2017–2018 BIENNIAL REPORT

MONASH ALFRED PSYCHIATRY RESEARCH CENTRE (MAPrc)

MAPrc
We mend minds

2017–2018
BIENNIAL REPORT

MONASH ALFRED PSYCHIATRY RESEARCH CENTRE (MAPrc)

Cover photo source:
istockphoto.com

MAPrc
We mend minds

CONTENTS

DIRECTOR'S REPORT
Professor Jayashri Kulkarni

2017 and 2018 have been years of change! The rapid growth of MAPrc over the past 5 years, led us to restructure the Centre to introduce the concept of two major Divisions (Women's Mental Health and Therapeutic Brain Stimulation), with 4 smaller programmes and 9 units.

The areas of research covered have been consolidated mainly into the work of the Divisions with two additional areas of research being psychopharmacology research based at the Caulfield site, and services research – mainly related to Alfred Psychiatry services. The designation of Divisions, Programmes and Units is based on staff numbers and outputs.

Another exciting initiative is the establishment of a new MAPrc site at the Epworth Healthcare Network – Camberwell site, under the leadership of Professor Paul Fitzgerald. My hearty congratulations to Paul, who has extended his research to the Epworth as part of his Monash University academic role and remains the Deputy Director of MAPrc.

Innovating psychiatric treatments to improve the outcomes for people with mental ill health remains our focus. Our very popular clinics, which provide real-world translation of our research, drive new research ideas, as we listen to people detail their stories of challenges and triumphs over mental ill health. Our research utilises the latest advances from the neurosciences integrated with critical input from psychological and social sciences, resulting in holistic approaches for people with mental ill health.

Mental health research needs greater resourcing. One of the biggest investments needed is to provide salaries for researchers. Mental health research needs talented people who dare to 'think outside the box' and are enabled to use scientific methodology to test hypotheses, to develop bold new strategies to alleviate suffering and who have the clinical acumen and sensitivity to translate the discoveries into the real world. I am proud to draw your attention to the work of the many talented researchers highlighted in this Annual Report and urge you to read about the bold innovative work done by dedicated and brilliant researchers with whom it has been my privilege to work. At MAPrc we strive to 'mend minds' with respect, equality and understanding.

Professor Jayashri Kulkarni
Director
Monash Alfred Psychiatry research centre (MAPrc)

DEPUTY DIRECTOR'S REPORT
Professor Paul Fitzgerald

The last two years have proven to be yet another interesting and challenging period of time in the life of MAPrc. The centre has continued to conduct challenging, innovative and cutting-edge research aimed at helping patients with really difficult to treat and highly disabling mental health conditions.

Doing research at the clinical interface can be extraordinarily satisfying but also very challenging at times as participants in studies can present with a variety of complications and clinical challenges either directly related to the research or at times just arising from the fluctuations of their mental health conditions.

2017 was especially challenging and exciting for myself as our research endeavours have spread to include the establishment of the Epworth Centre for Innovation in Mental Health (ECIMH) at the Epworth Clinic in Camberwell. In February 2017 I took up the position of Professor Director of Psychiatry for Epworth Healthcare based at the Epworth clinic in Camberwell and we subsequently established the ECIMH several months later. This Chair of Psychiatry is a Monash University academic position based within the Epworth and which has directly connected to MAPrc as the Department of Psychiatry within the Central Clinical School.

This development has opened the door for a variety of exciting opportunities for mental health research arising out of both MAPrc and ECIMH. There are a significant number of staff and students who are now based across both the Therapeutic Brain Stimulation team at MAPrc and ECIMH. This allows us to conduct research in both the private and public mental health sectors really spanning all of the major mental health conditions of relevance to day-to-day psychiatry.

With support from generous Epworth donors, we have established cutting-edge human neuroscience laboratories at ECIMH ensuring that these are closely integrated with our existing laboratory facilities at MAPrc to allow for a smooth and coordinated integration of research across the two sites. The commitment of Epworth Healthcare and the Epworth Foundation to support mental health research has been substantial supporting the provision and renovation of space as well as establishing laboratory facilities and engaging actively in fundraising to support ongoing research activities.

With the establishment of these facilities, and the strong links back to MAPrc, we are now in a position to continue to expand the cutting-edge research in which we are engaged. This includes the conduct of a number of inpatient transcranial magnetic stimulation studies which are already underway at the Epworth clinic and we are currently planning a phase IIa depression study also utilising the inpatient facilities. The studies will complement the wide range of ongoing clinical trials and investigative studies being conducted now across both sites. Hopefully the coming years will see us continuing to expand our research programs to enable us to touch the lives of as many patients with challenging mental health conditions as possible.

Professor Paul Fitzgerald
Deputy Director
Monash Alfred Psychiatry research centre (MAPrc)

MAPrc MANAGER
Anthony de Castella

Anthony de Castella is our centre's Research & Business Manager, and a member of the MAPrc Executive Team.

He is an Adjunct Research Fellow within the Central Clinical School at Monash University and has completed a Masters' degree in Psychophysiology through the Brain Sciences Institute, Swinburne University. His project explored resting EEG spectral power and hemispheric asymmetry changes over the menstrual cycle and their relationship with changes in circulating sex hormones and symptom severity in women with schizophrenia.

Anthony has had significant involvement in many of our translational research projects over the years, particularly in the areas of women's mental health, psychopharmacology, and problem gambling.

Anthony is a trained Registered General Nurse and has completed a Bachelor of Applied Science with a Co-major in Psychology/ Psychophysiology at Swinburne University. He commenced work with the Centre in 1994. Anthony provides financial, human resources, and general management for MAPrc. He also has input into strategic planning for the centre, and has oversight of marketing and fundraising.

The MAPrc Executive team. Anthony de Castella, Prof. Jayashri Kulkarni, and Prof. Paul Fitzgerald.

ABOUT MAPrc

The Monash Alfred Psychiatry Research Centre (MAPrc) is a multidisciplinary translational clinical research and academic centre based on St Kilda Road in the heart of Melbourne. MAPrc is a joint centre of Alfred Health, a major public teaching hospital, and Monash University, one of Australia's leading Universities and ranked in the world's top 100 Universities.

Founded in 1994 by Professor Jayashri Kulkarni, the centre began with her appointment as Service Director of the Psychiatry Department at Dandenong Hospital. Holding a joint academic appointment with Monash University, Professor Kulkarni steadily grew her research team and in 2002, when she was appointed Professor of Psychiatry at The Alfred, her entire team moved with her. At the time of writing MAPrc has over 150 staff and students, and conducts in excess of 100 clinical trials and studies at any one time.

Our research has a focus on world class translational clinical trials and studies that will make a transformative difference to people living with severe 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.

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.

It is impossible to adequately cover the full breadth and depth of activities performed by the centre in an annual report but we hope this report can provide you with a flavour and insight into our work and in particular this year into the dedicated and inspirational people who make up our centre.

MAPrc Vision

"To make a transformative difference to the lives of people with mental illness"

MAPrc Mission

"To develop new treatments, new understandings and new services for mental illness."

Our Philosophy

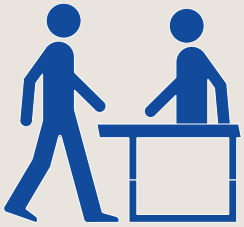
"To conduct world class psychiatric research with respect, equality and understanding."

Our Patron

We are privileged to have as our patron the Governor-General His Excellency the Honourable Sir Peter Cosgrove AK MC (Retd). We are grateful for his continued patronage and support of our centre.

MAPrc AT A GLANCE

2,500+
Participant Visits



100+
Research Projects & Clinical Trials

200+
Publications & Conference Presentations

150+ team

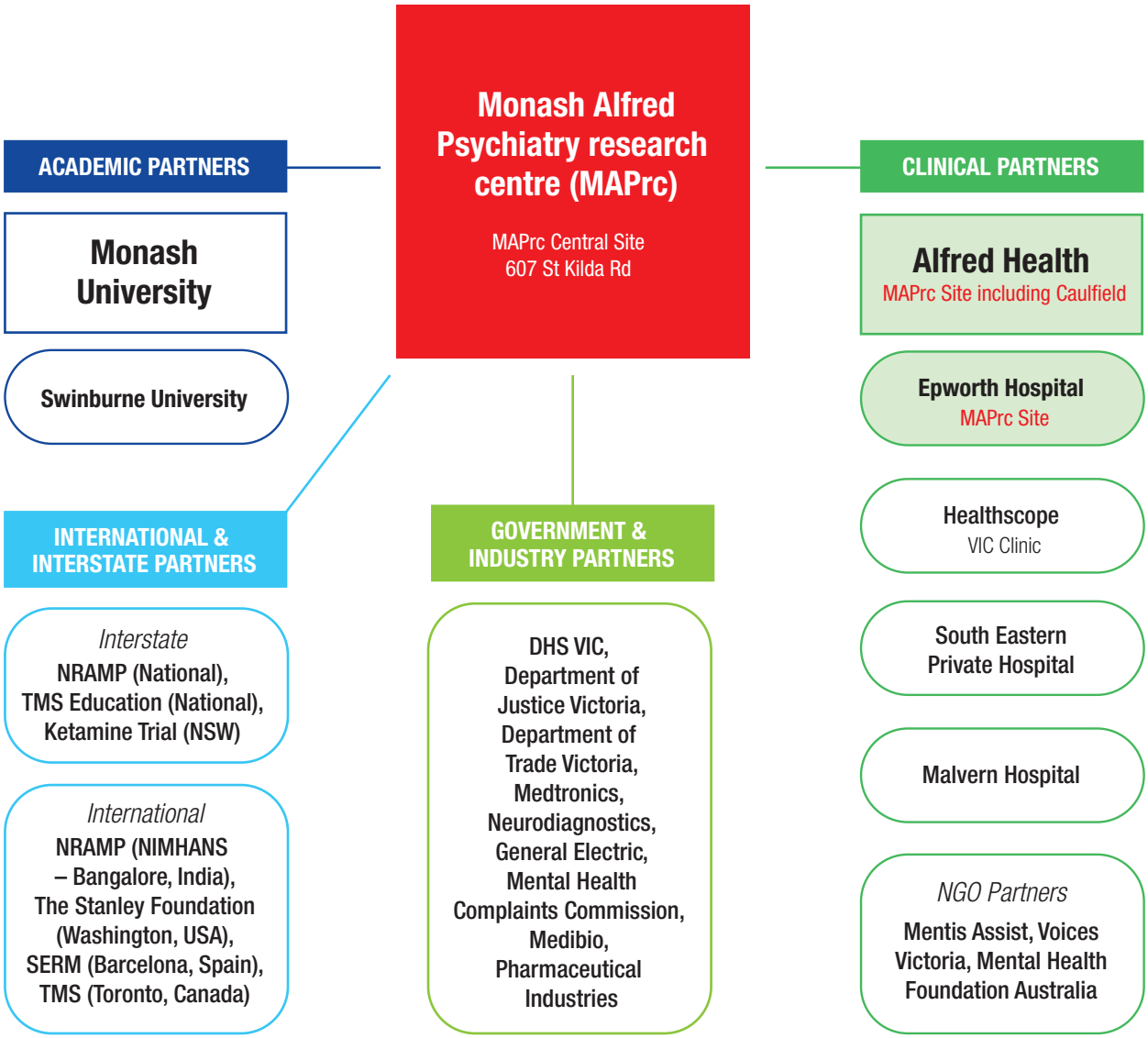
Personnel including Senior Researchers, Research Assistants, Research Nurses, Study Coordinators, Clinicians, Academics, Volunteers, Affiliates, Honours, Masters & PhD Students, Overseas Visitors/Observers, Administration Staff, and Managers

$6 Million
Annual Turnover

Strong Media & Community Impact

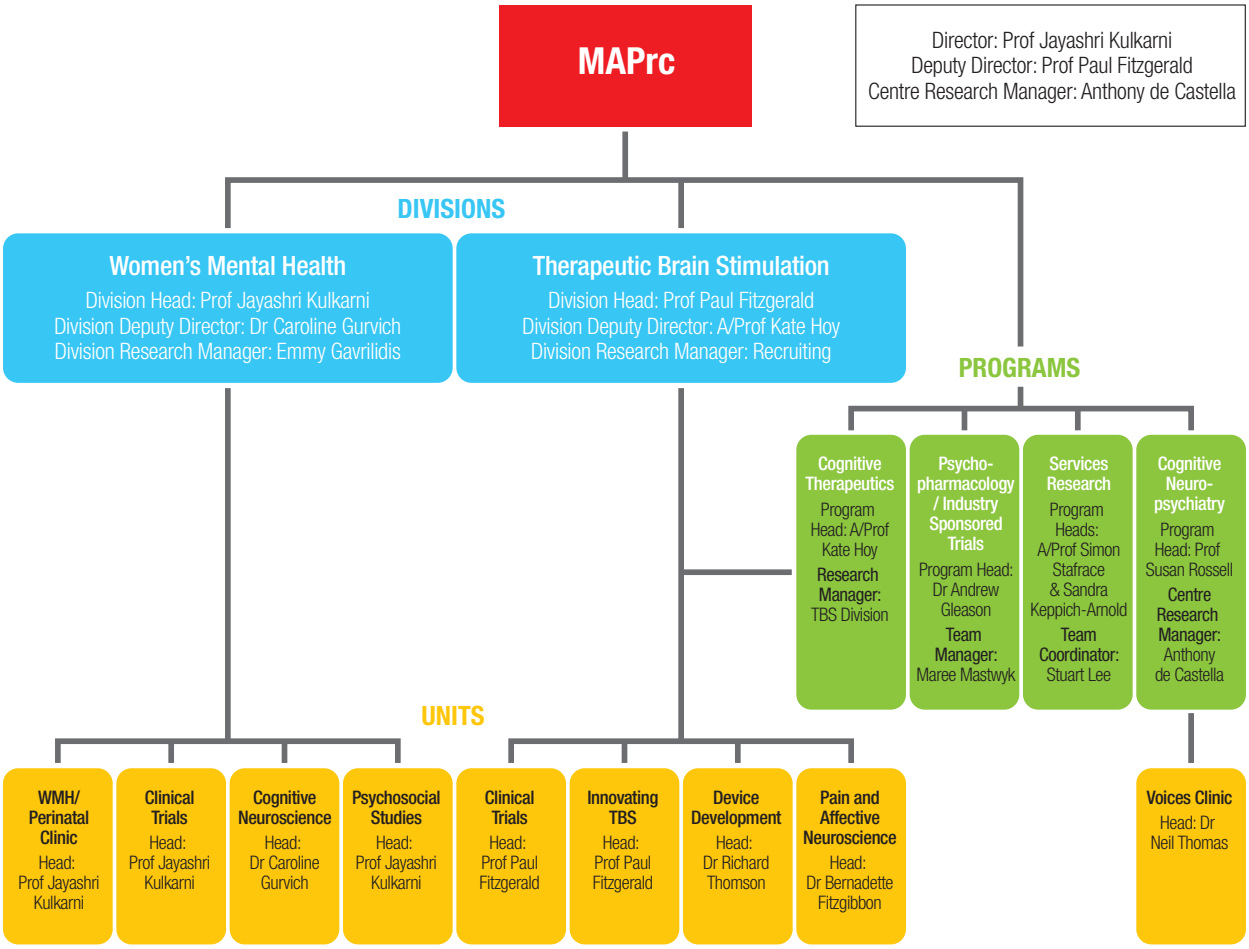
Local, National & International Partners & Collaborators

OUR PARTNERS



ORGANISATIONAL CHART

MAPrc Research Governance Structure



As at 10/04/2018

OUR ACTIVITIES
Our Research

MAPrc conducts clinical research which is designed to either:

a) Understand more about the illness under study so we can better tailor potential new treatments, or

b) Develop and test new and innovative effective treatments for mental illness so that they can rapidly be made available for people living with mental illness in the community

Our research is divided into Divisions, Programs and Units reflecting the amount of funding, number of staff and number of projects attached to each area. Below is an overview of each area and in section 3 of this report we present profiles of our senior researchers, and other personnel including a description of their research area and some of the projects currently being conducted.

Our Research (continued)

Women's Mental Health

The importance of gender differences in aetiology, diagnoses and treatment has traditionally been neglected in psychiatry. The Women's Mental Health team recognises the complex interaction of biological, psychological and social factors that give rise to clear differences in responses in men and women, and aims to provide gender-tailored novel treatments and interventions.

