Paliperidone Palmitate 3 Month and 1 Month Formulations for the Treatment of Subjects with Schizophrenia

Piloting the effectiveness of physical health nurses in community based mental health services

PREDICT: Investigating predictors of response to TMS

Problem Gambling in People Seeking Treatment for Mental Illness

Psychiatric Disorder Biobank (formerly Establishment of a Psychiatric Disorder Gene Bank at the Alfred and Baker Institute)

Psychosocial intervention using online resources to promote personal recovery in users of specialist mental health services

Repetitive transcranial magnetic stimulation in the treatment of fibromyalgia

Safety for Women in Acute Psychiatry Wards: Evaluating the impact of environmental, education and policy change

Selective Estrogen Receptor Modulators (SERMs) – A Potential Treatment for Psychotic Symptoms of Schizophrenia in Men?

Selective Estrogen Receptor Modulators (SERMs) – A Potential Treatment for Psychotic Symptoms of Schizophrenia?

Social and Economic Decision-making in Depression

Study Evaluating the Neuropsychiatric Safety and Efficacy of 12 Weeks Varenicline Tartrate 1mg BID and Bupropion Hydrochloride 150mg BID for Smoking Cessation in Subjects With and Without a History of Psychiatric Disorders

Studying the cortical effects of transcranial magnetic stimulation (TMS)

tACS, SCZ and cognition

TBI: The use of TMS in the treatment of the sequelae of closed head injury

TBS and working memory

The diagnosis, biomarker identification and measurement of drug efficacy for neurological and mental disorders

The effect of meditation on neural markers of inhibitory processes in cognition

The effect of TDCS to the TPJ on decision making and the role of psychopathic traits.

## Current Research Projects

The FAD study: Facebook use in Affective Disorders

The Impact of a Mindfulness-Based Intervention for Auditory Hallucinations on Localised Brain Activity, Attention and Subjective Experience

The impact of psychosocial factors on psychological distress, quality of life and survival of patients undergoing haematopoietic stem cell transplantation

The National Register of Antipsychotic Medication in Pregnancy (NRAMP)

The relationship between COMT val158met-polymorphism (rs4680) and schizotypy

The use of modulated sound in the treatment of chronic tinnitus

The use of non invasive brain stimulation in the treatment of the sequelae of closed brain injury

TMS for the treatment of Auditory Hallucinations in Schizophrenia

Understanding Emotion Abnormalities in Bipolar Disorder

Understanding factors that increase the risk of anxiety in perimenopausal women

Use of online technology to promote self-management and recovery in people with psychosis – mental health worker consultation

Using tDCS to improve working memory in schizophrenia and healthy controls: investigating the role of current strength

Using thermographic cameras to investigate eye temperature and its relationship to behaviour in depression and healthy controls

Visual processing correlates of abnormal mirror neuron system functioning in autism spectrum disorder.

Voices Research Participant Registry

## Conference Presentations

Prof. Jayashri Kulkarni  
Invited Delegate – Neurosciences Victoria – Bangalore, India – 10th – 15th February

Prof. Jayashri Kulkarni  
Invited speaker – Lundbeck – “Difficult to treat patients: A Clinician’s perspective & Round Table Discussion” – Launceston, Tasmania 19 March 2014

Prof. Jayashri Kulkarni  
Invited speaker - Lundbeck – “Treatment Resistant Schizophrenia: A Clinician’s perspective & Round Table Discussion” – Royal Hobart Hospital, Tasmania 19th March 2014

Prof. Jayashri Kulkarni  
Invited speaker – Torque – Monash Medical Students Association – 25th March 2014

Prof. Jayashri Kulkarni  
Invited Chairperson – International Menopause Society Conference, Cancun, Mexico 1-4 May 2014

Prof. Jayashri Kulkarni  
Invited guest speaker – student awards, Monash University, Melbourne – 8th April 2014

Prof. Jayashri Kulkarni  
Invited speaker – Alfred Hospital Grand Round – “Women’s Mental Health – It is Getting Tougher” – 10th April 2014

Prof. Jayashri Kulkarni  
Invited Speaker – Women in Medicine event, , AMA Victoria, Melbourne – 23rd June 2014