Principle areas of focus during 2017 and 2018 included clinical trials to assess novel treatments in borderline personality disorder, schizophrenia, and perimenopause. Expanding current scientific knowledge on the role of the neuroendocrine system in mental illness is critical to these projects.

Exploratory studies of 2017 and 2018 included exploring potential hormonal and medication treatments for men and women with borderline personality disorder, methods for harm reduction in smoking in patients with schizophrenia, and policy-driven projects, including reporting of sexual safety complaints while in psychiatric facilities.

NRAMP, the National Register of Antipsychotic Medication in Pregnancy, continued into its 15th year, providing the world's first registry of its kind. This database aims to develop our understanding of the effects of antipsychotic medications taken during pregnancy and the post-natal period. Alongside research, the team is in a unique position, sitting adjunct to the Women's Mental Health Clinic. This provides an interface of research and clinical practice, ensuring direct translation of the treatments and interventions, developed to ensure real world change.

Members of the 2017 & 2018 Women's Mental Health Division.

WMH Director

Professor Jayashri Kulkarni

Senior Researchers

Dr Caroline Gurvich Deputy Director

Emmy Gavrilidis Research Manager

Dr Natalie Thomas
Post-Doctoral Researcher

Dr Jasmin Grigg
Post-Doctoral Researcher

Dr Caroline Thew Endocrinologist

Dr Gemma Sharp
NH&MRC Early Career Fellow

Higher Degree Research Students

Heather Gilbert PhD

Dr Carolyn Breadon (PhD)

Jacinta Cheng BMedSci (Hons) 2017

Hariklia Vagias BSci (Hons) 2018

Jana Grieger BPsych (Hons) 2018

Sai Ponnaganti BMedSci (Hons) 2018

Siddarth Narambarath
BSci (Hons) 2018

Caitlin Bleeker BPsych (Hons) 2018

Researchers

Iris Liang Research Assistant

Alisa Turbic Research Assistant

Heather Gilbert Research Nurse

Jacinta Cheng Research Assistant

Amelia Arnold Research Assistant

Fiona James Research Assistant

Caitlin Bleeker Research Assistant

Gayan De Mel Research Assistant

Lonneke Walraven Psych Reg

Clinical Staff

Prof Jayashri Kulkarni Psychiatrist

Dr Carolyn Breadon Psychiatrist

Dr Caroline Thew Endocrinologist

Dr Abdul-Rahman Hudaib
Medical Officer

Clinic Coordinators

Rachana Pattali Clinic Coordinator

Cindy Yu Clinic Coordinator

Margie Whittmann (Clinic Volunteer)

Miki Boneh (Clinic Volunteer)

Our Research (continued)

Therapeutic Brain Stimulation

The development of truly effective treatments in psychiatry and neurology requires an understanding of the biological basis of brain illnesses. Through the use of advanced neuroscience techniques, we are able to investigate brain function in illness and develop innovative treatments.

The Therapeutic Brain Stimulation Team's research is aimed at developing and expanding innovative brain stimulation techniques, through world-first research and commercialisation, and to evaluate their clinical applications.

We conduct clinical trials in conditions such as depression, schizophrenia, anxiety disorders, post-traumatic stress disorder, traumatic brain injury, Alzheimer's disorder, pervasive developmental disorders and chronic pain. In addition to our clinical trials, the team is also engaged in studies using advanced neuroscience techniques to try and better understand the underlying brain processes of psychiatric and neurological disorders and the mechanisms through which brain stimulation may enhance function.

The team includes internationally recognised researchers with backgrounds in neuroscience, biomedical engineering, psychiatry, clinical neuropsychology, clinical psychology and psychiatric nursing.

TBS Director

Professor Paul Fitzgerald

HEAD Cognitive Therapeutics Research Program

Associate Professor Kate Hoy

Head, Pain and Affective Neuroscience Unit

Dr Bernadette Fitzgibbon

Project Management and Development

Ms Veronika Simic

Team Coordinator

Dr Karyn Richardson

Senior Researchers

Dr Richard Thomson Biomedical Engineer & Neuroscience Researcher

Dr Neil Bailey Research Fellow

Dr Robin Cash Research Fellow

Dr Manreena Kaur NHMRC Early Career Research Fellow

Research Psychiatrists

Dr Odette Edelstein

Dr Leo Chen

Research Nurses

David Elliot

Susan McQueen

Lenore Wambeek

Research Assistants

Hannah Coyle

Robert Eres

Kirsten Gainsford

Laura Knox

Caitlyn Rogers

Caley Sullivan

Higher Degree Research Students

Dr Leo Chen

Aron Hill

Sung Chung

Sin-Ki Ng

Xianwei Che

Robert Cooper

Melanie Emonson

Our Research (continued)

Mental Health Service Research

The Mental Health Service Research Team operates as a partnership between Monash Alfred Psychiatry research centre (MAPrc) and the Department of Psychiatry, Alfred Health, with staff additionally conducting and facilitating the conduct of research through headspace centres in Melbourne's south-east.

The team is led by Clinical Associate Professor Simon Stafrace (Program Director, Alfred Psychiatry) and Sandra Keppich-Arnold (Associate Director of Nursing and Operations, Alfred Psychiatry) and receives expert academic input from Professor Jayashri Kulkarni (Director, MAPrc). Two research fellows operate to coordinate the conduct of research in particular within the adult and consultation and liaison and emergency psychiatry programs and child and youth and headspace programs operated by Alfred Psychiatry.

We are focused on conducting research to better understand factors impacting on the quality, effectiveness and experience of mental health care delivery and implement and measure the impact of innovative interventions or approaches to therapy or care provision.

MHSR Team Leaders

Clinical Associate Professor Simon Stafrace

Sandra Keppich-Arnold

Professor Jayashri Kulkarni

Senior Researchers

Dr Stuart Lee Research Fellow/ Team Coordinator

Dr Liza Hopkins Research Fellow

Higher Degree Research Students

Ross Anderson PhD

Shayden Bryce D.Psych

Richard Lawrence D.Psych

Researchers

Hannah Bushell Research Nurse

Michelle Kehoe Research Assistant

Clinician Researchers

Professor Wendy Cross Nurse

Rachel Barbara-May Social Worker

Pam Hellema Art Therapist

Professor Yitzchak Hollander Psychiatrist

Vicky Northe Social Worker

Dr Evan Symons Psychiatrist

Fiona Whitecross Nurse

Dr Toby Winton-Brown Psychiatrist

Lynda Katona Psychologist

Dr Roxy Tsui Psychiatrist

Dr Laura McCartney Psychiatrist

Our Research (continued)

Conference Presentations

Bryce S, Lee S, Warren N, Ponsford J, Rossell S. *The lived experience of cognitive remediation for people with schizophrenia: A qualitative comparison with an active control.* Poster presented at the ASSBI Brain Impairment Conference, Melbourne, 2017.

Bushell H, Whitecross F, Berry C, Sonmez G, Moran J, Rauchberger I, Hollander Y, Harrison E, Bennett C, Lee S. Exploring the prevalence and impact of behaviours of concern and whether a psychiatric behaviour of concern team improves safety. Poster Presentation. Alfred Research Week, June 2018.

Lee S, Thomas P. *Sexual safety notification pilot – Results from data collected from the implementation of the new reporting checklist and procedure for sexual incidents on acute inpatient units.* Mental Health Quality and Safety Forum Presented by the Chief Psychiatrist, December 2018.

Lee S, Thomas P, Newnham H, Freidin J, Smith C, Lowthian J, Borghmans F, Gocentas R, De Silva D, Stafrace S. *People who are homeless frequently present to hospital emergency departments but homeless status is often not identified and documented.* Poster Presentation. Alfred Research Week, June 2018.

Lee SJ, Bryce S, Lawrence R, Ponsford J, Rossell S. *Treating cognitive impairments in schizophrenia and factors impacting on effectiveness and translation.* Oral Presentation. Society for Mental Health Research Annual Conference. Canberra, 6–8 December 2017.

Lee SJ, Thomas P, Freidin J, Stafrace S. *People who are homeless attend a hospital emergency department for physical health, mental health and social needs.* Society for Mental Health Research Annual Conference. Oral Presentation. Canberra, 6–8 December 2017.

Nambiar D, Lee S, Weir-Phyland J, Hunt J, Gates C, Teo M, Xiao X, Dean E, Marum S, Keppich-Arnold S, Corben K, Newnham H, Hunter P, Stafrace S, Ananda-Rajah NR. *Clinical aggression in a large health service is not just an ED problem.* Poster Presentation. Alfred Research Week, June 2018.

Stafrace S, Lee S, Thomas P, Henderson K, Symons E, Smit de V, Atkins R, Hobbs B, Reynolds A, Keppich-Arnold S. *Redesign of an emergency department psychiatry model of care to enhance safety and patient and service outcomes.* Poster Presentation. International Forum for Quality and Safety in Healthcare, London, April 2017.

Whitecross F, Bushell H, Berry C, Sonmez G, Moran J, Rauchberger I, Hollander Y, Harrison E, Bennett C, Lee S. *Exploring the prevalence and impact of behaviours of concern and whether a psychiatric behaviour of concern team improves safety.* Oral Presentation. 19th Victorian Collaborative Mental Health Nursing Conference, August 2018.

Prizes

Poster titled *"Exploring the prevalence and impact of behaviours of concern and whether a psychiatric behaviour of concern team improves safety"* awarded the winner of the Director of Research Poster Prize for Patient Safety & Quality Improvement, Alfred Research Week, 2018.

Poster titled *"Clinical aggression in a large health service is not just an ED problem"* awarded a High Commendation for the Director of Research Poster Prize for Patient Safety & Quality Improvement, Alfred Research Week, 2018.

Poster titled *"Exploring the prevalence and impact of behaviours of concern and whether a psychiatric behaviour of concern team improves safety"* awarded the winner of the Psychiatry Poster Prize, Alfred Research Week, 2018.

Stuart Lee authored 2 submissions for Alfred Psychiatry that were one of 4 finalists in the Minister for Mental Health's Award for excellence in supporting the mental health and wellbeing of Victorians, Victorian Public Healthcare Awards, 2018, titled *"An integrated psychiatry model of care in the Emergency & Trauma Centre improves care for patients with mental health"* and *"The MET equivalent in psychiatry: the Psy-BOC team responds early to prevent deterioration".*

Our Research (continued)

Psychopharmacology

The Psychopharmacology Research Team specialises in executing industry-sponsored clinical trials for new pharmacological treatments in neuropsychiatric conditions. Under the guidance of both Professor Jayashri Kulkarni and Dr Andrew Gleason, our team of researchers, including medical practitioners, neuropsychologists and nurses/clinical trial coordinators, has contributed to the effort to find new treatments for Alzheimer's disease and mood disorders.

Our expert ability and knowledge are reflected in the first-rate reviews we receive from various clinical trial stakeholders. We continue to foster invaluable partnerships with numerous practicing clinicians and to develop an ongoing patient referral pipeline. We also receive consistent positive feedback from our patients who report great enjoyment from being a part of our research programs.

Research into treatments for Alzheimer's disease is becoming increasingly more important. With an aging population, it is estimated that there are currently 358,000 people living with dementia in Australia and this is expected to increase to 400,000 in the next 5 years. Now, more than ever, there is a need for pharmaceutical treatments that not only treat the symptoms of dementia but also act on the underlying pathophysiology. A number of current clinical trials focus on delivering disease-modifying treatment to the general population in the future.

Back row, Jenny Bortoli, Fenny Muliadi, Jenny Ung.
Front row, Sue Dal Sasso, Maree Mastwyk.

Psychopharmacology Team Leaders/ Chief Investigators

Professor Jayashri Kulkarni (Adult Psychiatry)

Dr Andrew Gleason (Psychogeriatric)

Medical Staff

Dr Christopher Chew (2017)

Dr Cecilia Etulain (2017)

Dr Ben Gornall

Dr Abdul-Rahman Hudaib

Dr Brian Leung

Dr Claire Wise

Dr Kelly Wright

Team Managers

Ms Li Hoon Lai (2017)

Dr Maree Mastwyk

Research Staff

Ms Jenny Bortoli Study Coordinator

Mr Paul Cortissos Study Coordinator (2017)

Ms Sue Dal Sasso Study Coordinator

Ms Fiona James Study Coordinator (2017)

Dr Catarina Kordsachia Study Coordinator (2017)

Dr Matthew Lewis Research Assistant

Dr Fenny Muliadi Neuropsychologist

Ms Jenny Ung Study Coordinator

Our Research (continued)

Cognitive Neuroscience

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.

Cognitive Neuroscience Team Leader

Professor Susan Rossell

Team Coordinator

Wei Lin Toh

Senior researchers

Associate Professor Neil Thomas

Dr Caroline Gurvich
Senior Research Fellow

Dr Eric Tan
Postdoctoral Researcher

Student Researchers

Shayden Bryce (D.Neuropsych)
Sean Carruthers (PhD)
Stephanie Louise (PhD)
Alessandra Gaillard (PhD)
Lizzie Thomas (PhD)
Imogen Bell (PhD)
Michelle Robertson (Honours)
Josh Kontrobarsky (Honours)
Maree Reser (D.Psych)
Phil Sumner (PhD)
Monique Scott (PhD)
Urszula Bobrowski (PhD)
Jacqui Tassone (PhD)
Rachel Brand (PhD)
Gabriel Newnham (Honours)
Inge Gnatt (Honours)

OUR ACTIVITIES
Our Teaching

MBBS/MD Medical Teaching

Monash University MBBS/MD Year 4C Psychiatry (Medicine of the Mind) MED4190

Teaching Team Staff

Prof Paul Fitzgerald
Clinical Site Coordinator

Dr Sarah Rotstein
Academic Clinical Site Coordinator

Dr Leo Chen Lecturer

Dr Carolyn Breadon Lecturer

Anne Crawford
Clinical Site Administrator

Amy Laslett Assistant Administrator

Our role consists of coordinating the year 4C psychiatry teaching program at Alfred Health and, at a faculty level, curriculum review and development, and evaluation of the psychiatry teaching program across all years of the Monash MBBS/MD degree.

Psychiatry Teaching at Alfred Health

At the Alfred, our students gain a wide-ranging experience in Psychiatry through placement at a range of Alfred Health's psychiatric services. Each student has the opportunity to attend clinical placements at the following services: inpatient units at the Alfred Hospital, Alfred Health Community Mental Health Service clinics, Malvern Private Hospital's Drug and Alcohol Addiction Recovery Treatment program, and Alfred Health's Aged Psychiatry Department at Caulfield Hospital. In addition, in 2017 we introduced placements with Alfred Health's CATT, and the Emergency Psychiatry Service, while in 2018 we introduced a placement with Headspace Moorabbin.

As well as direct clinical experience, our teaching program includes a formal tutorial program, which utilises the extensive knowledge and teaching expertise of senior academics within Alfred Psychiatry. In 2017, we were excited to be able to add a full day of teaching from the Child and Youth Mental Health Service at Moorabbin, as well as a half day of teaching on cognitive assessment and capacity.

Our psychiatry teaching team 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.

Our Teaching (continued)

Rotation 3 Alfred Health 4C Psychiatry Students 2018.

Recognition and prizes

In 2018 Alfred Health attained the highest score in the inaugural Year 4C psychiatry placement student satisfaction surveys. We have been keen to ensure the positive feedback is reaching our clinical educators and in 2018 presented each clinical site with a certificate and Christmas hamper as a thank you from the clinical school and our students.

Our work has also been recognised outside of the psychiatry department. Dr. Rotstein was awarded the Central Clinical School Inaugural Teacher Innovation and Impact Award for her development of 'Phenomenology Charades' in 2018. In addition, Dr. Rotstein is also the project lead for a group of academics and professional staff across Monash University who were awarded an Interfaculty Transformation Grant from the Monash Education Academy. This grant has been provided for a project to design empathy teaching modules for use across faculties at Monash University.

In 2018, Dr. Rotstein was awarded the Central Clinical School Inaugural Teacher Innovation and Impact Award for her development of 'Phenomenology Charades'.

In Dec 2018, Christmas hampers and certificates were distributed to all the clinical placement sites as a thank you from the teaching team and the students.

'Phenomenology Charades' is a card game to assist students to learn psychiatry terminology.

Our Teaching (continued)

Curriculum Review and Development of Monash University MBBS/MD Psychiatry Teaching

Across 2017 and 2018 Prof Jayashri Kulkarni and Dr. Sarah Rotstein led a review and re-development of the Monash University MNHS Faculty's psychiatry teaching curriculum. This review included a student survey (which included 550 participants) and a junior doctor and general practitioner survey, as well as focus groups. We established The Psychiatry Academy, a group of medical academics and educators, who will continue to develop and review the psychiatry curriculum.

In 2018, the new curriculum for year 4C was approved by the relevant faculty committees and, together with new assessment tasks, will be launched for students in 2019. We look forward to working with faculty groups to continue to revitalise the psychiatry teaching across the Monash MD program.

Monash University MBBS/MD Year 5D Psychiatry Selective MED5091

Teaching Staff

Prof Jayashri Kulkarni
Clinical Supervisor

Michaela Corr
Administrative Officer

Aileen McInerney
Administrative Officer

Monash University Year 5D MBBS medical students are required to complete a specialty clinical placement. The aim of this placement is to broaden their knowledge and skills in areas of clinical practice of their own choosing in a six-week clinical placement.

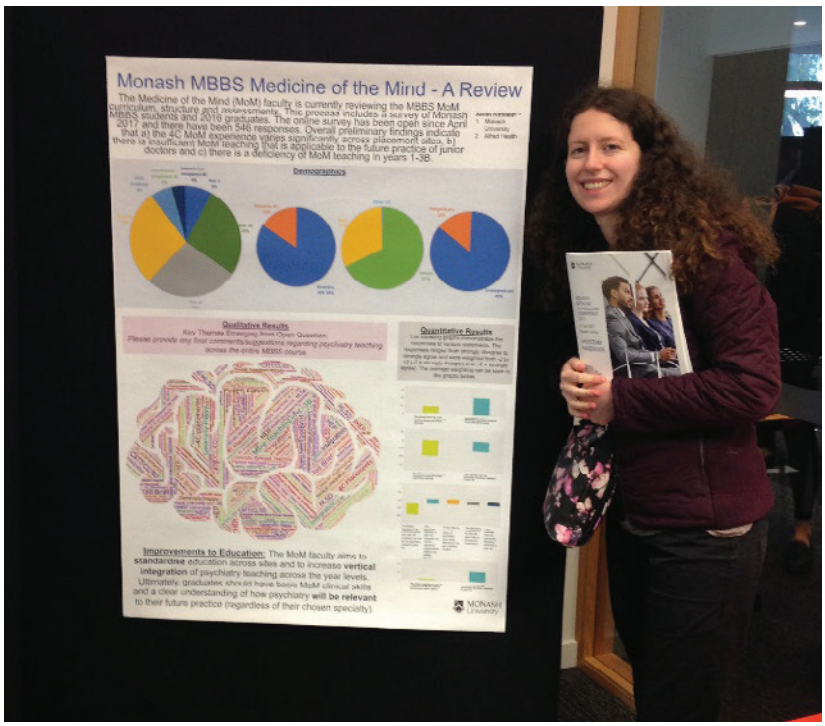
Students who nominate to undertake a Year 5D Psychiatry Specialty or Selective at the Alfred Hospital have their time split between shadowing Professor Kulkarni at her clinical work (at the MAPrc Women's Mental Health Clinic), and supervision, under a psychiatrist and registrar, on one of the Alfred Hospital Psychiatry Inpatient Units.

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

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 program introduces students to research practice in a research setting with Australian and internationally recognised researchers. The students learn skills relating to data analysis and the communication of scientific ideas via oral presentations and a written thesis. The Bachelor of Medical Science (Honours) program 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 July 2017, Dr Rotstein attended the inaugural Monash Medicine Curriculum Conference, where she presented a poster on our review of the psychiatry teaching program.

MBBS MED5091 Teaching Administrative Officer – Michaela Corr.

OUR ACTIVITIES
Our Training Courses

In Her Shoes Training Course

The Monash Alfred Psychiatry Research Centre (MAPrc), together with Servier Pharmaceuticals, hosted its 3rd Annual "In her Shoes" Conference on the 23rd September 2017 at the Sheraton Hotel, Melbourne, and the 4th on the 15th September 2018 at the Sofitel Hotel, Melbourne.

Both of these one-day conferences were attended by 100-plus general practitioners from both metropolitan and rural areas all over Australia.

In her opening address Prof Jayashri Kulkarni said "Women's Mental Health needs to be made a national priority and is everyone's business."

The Women's Mental Health Team from MAPrc presented the latest research and understanding about key issues impacting on women's mental health.

The areas covered included:

- Polycystic ovary syndrome (PCOS)
- Premenstrual dysphoric disorder (PMDD)
- Understanding and Managing Borderline Personality Disorder (BPD)
- Motherhood and Mental Health
- Perimenopause/Menopause-Endocrine Aspects, Anxiety and Depression, Cognitive changes

The event was informative, nurturing and inspiring for those who attended.

Our Training Courses (continued)

Brain Stimulation Training Courses

The Psychiatric Neurotechnology Team has been providing comprehensive clinical and research training in brain stimulation techniques since 2013. Our training programs have been developed to cater for both researchers and clinicians.

www.tmscourse.com

THE BRAIN STIMULATION COURSE FOR RESEARCHERS

The **Brain Stimulation Course for Researchers** has been designed for research students and post-doctoral researchers who are new to techniques such as TMS and tDCS, as well as for those with more experience who wish to use advanced brain stimulation methodologies such as integrating TMS with EEG.

THE CLINICAL CERTIFICATION COURSE

The **Clinical TMS Certification Course** provides training in the provision of TMS for the treatment of Major Depression. This course has been designed for medical and nursing graduates, with options for those new to TMS as well as those with previous TMS experience.

These comprehensive and intensive courses included a series of didactic lectures given by experts in the use of TMS for clinical and research purposes, as well as hands-on training and assessment.

Demand for the courses has been growing over the years from both clinicians and researchers, in line with the expansion of TMS treatment services and interest in TMS research.

OUR ACTIVITIES
Our Clinics

The Women's Mental Health Clinic

The Women's Mental Health Clinic provides a tertiary medical, psychiatric and endocrine consultation service and new treatment approaches for women experiencing a range of mental illnesses, including schizophrenia, schizoaffective disorder, bipolar affective disorder, borderline personality disorder, menopause and menstrual-related depression and anxiety.

The clinic operates on the principle of empowerment of our women clients, and we combine physical health examinations with mental health assessments. We also provide an information and education service for the treating clinicians involved with our clients.

Importantly, an assessment letter with new management suggestions is sent to the referring doctor and the woman herself, to further her central role in her own management. We also encourage her to bring family members/friends to the consultation so that an education process is undertaken, not only with our client but also with her loved ones.

Clinic Staff

Prof Jayashri Kulkarni Psychiatrist

Dr Caroline Thew Endocrinologist

Dr Gemma Sharp
NHMRC ECR & Clinical Psychologist

Clinic Coordinators

Cindy Yu Clinic Administrator

Rachana Pattali Clinic Administrator

Michaela Corr Executive Assistant

The Voices Clinic

The Voices Clinic is a specialist psychological treatment and research clinic for people who hear voices or have similar experiences. The clinic provides consultation to people who experience persisting hallucinatory experiences such as hearing voices, and offers courses of sessions of psychological therapy approaches to help people self-manage these experiences as effectively as possible. Provision is integrated with training of postgraduate clinical psychology students from Swinburne University of Technology, and with research to develop new therapeutic approaches.

As part of a program of research into developing more targeted interventions for persisting hallucinations, we support five PhD students conducting research on processes and intervention approaches that will advance treatment.

As well as researching psychological therapies, the clinic conducts research on the experience of voices, on adaptation to hearing voices, and on their causes and mechanisms. Our team has been collaborating with researchers internationally to develop a better understanding of what voices are like across different clinical and nonclinical groups, and to develop better assessments.

Our international collaborations include some of the world's leading hallucination research centres including the University of Durham, Sussex University, University of Bergen, and University Medical Centre Utrecht, as well as with the voice hearer-led International Hearing Voices Network. We are also part of the International Consortium on Hallucinations Research.

SENIOR RESEARCH STAFF

PROFESSOR JAYASHRI KULKARNI

MBBS MPM PhD FRANZCP FAHMS
Director MAPrc
Director MAPrc Women's Mental Health Division

2017/2018 Staff

Dr Caroline Gurvich Deputy Director

Ms Emmy Gavrilidis
Research Manager

Dr Natalie Thomas
Postdoctoral Researcher

Dr Jasmin Grigg
Postdoctoral Researcher

Mr Abdul-Rahman Hudaib
Research Medical Officer

Dr Carolyn Breadon Consultant Perinatal Psychiatrist, PhD Candidate

Dr Gemma Sharp
NH&MRC Early Career Fellow

Ms Heather Gilbert
Research Nurse, PhD Candidate

Mr Gayan De Mel Research Assistant

Ms Amelia Arnold Research Assistant

Ms Fiona James Research Assistant

Ms Iris Liang Research Assistant

Ms Alisa Turbic Research Assistant

2017/2018 Supervisions

Dr Carolyn Breadon
PhD Candidate 2017-

Neuroendocrinology and autoimmune triggers for post-partum psychosis

Ms Heather Gilbert
PhD Candidate 2016-

Development of a New Model of Support and Advocacy for Pregnant Women & New Mothers with severe mental illness

Sai Ponnaganti
Monash BMedSci (Hons) 2018

How does age of trauma exposure influence the relationship between early life adversity and dissociation

Hariklia Vagias
Monash BSci (Hons) 2018

Group differences of cytokine levels in Borderline Personality Disorder and Non-psychiatric controls

Jacinta Cheng
Monash BMedSci (Hons) 2017

The Effect of Early Life Trauma on Cognition and Emotion Regulation in Complex Trauma Disorder

2017/2018 Grants & Awards

- $683,748 from Stanley Medical Research Institute for the project titled 'Bazedoxifene – A New Selective Estrogen Receptor Modulator Treatment for people with schizophrenia (2018–2021)
- $850,284 from SWISSE: Supporting Women in Menopause (SWIM Study) (2018–2020)
- $196,142 from the Helen Macpherson Smith Trust: An innovative holistic approach to women's mental health in rural and regional Victoria (2018–2021)
- $21,291 from Faculty of Arts and Faculty of Medicine, Nursing and Health Sciences Interdisciplinary Research Seed Funding Scheme: Snapchat Dysmorphia: The role of social media in young people's body image concerns and online interventions (2018)
- $993,067 from National Health and Medical Research Council for project grant titled: A randomised controlled trial of NMDA antagonist, memantine, for the treatment of borderline personality disorder (2017–2019)
- $300,000 from Alfred Felton Bequest for the project 'Preventing suicide in perimenopausal women: a new approach' (2018–2021)
- $312,000 from The Trustees of The Alison Wolinski Foundation for the establishment and support of The Alison Project (2017–2022)
- $300,000 from Equity Trustees for Preventing Suicide in Perimenopausal Women: A New Approach
- MAPrc successful in bid to host International Association of Women's Mental Health conference in 2021, and will be awarded $216,000 to cover costs of hosting the conference (2017)

Senior Research Staff (continued)

- $90,000 from Monash Partners & Equity Trustees Partnership for New Approaches for Perimenopausal Depression (2017–2019)
- $100,000 from Janssen for the National Registry of Antipsychotic Medication during Pregnancy NRAMP (2017–2019)
- $11,000 from Differential Australian Friends of Tel Aviv University-Monash University (AFTAM) Collaboration Awards for Post-Traumatic Reactions in Israeli and Australian Populations (2017–2018)
- $19,752 from Equity Trustees for MMI: MothersMatter Intervention, a new support service for pregnant women with mental illness (2017)

About Jayashri

Jayashri Kulkarni was appointed Professor of Psychiatry at The Alfred and Monash University in 2002.

Professor Kulkarni graduated from The Monash School of Medicine in Melbourne Australia. She initially worked in emergency medicine and then decided to become a psychiatrist. She became a Fellow of the Royal Australian and New Zealand College of Psychiatrists in 1989 and was awarded a PhD from Monash University in 1997 for her thesis Women and Psychosis. Professor Kulkarni became a Fellow of the prestigious Australian Academy of Health and Medical Sciences in 2016.

Overview Research Areas and Strategic Goals

Jayashri has won numerous awards and accolades for her work with mental health patients. Of note, Women's Mental Health is Professor Kulkarni's major area of interest and research. She was elected President of the International Association for Women's Mental Health in 2017 – an important role that she will have until March 2019. In 2015, she founded the Australian Consortium for Women's Mental Health. She has worked in the field of women's mental health for 25 years and has improved the quality of care for women with mental illnesses by developing specific treatments that are tailored to suit women's needs biologically, socially and psychologically. Her work has been published in many national and international peer-reviewed publications. To date, Professor Kulkarni has authored in excess of 200 papers, 23 book chapters and 40 other publications.

As a psychiatrist, Professor Kulkarni has extensive clinical experience in many broad areas of practice. She has also trained in many research areas including psychoneuroendocrinology, clinical trials, psychopharmacology and is currently working in the area of the neuroscience impacts of early life trauma.

Professor Kulkarni is a well-known public speaker and has a great deal of experience with the media. She has been a regular presenter on ABC radio and has contributed to many other talkback radio programs as well as appearing on television programs such as the Insight series on SBS, and ABC 7.30 report. She is also a highly sought-after presenter having been invited to deliver keynote addresses at many international meetings and conferences in Australia and around the world.

Featured Projects

The Alison Project: A randomised double-blind placebo controlled investigation of adjunctive memantine in the treatment of symptoms of complex trauma disorder

Investigators: Kulkarni J, Thomas N, Hudaib A, Gavrilidis E, Gurvich C.

Funding: Alison Wolinski Foundation

Duration: 2017–2023

Background: Complex Trauma Disorder (CTD) is a serious, highly prevalent, stigmatised mental illness with no established biological understanding or effective treatment. Women with CTD have experienced trauma in their childhood or adolescence. The trauma can be emotional, physical or sexual abuse. As adults, sufferers of CTD experience severe interpersonal stress, frequent suicidal thoughts, mood instability, impulsivity and stress-related dissociation. Women with CTD are subject to high mortality and morbidity, and are frequent users of health services. Suicide risk is extremely high in this population; at least 75% of individuals with CTD attempt suicide, and 10% complete suicide. With suicide rates in this patient population alarmingly high and on the upward trend, clinical research that can be translated into practice quickly is imperative.

The poor knowledge about this condition and lack of tailored medications often lead to sufferers being prescribed many different medications, each with significant side effects. These difficulties contribute to the intense stigma that sufferers encounter in the community, and even in the hospital setting. CTD is far more complex than someone having a 'difficult' personality, and effective treatment and support is profoundly poor.

Senior Research Staff (continued)

A demonstration of the eye tracking used in the Alison Project.

The eye tracking headpiece is lightweight and allows testing of cognitive abilities.

Testing stress levels using saliva and blood samples.

Enrolled honours students engaged in discussions about their projects based on the Alison Project.

Thus, a new and effective approach for this condition is vital for young women, their families and the broader community. Current psychological treatments are expensive and difficult for CTD patients to access, while there is no clearly designated pharmacotherapy.

Despite the high prevalence, economic impost and individual suffering, biological research in CTD remains in its infancy. A new approach with a new treatment option is urgently needed. A way forward is to view cognitive disturbance in CTD as underpinning all of the key symptoms including emotional instability, aggression, impulsivity, dissociation, as well memory and learning impairments. The glutamatergic system, in particular, the N-methyl-D-aspartic acid (NMDA) subtype receptor, is increasingly recognised for its role in CTD, with recent neurobiological research linking NMDA neurotransmission dysfunction (overactivity) to CTD symptomatology. Memantine is a NMDA antagonist that has been used to improve cognition in Alzheimer's disease.

Aims: The Alison Project investigates the use of memantine 20mg (compared to placebo) in women with CTD and aims to improve symptom severity using validated and sensitive measures.

Method/Design: The Alison Project is spread over two phases: Phase 1 of The Alison Project started in April 2017 and is a 'Proof of Concept' Pilot that examines the study design and procedures as well as preliminary data collected in order to ensure the best measures are used to test for improvements in CTD symptoms and that the study is feasible. Phase 2 will expand recruitment and address the question of whether memantine improves cognition, mood, quality of life and immunological biological inflammatory factors.