Prof. Jayashri Kulkarni  
Invited Speaker - Inner South Family and Friends AGM , Melbourne 12th August 2014

Prof. Jayashri Kulkarni  
Invited ambassador presentation – Club Melbourne Annual Gala Dinner – 18th August 2014

Prof. Jayashri Kulkarni  
Invited Speaker – Mental Health Foundation of Australia (VIC) Community Education Seminar, Melbourne 2nd September 2014

Prof. Jayashri Kulkarni  
Invited Speaker – Northern Hospital Psychiatry department, Psychopharmacology – Janssens 29th September 2014

Prof. Jayashri Kulkarni  
Invited speaker – RANZCP Victorian Branch Conference, Melbourne “Women’s Mental Health - Not a Priority, Not good Enough” – 4th October 2014

Prof. Jayashri Kulkarni  
Invited Speaker – Mental Health Symposium, The Victims Support Agency, Melbourne 8th October 2014

Prof. Jayashri Kulkarni  
Convenor presentation – Mind Your Family Conference – “Complex Trauma Disorder: We must do better”, Melbourne, 11th October 2014

Prof. Jayashri Kulkarni  
Invited Speaker – “Psychopharmacology Challenges in Schizophrenia” Dinner, South Yarra – Janssens - 29th September 2014

Prof. Jayashri Kulkarni  
Invited Speaker – Monash Physiology retreat, AHSC presentation, Melbourne 9th December 2014

Prof. Jayashri Kulkarni  
Invited Keynote speaker – ACEM annual meeting, “Advances in psychiatry though neurosciences”, Melbourne - 8th December 2014

Prof. Paul Fitzgerald  
Invited speaker - “Enhanced targeting to improve response to rTMS treatment in depression response”. 11th World Congress of the Society for Brain Mapping and Therapeutics (SBMT), Sydney February 2014

Prof. Paul Fitzgerald  
Invited speaker - “The Emerging Use of Brain Stimulation Treatments for Mental Health Disorders”. Biological Psychiatry Australia. Isaac Schweitzer Lecture, Melbourne October 2014

Prof. Paul Fitzgerald  
Invited Keynote - “Transcranial magnetic stimulation and Depression: from research to clinical practice”. RANZCP ENSIG meeting Barossa Valley August 2014

Prof. Paul Fitzgerald  
Invited Keynote - “Novel Application of Brain Stimulation in Psychiatry”, RANZCP ENSIG meeting Barossa Valley August 2014

## Conference Presentations

Prof. Paul Fitzgerald  
Invited talk - “The clinical and ethical impact of the expanding use of non-invasive brain stimulation (NIBS)”. NEUROETHICS DOWN-UNDER 2014, Neuroscience and Society in the 21st Century. Melbourne 2014

Prof. Paul Fitzgerald  
“The Emerging Use of Brain Stimulation Treatments for Mental Health Disorders”. Invited Keynote Address. The 2014 School Counsellors & Psychologists Conference, Melbourne November 2014

Prof. Susan Rossell, Hughes, M.E., Woods, W., Thomas, N., Michie, P.T.  
“Using magnetoencephalography (MEG) to evaluate neurocognitive models of auditory verbal hallucinations”. Society for Mental Health Research, Adelaide, Australia, oral presentation.

Prof. Susan Rossell & Hughes, M.E.  
“Behavioural and fMRI evidence of semantic categorisation deficits in schizophrenia” Society for Mental Health Research, Adelaide, Australia, oral presentation.

Prof. Susan Rossell  
“BDD: improved understanding of neurobiology”. International Anxiety Disorders Annual Conference, Melbourne.

Dr Kate Hoy  
Symposium Presentation “Clinical impact of brain stimulation in psychiatry: investigating tDCS for the enhancement of cognition in schizophrenia”. 3rd Scientific Meeting of Biological Psychiatry Australia, 13-14 October 2014, Melbourne, Australia.

Dr Kate Hoy. Inaugural Invited Speaker for the Cognitive Neuroscience Unit Research Meeting, Deakin University, 24th March 2014, Melbourne. ‘Brain Stimulation and Cognitive Enhancement: Developing Optimal Methodologies’.