Phase 1 of the study was an 8-week double-blind placebo controlled trial of adjunctive memantine was conducted. Sixteen participants received oral placebo while 17 participants received 10mg daily oral memantine for 7 days, with subsequent titration to 20mg daily oral memantine.

Eligibility criteria included men and women aged between 16–65 years, with a diagnosis of BPD according to the Diagnostic Interview for Borderline patients. Primary outcome measures included the Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD) assessed fortnightly. Secondary measures included an adverse effect questionnaire, administered fortnightly to assess adverse events known to be related to memantine use. Phase 2 is currently underway.

Status/Interim Results: According to intention-to-treat, latent growth curve analyses, a significant change in total score of ZAN-BPD symptom severity was observed in the memantine group at 20mg/daily across time, compared to placebo ($p = 0.02$). No adverse events were significantly more frequent among participants receiving active memantine than among those receiving placebo. Memantine at a 20mg daily dose is a well-tolerated drug that can improve BPD symptomatology and may be a promising novel therapeutic for its treatment. Further studies are needed to explore the efficacy of memantine versus placebo, as well as in comparison to other potential treatments for BPD.

Senior Research Staff (continued)

Tibolone Treatment for Depression in Perimenopausal Women

Investigators: Kulkarni J, Gavrilidis E, Thomas N, Hudaib A, Thew C, Worsley R, Gurvich C.

Funding: National Health and Medical Research Council

Duration: 2013–2017

Background: Many women with no past psychiatric history experience severe mood symptoms for the first time in their life during the menopausal transition, with debilitating long-term consequences. Women with a history of depression can experience a relapse or worsening of symptoms during the menopause transition. Traditional antidepressants, SSRIs or SNRIs are commonly prescribed as the first line response. However, such treatment has shown only small improvements with side effects. Hormone therapies directly targeting the perimenopausal fluctuations in reproductive hormonal systems such as tibolone, have significant potential to treat perimenopausal depression.

Aims: Our study investigated the use of adjunctive tibolone, selective tissue estrogenic activity regulator, to treat de-novo or relapsing depression occurring in the perimenopausal period.

Method/Design: Women with perimenopausal depressive symptoms were invited to participate in a double-blind, 12 week randomised control trial with two arms: tibolone (2.5mg oral/day) or oral placebo. Forty-three women met inclusion/exclusion criteria; 22 were randomized to tibolone and 21 were randomized to oral placebo. Symptoms were measured with the 'Montgomery-Asberg Depression Rating Scale' (MADRS) as the primary outcome measure. Latent growth curve analysis was used to assess the MADRS scores change over time.

Status/Interim Results: Participants in the tibolone group demonstrated a significant improvement in depression scores, as compared to the placebo group, without any significant side effects. The use of hormone therapies such as tibolone provide exciting innovations for the treatment of perimenopausal depression. This study has now been completed and published.

National Register of Antipsychotic Medications in Pregnancy

Investigators: Kulkarni J, Gilbert H.

Funding: Janssen

Duration: 2007–2019

Background: It is important to evaluate the safety of antipsychotic medication use during pregnancy, to gain a better understanding of the risk/benefit analysis and to ensure healthy outcomes for mother and baby, however current data on the effect of these medications are limited.

Aims: The National Register of Antipsychotic Medication in Pregnancy (NRAMP), a world-first research project which tracks women who take antipsychotic medication during pregnancy, aims to establish evidence-based medication safety guidelines and encourage women and their clinicians to support robust maternal health and wellbeing, particularly during the child-bearing years.

Method/Design: Information gathered antenatally and postnatally includes maternal demographic, social, medical, psychiatric, medication and obstetric history, fetal/infant development and information on the general health, wellbeing and progress for mother and baby in the first 12 months.

Status/Interim Results: The targeted development of evidence-based clinical guidelines will expand our knowledge, understanding and care plan options for mothers who take antipsychotic medication during pregnancy, and their babies. This includes maternal health and wellbeing, fetal/infant development and outcomes, treatment options, sequelae and follow up, where necessary and the opportunity to gain an improved understanding of these concerns as we provide for healthy mothers, babies, families and communities, both now and in the future.

Senior Research Staff (continued)

PROFESSOR PAUL FITZGERALD

MBBS, FRANZCP, MPM, PhD
Deputy Director MAPrc
Director Therapeutic Brain Stimulation

2017/2018 Staff

Associate Professor, Kate Hoy Deputy Director, Therapeutic Brain Stimulation/Head, Interventional Neuropsychology

Dr Bernadette Fitzgibbon Head, Pain and Affective Neuroscience Unit

Dr Leo Chen Consultant Psychiatrist

Dr Odette Edelstein Consultant Psychiatrist

Dr Richard Thompson Biomedical Engineer and Neuroscience Researcher

Dr Manreena Kaur NHMRC Early Career Research Fellow

Dr Neil Bailey Research Fellow

Dr Robin Cash Research Fellow

Dr Karyn Richardson Research Coordinator

Dr Melanie Emonson Research Coordinator

Dr Aron Hill Postdoctoral Researcher

Dr Sung Wook Chung Postdoctoral Researcher

Dr David Elliot Research Nurse

Ms Linda Pearce Research Nurse

Ms Lenore Wambeek Research Nurse

Ms Sarah Haines Research Assistant

Ms Kirsten Gainsford Research Assistant

Ms Megan Ross Research Assistant

Ms Freya Stockman Research Assistant

Mr Caley Sullivan Research Assistant

Ms Veronika Simic Research Manager

2017/2018 HDR Supervisions Load

Hashemirad, Fahimeh Physiotherapy, Doctor of Philosophy (2017)

Richardson, Karyn E DPsych in Clinical Neuropsychology (2017)

Xianwei Che PhD candidate

Dr Leo Chen PhD candidate

Robert Cooper PhD candidate

Marie-Claire Davis PhD candidate

Aleksandra Miljevic PhD candidate

Sin-Ki Ng PhD candidate

Magelage Perera PhD candidate

Sung W Chung PhD candidate (Completed in 2018)

Melanie Emonson DPsych candidate (Completed in 2018)

Aron Hill PhD candidate (Completed in 2018)

2017 Grants & Awards

- $70,000 from the Australian and New Zealand College of Anaesthetists: A clinical trial to evaluate the antidepressant effects of nitrous oxide in people with major depressive disorder (2018)
- $103,737 from the Weston Foundation: Investigating the efficacy of high-frequency rTMS treatment for Alzheimer's disease (2018)
- $75,000 from Equity trustees: New Approaches for Perimenopausal Depression (2018)
- $100,000 from Equity trustees: A randomized controlled trial of Theta Burst Stimulation for the treatment of cognitive impairment in mild to moderate Alzheimer's disease (2018)
- $77,869 from the National Health & Medical Research Council (NHMRC) Projects: Personalized brain stimulation for treatment of Obsessive-Compulsive Disorders (2018)
- $50,000 from Medibio and the Federal Goverment: Brain-heart connection for magnetic stimulation treatment of depression (2018)

Senior Research Staff (continued)

- $50,000 from the Department of Industry, Innovation and Science (Comm): Exploring the Relationship between Autonomic Arousal and Response to Magnetic Stimulation Treatment for Affective Disorders (2017–2020)
- $117,054 from the National Health & Medical Research Council (NHMRC) Practitioner Fellowships: NHMRC Practitioner Fellowship (2018)
- $242,685 from the National Health & Medical Research Council (NHMRC): Deep Brain Stimulation in the Treatment of Severe Depression (2018)
- $30,656 from the National Health & Medical Research Council (NHMRC) Projects: Ketamine therapy among patients with treatment-resistant depression: a randomsied, double-blind, placebo-controlled trial (2018)
- $49,800 from the Department of Industry, Innovation and Science (Comm): Advancing depression treatment with TMS and NIRS (2017)
- $43,781 from the Weston Foundation: Investigating the efficacy of high-frequency rTMS treatment for Alzheimer's disease (2017)
- $92,020 from the Arthritis Australia: A double-blind placebo-controlled clinical trial of prefrontal theta burst stimulation in fibromyalgia (2017)
- $50,000 from the Department of Industry, Innovation and Science (Comm): Exploring the Relationship between Autonomic Arousal and Response to Magnetic Stimulation Treatment for Affective Disorders (2017)
- $115,438 from the National Health & Medical Research Council (NHMRC) Practitioner Fellowships: NHMRC Practitioner Fellowship (2017)
- $239,335 from the National Health & Medical Research Council (NHMRC) Projects: Deep Brain Stimulation in the Treatment of Severe Depression (2017)

About Paul

I am the Professor of Psychiatry for Epworth Healthcare, the Deputy Director of MAPrc and a NHMRC Practitioner Fellow. I completed my PhD in 2003 after a fellowship at the University of Toronto and specialist training in Psychiatry. I have progressively developed an internationally renowned brain stimulation research group currently with 12 fellows/post doctoral researchers, 3 clinicians, 4 research nurses, 8 research assistants and 10 doctoral students. We are dedicated to the development and testing of novel brain stimulation treatments for psychiatric disorders such as depression, schizophrenia and autism. As an internationally leading brain stimulation researcher I lead a wide range of substantive collaborations with a large network of clinical brain stimulation groups around Australia and collaborate and work with key leaders internationally. My research is directly translational and integrated with clinical practice in both the public and private sectors.

Overview Research Areas and Strategic Goals

My major contribution has been to substantially advance the development of a number of brain stimulation treatments in psychiatry. This has been most prominent with rTMS treatment for depression where I have conducted over 20 substantive clinical trials, authored multiple national and international guidelines and directly developed over 12 clinical programs translating this research in both the public and private sectors. I established the first rTMS training program in the Southern Hemisphere and have trained over 300 clinicians in rTMS methods. I have published over 400 peer reviewed journal articles with over 15,000 citations (H index of 60). I have obtained funding from a range of national and international agencies totaling more than $5,000,000 in the last 5 years.

Featured Projects

Deep Brain Stimulation in the Treatment of Severe Depression

(2012–2018)

Paul B. Fitzgerald, Rebecca Segrave, Karyn E. Richardson, Laura A. Knox, Sally Herring, Zafiris J. Daskalakis, Richard G. Bittar

Background: Studies are increasingly investigating the therapeutic effects of deep brain stimulation (DBS) applied to a variety of brain regions in the treatment of patients with highly treatment refractory depression. Limited research to date has investigated the therapeutic potential of DBS applied to the Bed Nucleus Of Stria Terminalis (BNST).

Aim: The aim of this study was to explore the therapeutic potential of DBS applied to the BNST.

Method: Five patients with highly treatment resistant depression underwent DBS to the BNST in an open label case series design.

Results: BNST DBS resulted in sustained remission of depression in two of the five patients, provided substantial therapeutic improvement two further patients, and had minimal antidepressant effect for the final patient. There were no operative complications and stimulation related side effects were limited and reversible with adjustment of stimulation. However, the time to achieve and complexity of programming required to achieve optimal therapeutic outcomes varied substantially between patients.

Conclusion: DBS applied to the BNST as therapeutic potential in patients with highly refractory depression and warrants exploration in larger clinical studies.

Senior Research Staff (continued)

Accelerated Repetitive Transcranial Magnetic Stimulation in the Treatment Of Depression

Paul B. Fitzgerald, Kate E. Hoy, David Elliot, R. N. Susan McQueen, Lenore E. Wambeek and Zafiris J. Daskalakis

(2013–2017)

Background: Repetitive transcranial magnetic stimulation (rTMS) is increasingly used clinically in the treatment of patients with major depressive disorder (MDD). However, rTMS treatment response can be slow. Early research suggests that accelerated forms of rTMS may be effective but no research has directly evaluated a schedule of accelerated rTMS compared to standard rTMS. To assess the efficacy of accelerated rTMS compared to standard daily rTMS.

Study Aim: To investigate whether accelerated repetitive transcranial magnetic stimulation (rTMS) has efficacy in the treatment of patients with major depressive disorder.

Methods: This study was a parallel design two arm single blind randomized controlled trial with randomization to accelerated or standard rTMS treatment schedule. Randomization occurred through the use of a single random number sequence. The clinician administering treatment was aware of the treatment group and the patient was aware of the treatment schedule. Symptom raters were blind to group. Patients were frequently counseled to avoid mentioning any information that would reveal the treatment schedule to the raters.

One hundred and nineteen patients were recruited and consented. Two subjects withdrew during the baseline assessment process, prior to randomization, and treatment. Two subjects were randomized but withdrew prior to commencing treatment (one due to obtaining new employment, one due to physical illness).

Therefore, 115 patients (66 female/49 male, mean age = 49.0 ± 13.8 years) entered treatment and are included in the analysis. Of these, 111 completed baseline and at least week 4 assessments. There were four withdrawals, three in the accelerated treatment group, two due to treatment discomfort, one due to worsening of migraine and one (failure of efficacy) in the standard group. There were no differences in the baseline severity of scores on any of the rating scales or in any demographic or clinical variables between the groups.

Results: The results of this study suggest that rTMS treatment for depression can be successfully provided in an accelerated treatment format. The schedule that we used, with treatment on three, 2 and 1 day per week across three weeks, produced antidepressant effects that were similar to, if not equivalent to those seen with a standard four-week course of rTMS. Accelerated rTMS was associated with a higher rate of treatment discomfort but still resulted in a low overall discontinuation rate. A definitive multisite trial is justified to demonstrate whether this form of treatment could be adopted more widely in clinical practice.

Accelerated Theta Burst Transcranial Magnetic Stimulation in the Treatment of Depression

(2016–2018)

Paul B. Fitzgerald, Leo Chen, Karyn Richardson, Zafiris Daskalakis, Kate Hoy

Background: Accelerated forms of repetitive transcranial magnetic stimulation (rTMS) are increasingly being explored for their potential to produce more efficient and rapid treatment benefits in major depressive disorder (MDD). However, accelerated protocols using standard forms of rTMS are still quite time-consuming to apply.

Theta burst stimulation (TBS) is a novel form of magnetic stimulation with the potential to produce similar anti-depressant effects but in a much-abbreviated period of time.

Aim: The aim of this study was to investigate the comparative efficacy of an accelerated TBS protocol compared to standard rTMS treatment.

Methods: 74 outpatients (36 female, mean age 44.36 ± 12.1 years) with MDD received either accelerated TBS (3 intermittent TBS treatments per day for 3 days in week 1, 3 treatments a day for 2 days in week 2, and 3 treatments in 1 day in week 3 and in week 4, or standard rTMS (5 daily sessions per week for 4 weeks) following randomization. Patients were assessed weekly throughout the treatment course, and at 4 weeks after treatment end.

Results: There were no significant differences in the degree of reduction in depressive symptoms, the rate of reduction in depressive symptoms, remission or response rates ($p>0.05$ for all analyses) between the accelerated TBS and standard rTMS treatment groups. There was no difference in rates of side effects, no serious adverse events and no alterations in cognitive performance.

Conclusion: Accelerated TBS appears to have similar efficacy to standard rTMS but does not produce more rapid clinical benefits.

Senior Research Staff (continued)

Associate Professor Kate Hoy

BBNSc (Hons), DPsych (Clin Neuro)
Head, Interventional Neuropsychology
Deputy Director, Therapeutic Brain Stimulation Division

2017/2018 Staff

Dr Melanie Emonson
Research Co-ordinator

Ms Freya Stockman
Research Assistant

Ms Caitlyn Rogers
Research Assistant

Ms Kirsten Gainsford
Research Assistant

Ms Hannah Coyle Research Assistant

Mr Aron Hill Research Assistant

2017/2018 Students

Marie-Claire Davis
(PhD), Main Supervisor

Andrea Marcu (PhD), Main Supervisor

Aron Hill (PhD), Main Supervisor

Melanie Emonson
(DPsych), Main Supervisor

Hannah Coyle
(DPsych), Main Supervisor

Karyn Richardson
(DPsych), Joint Main Supervisor

Oscar Murphy
(DPsych), Associate Supervisor

Sung Wook Chung
(PhD), Associate Supervisor

Robert Cooper
(PhD), Associate Supervisor

Leo Chen (PhD), Associate Supervisor

Grants & Awards

- $723,104 NHMRC Boosting Dementia Research Leadership Fellowship 'Development of novel therapeutics for dementia'
- $100,000 Mason Foundation National Medical Program Grant 'A randomized controlled trial of Theta Burst Stimulation for the treatment of cognitive impairment in mild to moderate Alzheimer's disease'
- Winner of the 2017 Victorian Telstra Business Women's Award: Academia and Public Sector Category

2017/2018 selected presentations

- Keynote Speaker, 3rd European Conference on Brain Stimulation in Psychiatry, Lyon, France. *Interventional Neuropsychology and Beyond: The expanding role of Therapeutic Brain Stimulation in Psychiatry.* Oct, 2018
- Invited Speaker, Women in Leadership Summit, Melbourne, December 2018

About Kate

Associate Professor Kate Hoy is a Clinical Neuropsychologist with 15 years' experience in applied brain stimulation research. Following her doctorate Kate worked as a Clinical Neuropsychologist conducting cognitive assessments of patients with psychiatric and neurological illnesses. During this time she became increasingly frustrated with the lack of effective treatments for the patients she saw, particularly for those dealing with the devastating consequences of dementia. It was this experience that inspired her to work in research full time in order to develop the treatments she saw were lacking for her patients. Kate is now considered an emerging leader in clinical research, having been awarded three sequential NHMRC Fellowships, an NHMRC excellence award and a 2017 Victorian Telstra Business Women's Award.

Kate is also a passionate science advocate, particularly around issues of diversity, equity and career sustainability. She is a former Deputy Chair of the Australian Academy of Science's EMCR forum and has been a returning mentor in the New York Academy of Science's Global STEM Alliance initiative: 1000girls, 1000futures. Kate initiated, and maintains, the women in brainstim database site aimed at addressing the extreme gender imbalances at international brain stimulation conferences and she is on the Australian Academy of Sciences steering committee for the federal government funded STEM Women initiative.

Senior Research Staff (continued)

Overview Research Areas and Strategic Goals

Kate is pioneering the new field of Interventional Neuropsychology. Her research program is focused on the development of novel biological treatments for cognitive disorders. She conducts clinical trials aimed at improving cognition in Alzheimer's and schizophrenia, as well preventing dementia in people with mild cognitive impairment. Kate's team is also currently investigating novel therapeutics targets for cognitive impairment in head injury, Huntington's disease and attention deficit hyperactivity disorder, as well as exploring ways in which to optimize efficacy of prefrontal brain stimulation techniques.

Kate's research uses numerous brain stimulation techniques, including Theta-Burst Stimulation (TBS), transcranial Direct Current Stimulation (tDCS), transcranial Alternating Current Stimulation (tACS), transcranial Random Noise Stimulation (tRNS), Transcranial Magnetic Stimulation (TMS), and Magnetic Seizure Therapy (MST).

Featured Projects

A randomized controlled trial of Theta Burst Stimulation for the treatment of cognitive impairment in mild to moderate Alzheimer's disease

Investigators: A/Prof Kate Hoy, Dr Melanie Emonson, Prof Paul Fitzgerald

Funding: NHMRC, Mason Foundation, Monash University, State Trustees

Duration: 2016–2019

Background: Alzheimer's disease (AD) is the most common type of dementia and is characterised by progressive decline in cognitive functioning. Although there are some approved medications for AD, these provide only limited symptomatic benefit without slowing the disease progress. Alternative, or complementary, treatment approaches are needed. Recent research has indicated that AD appears to target specific large-scale distributed, function-critical neural networks. Indeed, the progressive cognitive decline seen in AD has been suggested to be, in part, a result of decreased functional connectivity throughout what is known as the default mode network (DMN), a brain network whose anatomy closely mirrors the pattern of amyloid accumulation and atrophy seen in AD patients. Therefore, a treatment which is able to specifically target the DMN network in order to enhance connectivity, could result in a highly effective therapy for the cognitive impairments in AD. Non-invasive brain stimulation (NIBS) techniques have considerable promise in this regard. NIBS has been shown, to modulate activation throughout large scale cortical networks (such as the DMN), to enhance cognition in a number of disorders and to produce long lasting behavioural effects. In particular, Theta Burst Stimulation (TBS) is a highly effective form of NIBS which allow for multi-site stimulation within a single treatment session. Therefore, we propose to conduct the first ever double-blind placebo-controlled randomised trial of TBS for the treatment of mild to moderate AD.

Aims: The objective of this Phase II trial will be to provide essential information on efficacy, mechanism of action, tolerability and safety, thus providing the basis for the subsequent conduct of a definitive Phase III evaluation

Method/Design: A double-blind placebo-controlled clinical trial comparing a treatment course of active TBS to sham TBS consisting of 21 daily treatment sessions over six weeks. In each treatment session TBS will be sequentially provided to four brain regions, the left and right dorsolateral prefrontal cortex (lDLPFC, rDLPFC) and the left and right posterior parietal cortex (lPPC, rPPC). In addition to clinical outcomes, in order to interrogate our theoretical model, we will assess the impact of TBS on network activity.

Status: Trial currently recruiting

Stimulating Change: A longitudinal investigation and clinical trial of brain stimulation in Mild Cognitive Impairment

Investigators: A/Prof Kate Hoy, Dr Caroline Gurvich, Dr Bernadette Fitzgibbon, Dr Neil Bailey, Dr Natalie Thomas, Dr Melanie Emonson, Prof Paul Fitzgerald

Funding: NHMRC

Duration: 2017–2025

Background: There are currently no effective treatments or preventative approaches for dementia which is predicted to become a global epidemic by 2050. Between 2002 and 2012 there were 413 drug trials in Alzheimer's (the most common form of dementia), these trials had a failure rate of 99.6%. There has also been a number of recent failures of anti-amyloid medications, casting doubt on what was considered to be one of the most promising new medication avenues, and most recently drug companies have withdrawn from development in the area (i.e. Pfizer in 2018). It is essential that novel avenues for dementia prevention and treatment are pursued. A truly innovative approach is required.

Senior Research Staff (continued)

Stimulating Change is an ambitious research program which aims to generate a new understanding of the both the factors which lead to dementia, and those that prevent further decline, in high risk groups (i.e. Mild Cognitive Impairment [MCI]). The program also aims to develop a novel non-medication biological therapeutic for dementia prevention.

Aims: Specifically, the project aims are to:

- Conduct a comprehensive longitudinal investigation of the biopsychosocial factors underlying changes in brain function and cognitive performance in people with MCI, and
- Investigate the efficacy of at-home brain stimulation for the treatment of MCI and prevention of dementia

Method/Design: A double-blind placebo-controlled longitudinal clinical trial comparing yearly courses of active gamma-tACS to sham gamma-tACS in 100 people with mild cognitive impairment.

Status: Trial currently recruiting

A TMS-EEG study of Cognitive Impairment in Schizophrenia: Effects of a short course of tDCS

Investigators: A/Prof Kate Hoy

Funding: NHMRC

Duration: 2015–2018

Background: Cognitive impairments are a core feature of a number of neurological and psychiatric conditions and can have devastating impacts on daily functioning. In SCZ they are highly prevalent, occurring in greater than 80% of patients. The main areas affected are attention, working memory and executive function. These impairments have been shown to result in more functional disability than positive or 'psychotic symptoms' (e.g., auditory hallucinations). There is wide acknowledgement that the current therapeutic approach to the cognitive symptoms of SCZ is insufficient. Traditional treatment approaches, namely medication and cognitive training, are limited in their effectiveness and do not target what is known regarding the underlying neurobiology of cognitive dysfunction. There are now several lines of evidence suggesting that the cognitive deficits in SCZ are due to dysfunctional connectivity throughout cognition relevant neural networks, particularly within fronto-parietal networks. This dysfunctional connectivity is thought to result from impairments in neuroplasticity.

Neuroplasticity refers to the brain's ability to change its structure and function in response to the external environment and is considered to be a critical mechanism underlying successful cognitive functioning. One neuroplastic process thought to be particularly crucial for cognition is Long Term Potentiation (LTP), referring to long lasting increases in the strength of communication throughout neural networks in response to patterns of neural firing.

LTP has been shown to be involved in multiple cognitive processes throughout the brain including within the dorsolateral prefrontal cortex (DLPFC); an area of the brain extensively implicated in attention, working memory and executive function. While a number of studies have indeed shown SCZ to be associated with impairments in LTP, these have been predominately in the motor cortex and to date LTP has not been investigated in the DLPFC in-vivo with respect to cognitive function. Existing clinical research on the neurobiology of cognitive deficits in SCZ has predominately only focussed on assessments of functional connectivity. This will be the first comprehensive multimodal investigation of the neurobiology underlying impaired cognition in SCZ.

Aims: To investigate the neurobiology underlying impairment cognition in schizophrenia and to study the effects of a short course of tDCS on both biology and behaviour.

Method/Design: 30 patients with schizophrenia and 30 healthy controls will undergo a comprehensive behavioural and biological assessment, including clinical and cognitive interviews, TMS-EEG and EEG assessment. Patients with schizophrenia will then undergo a double-blind, random, placebo-controlled clinical trial of 5 anodal tDCS sessions to the DLPFC, with behavioural and biological assessments repeated following the short tDCS treatment course.

Status: Study is complete, and data is currently being analysed.

Senior Research Staff (continued)

Dr Bernadette Fitzgibbon

B.A (Hons), MSc, PhD

Senior Research Fellow & Head, Pain and Affective Neuroscience Unit, Therapeutic Brain Stimulation

2017/2018 Staff

Ms Laura Knox Research Assistant

Ms Freya Stockman Research Assistant

2017/2018 Students

Ms Sin-Ki Ng PhD Candidate

Understanding the role of negative beliefs and emotion regulation in chronic low back pain

Mr Xianwei Che PhD Candidate

Examining the role and neurophysiological mechanisms of social support in pain experience

Mr Gregory Roebuck Medical Degree Research Project

Ultra-Marathon Runners: A psychological and physiological profile

Mr Nihal Nayak BMedSci Honours

Exploring pain tolerance following Transcranial Direct Current Stimulation: impact of pain-related cognitions and personality

2017/2018 Grants & Awards

- $92,020 from The Mason Foundation for the project "A double-blind placebo-controlled clinical trial of prefrontal theta burst stimulation in fibromyalgia", 2017
- Monash Advancing Women's Research Success Grant, 2017
- Faculty Medicine, Nursing and Health Sciences Gender Equity Support Travel Grant, 2017
- Australasian Brain Stimulation Society ECR Award, 2018
- Australasian Neuroscience Society Carer Grant, 2018
- Central Clinical School Travel Grant, 2018

About Bernadette

Dr Bernadette Fitzgibbon is a Senior Research Fellow at Monash University where she holds a National Health and Medical Research Early Career Fellowship. She is the head of the Pain and Affective Neuroscience Unit within the Therapeutic Brain Stimulation division of MAPrc. She has received several awards for her research including the 2018 Australasian Brain Stimulation Society Early Career Research Award, the national 2014 Bethlehem Griffiths Research Foundation Young Investigator of the Year award, a 2014 Young Tall Poppy Science Award through the Australian Institute of Policy and Science and in 2018 was selected for the Veski inspiring women in STEM side-by-side program.

Bernadette is also the elected chair of Australian Brain Alliance EMCR Brain Science Network and an Executive Member of the Australian Brain Alliance, an initiative of the Australian Academy of Science to bring together strategic brain research across Australia.

Overview Research Areas and Strategic Goals

Bernadette's research program aims to better understand the mechanisms underpinning how pain can become chronic as well as novel non-invasive brain stimulation therapeutics to treat persistent pain. Her work is driven by the integration of psychosocial and biological processes linked to the development and maintenance of pain which are integrated into her application of brain stimulation approaches.

Bernadette's research uses a range of techniques, including Theta-Burst Stimulation (TBS), Transcranial Magnetic Stimulation (TMS), transcranial Direct Current Stimulation (tDCS), transcranial Alternating Current Stimulation (tACS), electroencephalogram (EEG), concurrent TMS-EEG, Magnetic Resonance Imaging (MRI), Electrocardiography (ECG), Galvanic Skin Resistance (GSR) as well as the use of novel at-home brain stimulation adjunctive with psychological therapies.

Senior Research Staff (continued)

Featured Projects

A double-blind placebo-controlled clinical trial of prefrontal theta burst stimulation in fibromyalgia

Fitzgibbon, B.M., Hoy, K.E., Guymer, E., Littlejohn, G., Fitzgerald, P.B.

Funding: The Mason Foundation

Duration: 2017–2019

Background: Fibromyalgia is a complex chronic disorder defined by widespread musculoskeletal pain and muscle tenderness, and is associated with a multitude of co-occurring health issues including fatigue. One promising new treatment option is Theta Burst Stimulation (TBS); a technique that changes the activity of neurons in the brain. The proposed study aims to conduct a randomized, double-blind, sham-controlled proof of principle trial to establish the efficacy of TBS treatment in fibromyalgia. If successful, this study will provide evidence for a new treatment option for fibromyalgia that is likely applicable to related disorders such as Chronic Fatigue Syndrome.

Aims: This study aims to conduct a double-blind, randomized, sham-controlled proof of principle superiority trial of Theta Burst Stimulation (TBS) treatment in fibromyalgia.

Method/Design: This is a randomised sham-controlled trial study, in which 52 participants with a diagnosis of fibromyalgia will be recruited. Participants will be randomised into one of two conditions: (1) Active TBS condition and (2) Sham (or 'placebo') TBS condition. Participants will have two weeks of twice daily stimulation followed by a tapered two-week dose of twice daily treatments on Monday, Wednesday and Friday only. Participants will be asked to a number of self-report questionnaires at baseline, at the end of each treatment week (weeks 1–4) and at the 1 month follow up appointment, as well as will undergo the collection of neurobiological data (TMS-EEG) at baseline, end of week 4 and follow-up.

Status/Interim Results: In a preliminary analysis of 23 participants, we observed a significant improvement in a measure of fatigue (motivation) from baseline to the end of treatment in the active group compared to the sham treatment group. While no group difference was observed for pain, a significant reduction was seen in somatosensory gamma-band power (implicated in pain processing) in the active group compared to sham group, and increased fronto-central-parietal theta connectivity in the active group only. Together, these preliminary results suggest a 4-week left DLPFC TBS treatment to have a trending impact on FMS symptoms as well a significant effect on brain function.

2017/2018 selected presentations

Invited Oral Presentations

1. Fitzgibbon, B.M. *Beyond nociception: Using non-invasive neuromodulation to treat pain.* Australasian Brain Stimulation Society.
2. Fitzgibbon, B.M. *Non-invasive brain stimulation and the pain experience: harnessing the variability.* The Carolina Neurostimulation Conference, The University of North Carolina at Chapel Hill May 21–23, 2018.
3. Fitzgibbon, B.M. *Non-invasive brain stimulation and the pain experience: from neurobiology to the clinic.* Faculty of pain medicine Annual scientific meeting and pain refresher day, Australian and New Zealand College of Anaesthetists, May 2017.

Selected Refereed Symposium Presentations

1. Fitzgibbon, B.M. *Loneliness as an emerging treatment target within innovative social interventions: current issues and implications.* The World Psychiatric Association's Thematic Congress, Innovation in Psychiatry: Effective Interventions for Health and Society, Melbourne Australia, 25–28 February 2018.

Selected Refereed Conference Oral Presentations

1. Fitzgibbon, B.M. *Theta burst stimulation to the dorsolateral prefrontal cortex in fibromyalgia syndrome: preliminary findings of a randomised-controlled trial.* Australian Neuroscience Society, Brisbane, December 2018.
2. Fitzgibbon, B.M. *Neural Oscillatory Change following Theta Burst Stimulation to the Dorsolateral Prefrontal Cortex in Fibromyalgia Syndrome.* Australasian Cognitive Neuroscience Society, Melbourne, November 2018.
3. Fitzgibbon, B.M. *Improved fatigue in fibromyalgia following dorsolateral prefrontal cortex repetitive transcranial magnetic stimulation: a randomised-controlled trial.* Australian Pain Society's 38th Annual Scientific Meeting, (April 2018), Sydney, Australia.
4. Fitzgibbon, B.M. *Greater pain tolerance associated with pain related cognition in ultra-runners.* Australian Pain Society's 37th Annual Scientific Meeting, (April 2017), Adelaide, Australia.

Selected Science Outreach/ Communication

- Chair of a public forum titled "Unlocking the Code to the Brain: Australia can Hold the Key". Questacon and Parliamentary Friends of Science (Parliament House), organised by Science & Technology Australia and the Australian Academy of science. March 2018.
- Guest Speaker, Australian Neuroscience Society ECR Networking Event, Brisbane 2018
- 774 ABC – Red Symons, Ultra Runners
- Why ultramarathoners don't feel pain – and what they can teach the rest of us. Sydney Morning Herald, The Age. 7th April, 2017.