Dr Kate Hoy  
Invited Speaker, “The Emerging Field of Cognitive Neurotechnology” Queensland Brain Institute Neuroscience Seminar. 22nd October 2014, Brisbane

Dr Kate Hoy  
Invited Speaker, “The Emerging Field of Cognitive Neurotechnology: Using Brain Stimulation to Enhance Cognition” Translational Research Showcase, Monash Biomedical Imaging, Melbourne. 1st December 2014.

Dr Rebecca Segrave  
Invitee, 64th Lindau Nobel Laureate Meeting in Physiology or Medicine, held in Germany.

Dr Rebecca Segrave  
Invited Presentation, “Retraining the Brain to Beat Depression”. Psychiatry Academic Day, Monash University Faculty of Medicine Nursing and Health Sciences

Dr Bernadette Fitzgibbon  
Presented at the ‘2014 Cognitive Neuroscience Society’ annual meeting

Dr Bernadette Fitzgibbon  
Public lecture for the 2014 Australian Academy of Sciences series ‘Science Stars of Tomorrow’.

Dr Jerome Maller  
“Quantitative measurement of brain injury with a focus on post-decompression craniectomy: pilot study”. 11th International Neurotrauma Society Conference, Budapest, March 2014.

Dr Jerome Maller  
Invited Speaker, “Ocular thermography pre- and post-arteriovenous malformation removal”. 5th Symposium of Invasive Neurosurgery, ShenZhen, China, November 2014

Dr Jerome Maller  
Psychiatry Academic Conference, Melbourne, August 2014 (Invited Speaker). “The use of advanced neuroimaging after traumatic brain injury”

Filia S. Lee SJ, Sinclair K, Wheelhouse A, Wilkins S, de Castella A, Kulkarni J. Clozapine patients can successfully be transitioned into GP Shared-Care or private psychiatrist care. Oral Presentation at The Society for Mental Health Research Conference, Adelaide, 2014.

Lee SJ, Pillay B. Does sense of coherence protect against psychological distress prior to and following haematopoietic stem cell transplantation? Monash University Psychiatry Academic Day, Moorabbin, 2014.

Northe V, Makros J, Lee SJ. Collaboration between mental health and gambling professionals to better address comorbidity in gambling clients. Creative Cross-sector Collaborations Conference, Melbourne, 2014.

Ms Heather Gilbert. NRAMP Presentation, Australian Nursing and Midwifery Federation Conference, Melbourne, Victoria

## MAPrc STUDENT LIST 2014

## PhD

Rodney Anderson  
 Ross Anderson  
 TingTing Cao  
 Sean Carruthers  
 Natalia Contreras  
 Sung Wook Chung  
 Shayden Dayel Bryce  
 Heather Gilbert  
 Amity Green  
 Phillip Hall  
 Aron Hill  
 Melissa Kirkovski  
 Sarah Lancaster  
 Stephanie Louise  
 Kim Meates  
 Lisa Olive  
 Maree Reser  
 Philip Sumner  
 Eric Tan

## MPsych

Robyn Gill  
 Julia Nigro

## DPsych

Shayden Bryce  
 Melanie Emonson  
 Nicci Grace  
 Oscar Murphy  
 Brindha Pillay  
 Tegan Podubinski  
 Karyn Richardson  
 Kirstyn Windsor

## MAPrc STUDENT LIST 2014

## BPsych(Hons)

Nicole Brownfield  
 Elizabeth Lim  
 Elleni Lysikatos  
 Jessica Myles  
 Daniel Valladares

## BMedSc (Hons)

Elsa Anggraini  
 Treasa Gray  
 Anisa Ramadhianti  
 Amita Roy  
 Georgia Walter  
 Cindy Zahrary

## BMedSc

Rebecca Amanda  
 Laura Blair West  
 Ruth McLeod  
 Marco Micheal  
 Dean Whitty

## B Med Sci- Volunteers

Gemma Law  
 Claudia Lin Xiao

## MBBS - Year 5

Manu Bhatnagar  
 Hannah Cross  
 Benjamin Karsz  
 Graham Lai  
 Harold McLennan  
 Elizabeth Ng  
 Wei Ming Ong  
 Antony Sutherland  
 Angeline Thiagarajah  
 Chee Yeong