Senior Research Staff (continued)

Dr Caroline Gurvich

B.A/B.Sc (Hons), D.Psych, MAPS, FCCN

Deputy Director Women's Mental Health Division

Head, Cognitive Neuroscience Unit

2017/2018 Staff

Dr Natalie Thomas Research Fellow, Women's Mental Health

2017/2018 Students/ Volunteers

Ms Elizabeth Thomas
PhD Candidate

The influence of the glutamatergic system on cognition across the schizotypy/schizophrenia continuum

Ms Jacqueline Riddiford
PhD Candidate

Investigating ocular-motor correlates of abnormal mirror system functioning in autism

Ms Heather Gilbert PhD Candidate

Development of a New Model of Support and Advocacy for Pregnant Women & New Mothers with severe mental illness

Mr Phillip Law PhD Candidate

Investigating binocular rivalry in healthy individuals and bipolar disorder: excluding confounds and optimising methods for large-scale endophenotype studies

Mr Sean Carruthers (Swinburne University) PhD Candidate

Executive functioning and the muscarinic system in schizophrenia

Mr Joshua Kontrabarsky
BMedSci Hons 2017

Exploring antisaccades in schizophrenia: a dopaminergic candidate gene study

Ms Jacinta Cheng
BMedSci Hons 2017

The Effect of Early Life Trauma on Cognition and Emotion Regulation in Complex Trauma Disorder

Ms Jana Grieger
BPsych Hons 2018

Psychological Trauma Type and Timing of Exposure: Effects on Emotion Regulation Difficulties

Ms Caitlin Bleeker
BPsych Hons 2018

The impact of early life trauma type on inhibitory control during perimenopause

Mr Sai Ponnaganti
BMedSci Hons 2018

How does age of trauma exposure influence the relationship between early life adversity and dissociation

Mr Siddarth Narambarath
BSci Hons 2018

Cognitive Control in Borderline Personality Disorder

Ms Paige Gray
Summer Scholarship research placement 2018

Summer scholarship to assist with data entry, ethics application and eye movement analysis

Mr Arune Suganthirakumar
volunteer (BBioMed Sci student)

Volunteering to assist with eye movement analysis

2017/2018 Grants & Awards

- Senior Bridging Fellowship, Monash University (2018)
- Central Clinical School Travel Award (2017)
- Monash University Advancing Women in Research Award (2018)
- Stanley Medical Research Institute for the project titled 'Bazadoxefine – A New Selective Estrogen Receptor Modulator Treatment for people with schizophrenia; $683,748; co-investigator (2018–2021)
- Department of Health and Human Services – Mental Health Complaints Commissioner Analysis of Complaint data for Sexual Safety in Inpatient Units (2017) $13,065; co-investigator.
- Equity Trustees for the project 'New Approaches for perimenopausal depression' (2018–2021) $90,000; co-investigator

Senior Research Staff (continued)

- Swiss Anorexia Nervosa Foundation for the project titled 'Transcranial Direct Current Stimulation (tDCS) for Anorexia Nervosa (2018–2019) $74, 862; co-investigator.
- The Trustees of The Alison Wolinski Foundation for the establishment and support of The Alison Project $312000; co-investigator (2017–2022)

About Caroline

Dr Caroline Gurvich is a Senior Research Fellow and a clinical neuropsychologist. She is the Deputy Director of the Women's Mental Health Division at MAPrc and Head of the "Cognitive Neuroscience Unit".

She has received several awards and grants, including an NHMRC early career training fellowship, co-CI positions on NHMRC project grants, as well as institutional support (including Advancing Women in Research awards and a Monash University Senior Bridging Fellowship). Caroline has >60 peer reviewed publications that include investigative studies, clinical trials and theoretical reviews, with publications in top ranking psychiatry and neuroscience journals, as well as policy related work and broader science communication (e.g. The Conversation). She has also established biodatabanks to further explore biological contributors to cognitive impairments in mental illness. Caroline has a strong history of successful student supervision and mentorship as well as discipline related leadership (e.g. she was Victoria State Editor of the Australian Psychological Society newsletter (2013/14).

Caroline is also passionate about advocating for equity and diversity in STEM. Since 2015, Caroline has been an active member of the Monash Self-Assessment Team for the SAGE Athena Swan Charter, and has chaired the working group exploring 'flexible working and career breaks'. In 2018, Monash University was successfully achieved an inaugural Athena SWAN Bronze award. In 2018, Caroline was appointed Chair of the Central Clinical School Gender Equity, Diversity and Inclusion committee.

Overview Research Areas and Strategic Goals

Caroline's research aims to better understand biological and environmental contributors to cognitive health and cognitive impairment across a range of disorders in psychiatry. She is particularly interested in the role of sex hormones, stress hormones and genes in cognitive functioning. Caroline combines neuropsychological assessments with eye movement research to clearly characterise cognition. She collaborates widely to enable a range of biological mechanisms to be explored – including investigation of genes and epigenetic effects; sex hormones and stress hormones. She works across a range of disorders including schizophrenia, complex trauma disorders, perimenopausal depression and Alzheimer's disease with a focus on women's mental health.

Featured Projects

Too stressed to think clearly? Genetics, early life trauma and the relationship between stress and cognition

Investigators: Dr Caroline Gurvich (MAPrc); Dr Kiymet Bozaoglu (Murdoch Children's Research Institute, previously at Baker IDI); Prof Susan Rossell (Swinburne University). Associate investigators: Ms Elizabeth Thomas (MAPrc); Prof Marco Romano-Silva (Federal University of Minas Gerais, Brazil)

Funding: AMREP Collaborative Seed Grant; Platform access grant (Monash); Barbara Dicker Foundation

Duration: 2016–2019

Brief description: Early life adversity and significant or uncontrollable stress can have a significant adverse impact on higher order cognitive functions and can drive the development and exacerbation of mental illness. The overall objective of this study is to better understand how different stress parameters influence cognition, with a focus on memory and higher order cognitive functions. A secondary objective is to explore the biological and psychological factors that contribute to the resilience some people have when exposed to stressful events, for example through exploration of coping strategies. The overall findings from this study will help drive larger studies in clinical populations and ultimately lead to clinical trials that can implement interventions to help reduce stress and the associated adverse effects on cognition and mental illness.

Current status: Data collection is complete and incudes 61 healthy adults aged between 18 and 45 who were assessed during 2016 and 2017. Two honours students used data from this project to complete their honours theses and manuscript preparation is now underway.

Senior Research Staff (continued)

Genes and cognition in schizophrenia

Investigators: Dr Caroline Gurvich (MAPrc); Prof Susan Rossell (Swinburne University). Associate investigator: Dr Kiymet Bozaoglu (Murdoch Children's Research Institute, previously at Baker IDI). Student investigators: Ms Elizabeth Thomas (PhD candidate, MAPrc); Mr Sean Carruthers (PhD candidate, Swinburne); Mr Joshua Kontrabarsky (BMedSci Hons, MAPrc).

Funding: NHMRC Early Career Fellowship (awarded 2009–2016); Barbara Dicker Foundation (2017)

Duration: 2009–2018

Brief description: This project explored the role of genetic variation in cognitive performance in individuals with schizophrenia-spectrum disorders. In collaboration with Prof Rossell, a biodatabank was established to explore how genes and gene X environment interactions contribute to cognitive difficulties in people with schizophrenia related disorders.

Current status: This project and student projects linked to this project have built up a large bio-databank of approximately 500 individuals. Several manuscripts have been published exploring different genes and their role in cognitive processes and further manuscripts are under review or in preparation.

Sex hormones and cognition in schizophrenia

Investigators: Dr Caroline Gurvich (MAPrc); Prof Jayashri Kulkarni; Dr Natalie Thomas; Ms Emmy Gavrilidis; Dr Abdul-Rahman Hudaib; Dr Roisin Worsley.

Funding: NHMRC Project grant (Co-CI, awarded 2011–2013)

Duration: 2011–2018

Brief description: In collaboration with Prof Kulkarni this project uses baseline data and randomised clinical trial data to understand the role of reproductive hormones (such as estrogen, progesterone, luteinising hormone) and reproductive status (such as menstrual cycle regularity vs. irregularity and menopause status) on cognitive functioning in women with schizophrenia. The project also explored the role of menopause status in the efficacy of hormone treatment on cognitive impairment in women with schizophrenia (specifically looking at whether a 'selective estrogen receptor modulator' called raloxifene can improve cognition)

Current status: This project is complete and findings are published with further findings under review.

Senior Research Staff (continued)

Dr Manreena Kaur

BSc Hons, PhD
NHMRC Early Career Fellow
Therapeutic Brain Stimulation Division

Staff

Ms Megan Ross
Research Assistant, Therapeutic Brain Stimulation Division

Students/Volunteers

Ms Jessica Michael
Honours Candidate

Adapting Neuro-cardiac-guided Repetitive Transcranial Magnetic Stimulation for Low Frequency Treatment for Depression

Ms Sharmini Kunjan
Winter Scholarship Studentship and Volunteer

Investigating Attitudes Towards Repetitive Transcranial Magnetic Stimulation Treatment for Depression

2017 Grants & Awards

- $89,584 NARSAD Young Investigator Grant, Brain and Behaviour Foundation 'Towards Personalised Medicine: Individualised fMRI targeting of rTMS treatment for auditory hallucinations'
- $10,000 Platform Access Grant, Monash University 'Towards Personalised Medicine: Individualised fMRI targeting of rTMS treatment for auditory hallucinations'

About Manreena

Dr Manreena Kaur received her PhD at the University of Sydney in 2014 and joined MAPrc in 2016. Prior to joining MAPrc, Manreena's research focused on youth mental illness, in particular, mood and psychotic disorders and utilised psychophysiology, neuropsychology and magnetic resonance imaging. As a postdoc over the last 4 years, Manreena has extended her expertise in mental illness research by focusing on non-invasive brain stimulation treatments.

Her work has been supported by the National Health and Medical Research Council Fellow (NHMRC) through the award of an Early Career Fellowship and during her PhD, a NHMRC Postgraduate Scholarship. Manreena has attracted additional funding through the prestigious NARSAD Young Investigator Award and the Society for Mental Health Research-Medibank Early Career Award (1 of only 13 in Australasia).

A key passion for Manreena is in gender equality in academic science which she has advocated through, for example, a Women in STEMM podcast interview. Manreena has played an active role in supporting research activities within MAPrc as a member of the EMCR committee, Honours and Higher Degree Research student intake co-coordinator and as a manager of the neurophysiology laboratories (2017). Externally, Manreena contributes to the broader research community by serving as a Member of the Australasian Brain Stimulation Society and Society for Mental Health Research (SMHR) as well as Member of the SMHR 2018 Conference Scientific Committee.

Overview Research Areas and Strategic Goals

Manreena's research focus is on investigating non-invasive brain stimulation treatments for mood and psychotic disorders, particularly as personalised approaches and early interventions. For her research, Manreena utilises psychophysiology and imaging techniques to evaluate brain stimulation treatments and to optimise individual response to these treatments. Manreena's work includes the conduct of experimental and clinical trials on repetitive transcranial magnetic stimulation (rTMS), continuous Theta Burst Stimulation (cTBS) and transcranial alternating current stimulation (tACS).

Senior Research Staff (continued)

Featured Projects

Exploring the Relationship between Autonomic Arousal and Response to Magnetic Stimulation Treatments for Depression

Investigators: Prof Paul Fitzgerald, Dr Manreena Kaur, Ms Megan Ross

Funding: Medibio Ltd, Department of Industry, Innovation and Science

Duration: 2016–2019

Background: Depressive disorders are among the most common forms of mental illness in Australia, with a prevalence rate of approximately 6% of the population. Depression is a chronic illness and often affects individuals for a large part of their lives. The associated economic burden of illness is high and the World Health Organisation has ranked depression as the single leading cause of disability globally. First line treatment options for depression are helpful for many patients but a significant portion of patients show inadequate response and acquire treatment resistance. Over the last two decades, clinical trials have established that repetitive transcranial magnetic stimulation (rTMS) is an efficacious for treatment resistant depression, leading to the approval of this treatment by several regulatory bodies worldwide. However, a subgroup of patients do not respond. Efforts are now focusing on elucidating features of patients that have utility in predicting response and understanding the therapeutic mechanism of rTMS in order to personalise treatment selection and reduce the burden of non-response on individuals and services. Such research have largely utilised imaging and EEG, however, measures of the autonomic nervous system (ANS) have been understudied despite being strongly linked to depression. The current study is the first comprehensive evaluation of ANS measures in understanding rTMS treatment mechanisms and predicting response.

Aims: To investigate the effect of rTMS on ANS measures in patients with depression and, to determine the utility of these measures in distinguishing response to rTMS treatment.

Method/Design: This is an observational study in collaboration with Medibio Ltd. Participants will be monitored over 24 hours at three time points around a rTMS treatment schedule (i.e. pre-treatment, mid-treatment and post-treatment, as below). Changes in ANS variables will be assessed over time and associations between the ANS and response to treatment will be evaluated.

Status: Current recruiting the last 10 participants for the total sample of n=60.

Investigating Neuro-cardio-guided rTMS for the Treatment of Depression

Investigators: Dr Manreena Kaur, Prof Paul Fitzgerald, A/Prof Kate Hoy, Dr Bernadette Fitzgibbon, Ms Jessica Michael, Ms Sharmini Kunjan

Funding: Medibio Ltd, Department of Industry, Innovation and Science

Duration: 2016–2019

Background: One approach for optimising repetitive transcranial magnetic stimulation (rTMS) treatment protocols is individualised targeting of the brain region of interest for rTMS for depression, the dorso-lateral prefrontal cortex (DLPFC). Most studies that have implemented individualised targeting have anatomical or structurally localised the DLPFC. This approach is limited as it does not consider whether the same anatomical region is the functionally optimum region for each individual. DLPFC to subgenual anterior cingulate cortex functional connectivity has been recently shown to play a key role in the therapeutic mechanism of rTMS. The vagus nerve connects the heart to brain structures, the DLPFC and the subgenual anterior cingulate cortex, that are disrupted in depression. A substantial portion of the autonomic nervous system is located in the cranium where parasympathetic and sympathetic output is generated (modulating key functions such as blood pressure and heart rate). Neuro-cardiac guided rTMS has recently been developed and shown that individualised targeting of a brain region for rTMS can be chosen based on heart rate changes due to the connectivity of the vagal nerve. Specifically, the site of the DLPFC where deceleration of heart rate with high-frequency rTMS is observed varies across individuals and this site is postulated to be the functionally optimal location for magnetic stimulation for each individual. The validity of this method has not been evaluated for low-frequency rTMS commonly used for depression or the newer, more time efficient type of rTMS, intermittent theta burst stimulation.

Aims: To i) replicate the utility of neuro-cardio-guiding using high-frequency rTMS for determining individual site of stimulation; and, ii) evaluate low-frequency and iTBS protocols for neuro-cardiac-guiding.

Method/Design: Healthy and depressed participants will be recruited into this study. The neuro-cardio-guided rTMS session will involve low-frequency rTMS, high-frequency rTMS and iTBS protocols whilst ECG is concurrently recorded. Heart rate deceleration will be evaluated at frontal, fronto-central and central sites for each individual for each stimulation type.

Status: Currently recruiting.

Senior Research Staff (continued)

A Trial of Targeted Continuous Theta Burst Stimulation in the Treatment of Auditory Hallucinations

Investigators: Dr Manreena Kaur, Prof Paul Fitzgerald, A/Prof Kate Hoy, Prof Alex Fornito, A/Prof Jerome Maller

Funding: NHMRC, Brain and Behaviour Foundation, Monash University

Duration: 2016–2019

Background: A series of clinical studies on the therapeutic potential of repetitive transcranial magnetic stimulation (rTMS) have progressively established that rTMS may have a role in the treatment of persistent auditory hallucinations. However, the overall response rate to rTMS treatment for these symptoms is quite limited. It is possible that this limitation, at least in part, relates to problems with the targeting of relevant brain regions with the methods used in previous treatment trials. An improvement in response with magnetic stimulation treatments for auditory hallucinations may be achievable with an improvement in localisation of functionally relevant brain regions. Another significant limitation is that a standard rTMS treatment protocol is very time intensive. Emerging research has demonstrated that a type of rTMS, continuous theta burst stimulation (cTBS), is much less time intensive and produces similar clinical benefits to standard rTMS, particularly in the depression literature.

To date, cTBS for auditory hallucinations has not been well investigated. Therefore, in the proposed research we will aim to improve the application of cTBS treatment for auditory hallucinations using neuro-navigational methods combined with an individually-tailored diffusion tensor imaging (DTI) targeting protocol to more precisely pinpoint optimised stimulation sites based upon pre-treatment characterization of key white matter tracts.

Aims: To compare response to DTI based neuro-navigationally targeted cTBS to standard neuro-navigationally targeted cTBS for the treatment of auditory hallucinations in patients with schizophrenia and related disorders.

Method/Design: A randomised controlled clinical trial comparing cTBS treatment on the left temporoparietal cortex localised by DTI based neuro-navigation and, standard neuro-navigation of the temporoparietal junction targeted patients with auditory hallucinations.

Status: Awaiting ethics approval prior to commencing recruitment.

Senior Research Staff (continued)

Associate Professor Neil Thomas

BSc (Hons), DClinPsy, CPsychol, AFBPsS, MAPS, FCCLP
Director, Voices Clinic

2017/18 Students

Ms Imogen Bell PhD Candidate
Enhancing self-management of distressing voice-hearing experiences using ecological momentary assessment and intervention

Dr Rachel Brand PhD Candidate
Investigating the role of trauma in auditory hallucinations

Ms Stephanie Louise PhD Candidate
The impact of a mindfulness-based intervention for auditory hallucinations

Ms Monique Scott PhD Candidate
Understanding negative voice content in persons with auditory verbal hallucinations

Ms Bridget Bowe MPsych Candidate
Auditory hallucinations or hearing voices? An exploration of the meaning and impact of labels

Ms Natalie Feary MPsych Candidate
Experiences of trauma focused therapy for auditory hallucinations

Ms Elissa Moore MPsych Candidate
Experiences of a combined smartphone-assisted coping strategy application and face-to-face therapy for distressing voices: A qualitative study

Ms Inge Gnatt Hons Candidate
Development of the Making Sense of Voices Scale to inform treatment and recovery in people who hear voices

2017/18 Clinical Psychology placement students

Ms Imogen Bell
Ms Khatira Gudaz
Mr Oliver Holmes
Ms Katrina Lindblom
Ms Elissa Moore

About Neil

Neil Thomas is Director of the Voices Clinic, an Honorary Consultant Clinical Psychologist with Alfred Health, and an Associate Professor in Swinburne's Department of Psychological Sciences. He is also Deputy Director of Swinburne's Centre for Mental Health and Director of the National eTherapy Centre. Neil has particular interests in psychological models and interventions for severe mental health problems (e.g. psychosis, schizophrenia, bipolar disorder), in persisting hallucinations or 'hearing voices' as an experience, and in the therapeutic use of online, mobile and digital technology. Through MAPrc, Neil has been running a treatment clinic and research program on persisting hallucinations, which has become one of the leading contributions to the international literature on psychological therapies for this experience.

Overview Research Areas and Strategic Goals

The Targeted Research and Intervention for Understanding and Managing Persisting Hallucinations (TRIUMPH) research program has been conducting research on how we can develop a better understanding of the treatment targets and processes involved in effective therapy for experiences such as hearing voices. This has included research across a number of therapeutic approaches including self-management, trauma-focused, and mindfulness-based approaches, and delivery methods including one-to-one psychological therapy, peer support and digitally mental health. The overarching aim of this research program is to develop approaches to reduce the impact of hallucinations on distress and quality of life, and to empower people to develop effective skills to live with this experience.

Senior Research Staff (continued)

2017/18 Selected presentations

Thomas, N. (2018, December). Psychological therapies for persisting hallucinations. Personally invited plenary presentation at the Psychological Treatment of Psychosis Research Forum, Sydney, Australia.

Thomas, N. (2018, May). Synthesising data on key directions in cognitive behavioural therapies for psychosis: trauma-focused and third wave interventions. Personally invited plenary presentation at the 20th Meeting of International Cognitive Behavioural Therapy for Psychosis (Beckfest), Oxford, England.

Thomas, N., Farhall, J., Foley, F., Villagonzalo, K. A., Leitan, N., Meyer, D., Ladd, E., Rossell, S., Castle, D., Kyrios M., and the SMART Research Group (2018, February). Using multi-media rich tablet-computer based tools to support personal recovery in people with psychosis: the SMART-Therapy randomised controlled trial. In N. Thomas (Chair), Using digital technology in services for people with persisting psychosis. Symposium conducted at the World Psychiatric Association Thematic Congress: Innovation in Psychiatry: Effective Innovations for Health and Society, Melbourne, Australia.

Thomas, N., Daya, I., Dent-Pearce, L., Karagounis, J., Quinn, S., & Brand, R. (2017, August). Voice Exchange: Voice Exchange: results of a pilot randomised controlled trial of one-to-one peer support integrating principles of the Hearing Voices Movement with Intentional Peer Support. In I. Daya (Chair), Innovations in incorporating lived experience into recovery-focused therapeutic approaches. Symposium conducted at The Mental Health Services Conference of Australia and New Zealand (TheMHS), Sydney, Australia.

Thomas, N. (2017, November). Digital technology and hallucinations. Personally invited plenary presentation at the International Consortium on Hallucinations Research Conference, Lille, France.

Senior Research Staff (continued)

Dr Stuart Lee

B.A, D.Psych
Research Fellow
Team Coordinator: Mental Health Service Research

2017/18 Staff

Dr Liza Hopkins Research Fellow

Ms Hannah Bushell Research Nurse

Dr Michelle Kehoe Research Assistant

2017/18 Students/Volunteers

Shayden Bryce DPsych

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

Ross Anderson PhD

Psychological wellbeing from the perspective of adolescents with vision Impairment

Richard Lawrence DPsych

Improving coping and enhancing quality of life for patients undergoing stem cell transplantation for haematological cancers

2017/18 Grants & Awards

- Vincent Chiodo Foundation, Project Grant, *Improving care after suicide attempts – A project evaluating the outcome for patients attending Alfred Emergency and Trauma Centre post suicide or self-harm,* S Ellen, S Stafrace, S Lee, R Tsui, E Symons, J Lowthian, 2016–17, $32,365.
- Vincent Chiodo Foundation, Project Grant, *Housing instability and the reason for attending The Alfred Emergency & Trauma Centre,* S Stafrace, C Smith, F Borghmans, J Lowthian, H Newnham, D De Silva, J Serong, C Luckhoff, J Freidin, J Fyshe, S Lee, 2016–17, $23,484.
- NHMRC, Early Career Fellowship, *Skill building interventions to address barriers to social inclusion for people with schizophrenia,* S Lee, 2016–19, $251,715.
- Office of the Chief Psychiatrist Victoria, Project Grant, *Sexual Safety Checklist – Pilot & Evaluation,* P Thomas, S Lee, S Stafrace, S Anderson, S Wall, 2017–18, $49,249.
- Vincent Chiodo Foundation, Project Grant, *Co-producing and co-delivering Living Well training for hospitalised patients displaying suicidality or social disadvantage,* P Thomas, S Lee, S Stafrace, S Keppich-Arnold, 2018–19, $24,245.
- Vincent Chiodo Foundation, Project Grant, *Promoting access to integrated health, mental health and community development for residents of a high density public housing facility,* P Thomas, S Lee, S Stafrace, S Keppich-Arnold, 2018–19, $49,996.

About Stuart

Stuart has always been interested in how people live with and overcome adversity, and the strategies, ways of thinking and environmental supports they access to improve their ability to cope and live meaningful and fulfilling lives. This led him to undergo clinical training as a Clinical Neuropsychologist, which provided a strong understanding of techniques to assess and rehabilitate the consequences of cognitive impairment. He is also conducting research aimed at utilising computer-assisted and therapist-provided interventions to improve cognition, psychological wellbeing and quality of life in multiple clinical populations. This interest has extended to examining how the services that provide care to people with mental illness and acute and chronic ill health operate to understand and support the needs of people accessing care. An important goal is to facilitate the uptake of therapeutic interventions shown in research to be effective for often vulnerable clinical populations, while also ensuring that the way services operate are informed by the experiences of service users and are effective in achieving their stated goals.

Senior Research Staff (continued)

Overview Research Areas and Strategic Goals

Stuart currently operates 3 overlapping areas of research. 1) Examining the contributors to psychological distress, cognitive impairment or reduced quality of life in varied clinical populations; 2) Examining the effectiveness of brief (e.g. self-help manual) or intensive (e.g. 20-session cognitive remediation, social skill building) psychoeducation or psychological interventions to build knowledge, skills and confidence in performing social, functional or illness self-management behaviours; and 3) Examining how delivery of mental health care can be improved through implementing evidence-informed practices within routine care.

Featured Projects

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

Investigators: Shayden Bryce, Stuart Lee, Jennie Ponsford, Susan Rossell

Funding: Monash University School of Psychological Sciences

Duration: 2014–2018

Background: Cognitive impairment is common for people with schizophrenia and has been found to be among the strongest predictors of community living. Cognitive remediation therapy (CRT) is a behavioural intervention that has moderate benefits for improving cognition. Benefits are also often found for improved performance of tasks of community living, however, this mostly occurs when paired with psychosocial rehabilitation. Little research has examined the psychological contributors to improved CRT outcome.

Aims: Compare the cognitive and functional gains with computer-assisted CRT vs a computer game control, and measure whether intrinsic motivation (perception of CRT as enjoyable, of value and offering choice) predicts improvement.

Method/Design: 2-arm randomised controlled trial with 20-sessions of CRT and a 3 month follow-up.

Status/Interim Results: Completed. CRT produced moderate effects for a greater improvement in cognition than a computer came control, but neither group showed improved functioning.

Care After A Suicide Attempt in the Alfred Emergency Department

Investigators: Evan Symons, Steven Ellen, Simon Stafrace, Stuart Lee, Roxy Tsui, Judy Lowthian

Funding: Vincent Chiodo Foundation

Duration: 2016–2018

Background: Owing to the actual or potential for harm that often accompanies suicide attempts, hospital emergency departments (ED) often play an important role in addressing experienced physical injury and providing access to specialist mental health care. However, little research has examined practice in identifying and providing care to people presenting to the ED following a suicide attempt.

Aims: Identify the frequency and reason for why patients presented following a suicide attempt, care received in the ED, and factors impacting on whether they re-presented.

Method/Design: Retrospective audit of all adult patients presenting to The Alfred's ED in February–April 2018.

Status/Interim Results: Completed. In total, 119 patients presented following a suicide attempt in the 3-month period. Most had made a previous suicide attempt, over half were drug or alcohol affected at the time of the attempt and only 11% were admitted for psychiatry care with most referred for community mental health follow-up or the plan for post-ED care was communicated to an existing mental health professional.

Problem Gambling in People Seeking Treatment for Mental Illness

Investigators: Dan Lubman, Nicki Dowling, Jayashri Kulkarni, Victoria Manning, Stuart Lee, Simone Rodda, Rachel Volberg, Sanja Cosic

Funding: Victorian Responsible Gambling Foundation

Duration: 2014–2017

Background: Problem gambling and mental illness may be commonly comorbid. The financial and social consequences that often stem from problem gambling can contribute to the onset of mental illness. People with mental illness who are often socially isolated may also use gambling as a way of connecting socially or improving their mood when depressed or wanting to distract from distressing thoughts. The prevalence of problem gambling and factors contributing to this have rarely been explored in community living people accessing different forms of mental health care.

Aims: Measure the prevalence and contributors to problem gambling in mental health treatment seekers and the way in which mental health staff identify and respond to gambling problems in their clients.

Method/Design: Prospective survey of people attending mental health services and survey and interview studies with mental health staff.

Status/Interim Results: Completed. From 8 outpatient mental health services, 837 people completed a survey and 6% reported problem gambling in the previous 12 months. Mental health staff reported that practice in identifying and responding to problem gambling was highly variable, with previous problem gambling training associated with improved confidence and willingness to screen for and respond to problem gambling.

Senior Research Staff (continued)

Associate Professor Jerome Maller

BSc, GradDipPsych, MSc, PhD
Neuroscientist
Therapeutic Brain Stimulation

About Jerome

I am a neuroscientist and Adjunct Associate Professor at MAPrc. I am also a MRI Clinical Science Specialist at General Electric Healthcare. I focus on multimodal integration of brain measurement and stimulation technologies.

I have been in the field of neuroscience for over 15 years and as such I have been involved in the rapid advancement of many of these technologies, such as magnetic resonance imaging, transcranial magnetic stimulation, electroencephalography and electrovestibulography. Equipped with this experience and specialized skill set, I aim to apply my niche abilities to develop new diagnostic tools and treatment strategies for psychiatric disorders and traumatic brain injury. I have been awarded various degrees which were completed at a variety of renown universities, supervised 23 students, published more than 100 articles in peer-reviewed journals with over 4000 citations, I am a reviewer for 42 international journals and been an invited speaker at a number of conferences and symposia. I completed a Victorian Neurotrauma Early Career Fellowship (2008–2011) and in 2011 was awarded an NHMRC Industry Career Development Award (2011–2015). I was also awarded the Centre for Excellence in Traumatic Brain Injury Research (CETBIR) Acute Care Fellowship in 2014. I have many affiliations with national and international universities and hospitals. I have also been involved in attracting more than AUD$4 million of funding.

Featured Projects

"The Aftershock" – Understanding the impact of traumatic brain injury on depression and emotional regulation

Investigators: Grieve SM, Maller JJ, Rosenfeld JV, Gruen R, Dinh M

Funding: NHMRC

Duration: 2016–2019

MRI of ligaments and tendons using diffusion tensor imaging

Investigators: Smith PM, Phal P, Maller JJ, Botterill E, Kokkinos C

Funding: Epworth Research Institute

Duration: 2018–2019

Senior Research Staff (continued)

Dr Steven Miller

MBBS, PhD, M.Occ Env Health
Head, Perceptual and Clinical Neuroscience Laboratory

2017/2018 Staff

Dr Phillip Law
Post-doctoral researcher

2017/2018 Grants & Awards

Monash Institute of Medical Engineering – Non-invasive neuromodulation of psychiatric and neurological disorders using caloric vestibular stimulation. Amount: $100,000 (awarded 2017).

Victorian Government Department of Health and Human Services Medical Research Acceleration Fund Tier 1 – Collaborative clinical, technical and user-interface research to accelerate translation of an online visual test to diagnose bipolar disorder. Amount: $100,000 (awarded 2017).

About Steven

Steven is a clinician in occupational and pain medicine, and a researcher in clinical neuroscience, visual neuroscience and consciousness science. His lab is engaged in basic science and clinical research and has also recently entered the virtual research environment, with wide national and international collaboration for its new Binocular Rivalry Online (BRO) project. The lab has a strong clinical translation focus for both its visual neuroscience and brain stimulation themes. In clinical work Steven provides medical advice on the Victorian Government's WorkSafe and Transport Accident Commission's clinical panels.

Overview Research Areas and Strategic Goals

Steven co-discovered that the rate of binocular rivalry – a perceptual switching phenomenon – is slow in bipolar disorder, and that an individual's binocular rivalry rate is under substantial genetic control. Following on from these discoveries, Steven is developing an online binocular rivalry test for convenient and low-resource testing of large-scale clinical and control samples (thousands to tens of thousands of subjects), aiming to (i) improve genome-wide association studies of psychiatric disorders, (ii) examine psychiatric disorder diagnostic discrimination, and (iii) facilitate standardisation of behavioural protocols for binocular rivalry testing. Steven is also driving research on neuromodulation with caloric vestibular stimulation — a simple, safe, affordable and non-invasive brain stimulation technique — to treat various clinical conditions. His current focus for this work is on persistent pain conditions. Steven also engages in theoretical analytical work and has performed detailed analyses on the empirical and conceptual foundations of consciousness science.

Featured Projects

Collaborative clinical, technical and user-interface research to accelerate translation of an online visual test to diagnose bipolar disorder

Investigators: Dr Steven Miller, Dr Phillip Law, Dr Kirsten Ellis (key collaborator Prof. Nicholas Martin)

Funding: Victorian Government Department of Health and Human Services Medical Research Acceleration Fund Tier 1 – $100,000

Duration: Initial development 2017, grant funding commences Apr. 2018, completion Dec. 2019

This project is developing an online visual test to diagnose bipolar disorder (BD). BD, schizophrenia (SCZ) and major depressive disorder (MDD) are commonly misdiagnosed with enormous personal, social and economic costs. Principal investigator, Miller, has shown that a visual test, binocular rivalry (BR), could reduce such misdiagnosis, identify at-risk individuals, and help find genes for BD. To fully examine the BR test requires very large sample sizes (1000s to 10000s), so an online test platform is required.

Senior Research Staff (continued)

An online BR test prototype has been developed via successful health and research (Monash Alfred Psychiatry Research Centre; MAPrc) and Monash Faculty of Information Technology (FIT) partnership, with seed funding from Monash Institute of Medical Engineering (MIME) and Defence Health Foundation (DHF). This project is accelerating test (i) front- and backend development, (ii) user-interface testing, and (iii) roll out in 5000 healthy subjects (Australia) and 5000 BD subjects (UK). The project will quality assure the online test and provide rollout data for analysis and publication. 'Binocular Rivalry Online' will be based in Victoria, yielding ongoing collaborations between Victoria and international psychiatric research consortia and advancing a variety of engagement and innovation opportunities.

Non-invasive neuromodulation of psychiatric and neurological disorders using caloric vestibular stimulation. $100,000

Dr Steven Miller, Prof Daphne Flynn, Dr Andrew Nunn (key collaborators Dr Phillip Law, Prof Paul Fitzgerald)

Funding: Monash Institute of Medical Engineering – $100,000

Duration: Commenced Jul. 2017, completion Dec. 2019

This project is examining a new, inexpensive brain stimulation technique to treat persistent (chronic) pain (PP). PP is an increasingly problematic area of health care, costing billions of dollars annually. In addition to poor efficacy, available PP treatments are often expensive and invasive. Caloric vestibular stimulation (CVS) is a non-invasive, safe, inexpensive means of activating brain regions involved in PP, thereby reducing PP. Principal investigator, Miller, has completed a study of 34 PP subjects finding promising CVS therapeutic effects. He is continuing to investigate potential therapeutic effects of CVS in PP and to widen examination of the technique's potential efficacy in a range of psychiatric and neurological conditions.

Dr Abdul-Rahman I. Hudaib

MBBS
Research Medical Officer

About Abdul-Rahman

Abdul-Rahman is a medical officer at Monash Alfred Psychiatry research centre (MAPRc), at Alfred health. He is fully registered medical practitioner since 2007 who worked with various mental health services in WA, VIC, NSW, NT and TAS.

Working within the Women's Mental Health Division, he is currently directly involved in clinical trials investigating novel treatments in borderline personality disorder, and groups of depressive/psychotic disorders. Using skills in statistical modelling and clinical research as a medical officer, he aims to apply advanced mathematical models to collected data.

POSTDOCTORAL RESEARCH STAFF

Dr Jasmin Grigg

BPsych (Hons), PhD
Women's Mental Health Division

About Jasmin

Dr Grigg is a member of the Women's Mental Health Team at MAPrc, a position she commenced in April 2013. She coordinates research examining the potential use of Selective Estrogen Receptor Modulators (SERMs) for the treatment of psychotic, mood and cognitive symptoms for men and women with schizophrenia.

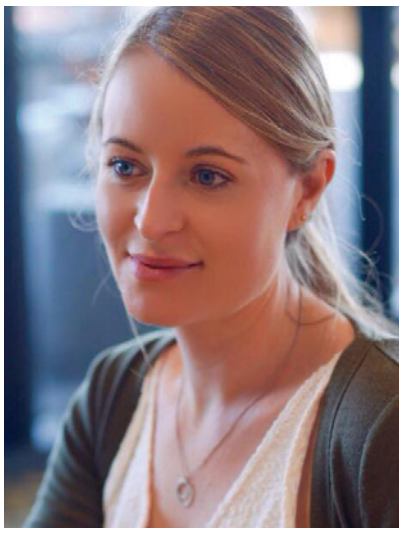
Dr Grigg completed her BPsych(Hons), and her PhD in Cognitive Science, at James Cook University in Cairns. She moved to Melbourne in 2011 to undertake the re-contact phase of the Women's Healthy Ageing Project (WHAP) with the Mental Health Research Institute of Victoria (MHRI), the National Ageing Research Institute (NARI), and the University of Melbourne: A longitudinal, epidemiological study of biomarker, hormone, psychosocial, and lifestyle factors which may affect later life health and cognition.

Overview Research Areas and Strategic Goals

Dr Grigg has a keen interest in the impact of hormones on brain functioning, and aims to contribute to research that provides further understanding of their role in enhancing recovery from mental illness. As another area of interest, she has contributed to MAPrc's work on the management of family violence against women and related mental health issues. She is contingent in new research being conducted at the Centre examining the role of memantine, an anti-Alzheimer's drug, in improving the cognitive symptoms of persons with borderline personality disorder (BPD), and supervises related research looking at the role of early trauma in the presentation of specific symptoms of BPD. Dr Grigg has also recently contributed to the development of two documents published by MAPrc – "When She Talks to You About the Violence" (A GP toolkit for identifying and responding to family violence).

Dr Natalie Thomas

BSc (Hons) PhD
Women's Mental Health Division



2017 Students/Volunteers

Jacinta Cheng Honours student

Attention, inhibition and emotions – An emotional antisaccade study in Borderline Personality Disorder

2017 Grants & Awards

- $300,000 Alfred Felton Bequest; 'Preventing suicide in peri-menopausal women: a new approach'

About Natalie

Natalie Thomas is a Post-doctoral researcher at Monash Alfred Psychiatry research centre (MAPrc), at Monash University. She completed her PhD studies in 2016 in the field of molecular psychiatry, working within a laboratory that dissects the syndrome of schizophrenia using molecular biology methods, allowing for progress toward clinically useful biomarkers.

Postdoctoral Research Staff (continued)

Working within the Women's Mental Health Division, she's currently directly involved in clinical research programs investigating novel treatments in borderline personality disorder, and subgroups of depressive disorders. Using her skills in both molecular psychiatry and clinical research, she aims to further our understanding in psychiatric biological markers and molecular mechanisms of psychiatric disease. She is particularly interested in the areas of psychoneuroendocrinology, stress reactivity vulnerabilities/ resilience factors, stratification of patients, and treatment response. She is committed to developing a unique skill set that bridges molecular knowledge and techniques with clinical research, ultimately contributing to the evolving field of translational psychiatry, with the aim of making a 'real world' difference.

Overview Research Areas and Strategic Goals

Natalie's background as a biological scientist provides her with a comprehensive understanding of biochemistry and molecular biology techniques, and has a growing theoretical and practical understanding of clinical research. This provides the capacity to translate research findings into clinical practice, and vice versa, and importantly communicate effectively between the two fields. She has recently established a psychiatric research bio-databank which aims to house comprehensive clinical, demographic, and cognitive data alongside plasma, serum, and saliva samples of both healthy controls and psychiatric patients. This provides significant potential for future research questions and collaborations.

Dr Neil Bailey

PhD, Post-Doctoral Researcher
Therapeutic Brain Stimulation Division

2017/18 Students/Volunteers

Hannah Coyle PhD Candidate

Andrea Marcu PhD Candidate

Aleksandra Miljevic PhD Candidate

Magelage Perera PhD Candidate

Harry Geddes Honours Student

Oliver Baell Honours Student

Jake Payne Honours Student

Lara Picolli Summer Scholarship Student

Kara Spierling Volunteer Intern

2017/2018 Grants & Awards

- $15,000 Alfred Small Grant for the project 'Determining the neurobiology of mindfulness: investigating alterations in neural excitation/inhibition balance following regular mindfulness meditation'
- $10,000 to attend the Sao Paulo School of Advanced Sciences on Social and Affective Neuroscience

2017/2018 Media

- Sao Paulo School of Advanced Sciences Social and Affective Neuroscience award (estimated value = $10,000).
- Interviewed by 3CR community radio for their Brainwaves program.
- Interviewed by Smiling Mind for their new mindfulness program launch.

About Neil

Neil completed his PhD in 2013 examining brain changes that result from depression after a traumatic brain injury. Through this research, Neil became aware of the difficulties in treating and preventing mental illness, and began to focus his research on methods to improve treatments and reduce mental illness rates across society.

Overview Research Areas and Strategic Goals

Neil conducts a range of studies that explore how mental health can be improved. In particular, he examines brain activity differences in individuals who meditate. The goal of this research is to explain the mechanism of action by which meditation leads to improved mental health. His research also assesses measures of brain activity that predict who will respond to a brain stimulation treatment for depression, how brain activity differs between typical depression and depression that commonly follows a traumatic brain injury, and whether online mindfulness is effective at improving mental health. His long-term goal is to build a case for mindfulness meditation in the core curriculums of high schools to improve mental health across society.

Postdoctoral Research Staff (continued)

Featured Projects

Determining the neurobiology of mindfulness: investigating alterations in neural excitation/ inhibition balance following regular mindfulness meditation

Investigators: Dr Neil Bailey, Dr Kate Hoy

Funding: $15,000 – Alfred Small Health Grant

Duration: 2018–2021

Background: Mindfulness meditation has been demonstrated to improve mental health and improve attention. However, the neural mechanisms enabling this are under-explored.

Aims: Our research aims to use transcranial magnetic stimulation to probe the inhibition/excitation balances of the prefrontal cortex to determine if alterations to this region of the brain are responsible for the improved attentional function in meditators.

Method/Design: The study is a cross sectional design comparing 30 meditators to 30 controls.

Status: Data collection ongoing

Examining brain activity differences related to attention in long term meditators

Investigators: Dr Neil Bailey, Dr Kate Hoy, Dr Bernadette Fitzgibbon, Dr Sung Chung, Caley Sullivan

Funding: $1,800 – Thinkable.org Award

Duration: 2015–2018

Background: Mindfulness meditation has been demonstrated to improve mental health and improve attention. However, the exact profile of brain activity that enables these improvements has not been fully characterised.

Aims: Our research aims to use multiple attention based cognitive tasks in combination with EEG to determine which particular neural processes related to attention are altered by meditation.

Method/Design: The study is a cross sectional design comparing 30 meditators to 30 controls.

Status: Study is in preparation for publication. Meditators show neural activity that is distributed more towards the prefrontal cortex in attention related tasks.

Assessing the effect of online mindfulness interventions

Investigators: Dr Neil Bailey

Duration: 2015–2018

Background: Mindfulness is commonly delivered over the internet. However, very little research has examined whether this leads to improved mental health in the same way as in-person interventions.

Aims: Our research aimed to assess the effect of an online mindfulness intervention on mental health, and determine whether more practice lead to larger effects.

Method/Design: The study was a longitudinal design assessing the relationship between mindfulness practice and multiple mental health and well-being measures in 220 participants who took part in one month of online mindfulness practice.

Status: The study was published in 2018. Participants showed improvements in all measures of mental health and well-being, and increases in positive emotions were associated with the number of days practiced.

Dr Robin Cash

PhD, Research Fellow (Therapeutic Brain Stimulation Division)

2017 Students

Robert Cooper PhD Candidate

"Effect of tACS frequency, amplitude and synchronisation on working memory"

Xianwei Che PhD Candidate

"Examining the Role and Neurophysiological Mechanisms of Social Support in Pain Experience"

2017 Grants & Awards

- $7000 Platform Access Grant 'Network plasticity in major depressive disorder'

About Robin

Dr Robin Cash is a neuroscientist who uses brain stimulation and neuroimaging techniques to enhance our understanding of brain function & advance therapeutic brain stimulation approaches. Dr Cash worked with several other leading international research groups in Frankfurt, New York and Toronto before joining the team in 2016.

Postdoctoral Research Staff (continued)

One of his main foci is on neuroplasticity (i.e. the malleability of the brain) and our capacity to harness this fundamental and fascinating property to modulate and potentially normalise brain function in mental illness. He is also interested in the factors underpinning inter-individual variability in response to brain stimulation treatments and the development of personalised treatment approaches that ensure more consistent treatment benefits.

Overview Research Areas and Strategic Goals

Dr Cash's research is helping to unravel the neural basis of clinical response to brain stimulation therapy in depression. In particular, his research is helping to define the relationships between neuroplasticity, brain network connectivity and treatment outcomes. This body of research provides the framework for predicting, enhancing and ensuring positive clinical outcomes.

Featured Projects

Brain plasticity and inhibition as mechanisms in depression and predictors of treatment outcome

Prof. Paul Fitzgerald

Investigators: Dr Robin Cash, Prof Paul Fitzgerald, Ms Susan McQueen, Mr David Elliot, Ms Lenore Wambeek

Funding: N/A

Duration: 2016–2019

Background: There are no reliable predictors of clinical response to repetitive transcranial magnetic stimulation therapy in depression. This treatment can be time consuming and costly. This study examines whether brain plasticity (i.e. the neurophysiological capacity for the brain to change) predicts longer-term clinical response to a course of repetitive transcranial magnetic stimulation (rTMS) in depression.

The study is also designed to investigate inhibitory properties of brain function. This study employs transcranial magnetic stimulation and electroencephalography (TMS-EEG).

Aims: To establish whether brain plasticity predicts longer-term antidepressant response to rTMS

Method/Design: Volunteers with treatment resistant depression participated in a TMS-EEG session prior to completing 4–6 weeks of rTMS treatment. TMS-EEG provided the means to assess neuroplasticity.

Status: Results being analysed.

Relationship between rTMS treatment site and antidepressant outcome

Investigators: Dr Robin Cash, Prof Paul Fitzgerald, Andrew Zalesky, Richard Thomson, Jerome Maller, David Elliot, Melanie Emonson, Caley Sullivan, Rodney Anderson, Kate Hoy, Susan McQueen, Bernadette Fitzgibbon, Luca Cocchi, Ye Tian

Funding: N/A

Duration: 2017–2019

Background: The optimal stimulation site for rTMS treatment within the relatively large expanse of the prefrontal cortex has remained a matter of longstanding interest. In this context, 'optimal' refers to the site that yields maximal clinical treatment response. Recent work suggests that the optimal site may dictated by underlying aspects of brain connectivity.

Aims: To identify the optimal treatment site within the DLPFC and its relationship to brain connectivity.

Method/Design: Volunteers with treatment resistant depression received a magnetic resonance imaging brain scan prior to completing 5–8 weeks of rTMS treatment. Results were retrospectively analysed to ascertain the relationship between brain connectivity at the stimulation site and treatment response.

Status: This study provides some of the strongest evidence to date for the relationship between brain connectivity at the precise stimulation site and treatment response. These results add to a growing body of work and future studies may aim to prospectively personalise treatment site based on brain connectivity. Publication: Cash *et al.,* 2019, *Biological Psychiatry* (in press).

Aberrant brain network dynamics in depression and a prediction of treatment outcome

Investigators: Dr Robin Cash, Prof Paul Fitzgerald, Andrew Zalesky, Richard Thomson, Jerome Maller, David Elliot, Melanie Emonson, Caley Sullivan, Rodney Anderson, Kate Hoy, Susan McQueen, Bernadette Fitzgibbon, Luca Cocchi

Funding: N/A

Duration: 2017–2019

Background: Neuroimaging (i.e. magnetic resonance imaging) can be used to characterise brain activity and networks. Recent work suggests that neuroimaging-based predictors of treatment response may be more accurate than clinical or demographic variables. Nonetheless, no accurate established neuroimaging biomarkers of treatment response exist to date.

Aims: (i) To characterise brain network abnormalities in depression. (ii) To integrate multiple biomarkers of treatment response using machine learning to more accurately predict clinical outcome to rTMS.

Postdoctoral Research Staff (continued)

Method/Design: Volunteers with treatment resistant depression received a magnetic resonance imaging brain scan prior to completing 5–8 weeks of rTMS treatment. Based on the brain scans, various illness and treatment outcome relevant biomarkers were assessed and integrated using machine learning to develop a novel multivariate predictor of treatment response.

Status: The results suggest that using a small number of disease and treatment relevant neurobiological features, treatment responders and non-responders could be classified with 85–95% accuracy. Various stringent tests were performed to ensure the accuracy and transparency of this method. Nonetheless, this method will need to be tested in a separate cohort to ensure generalisability. Paper submitted and under review.

Dr Aron Hill

BA (Hons)/BSc, PhD
Therapeutic Brain Stimulation Division

About Aron

Aron first became interested in the area of non-invasive brain stimulation (NIBS) during his Psychology Honours year. Here, he undertook a project exploring the human mirror neuron system – a group of specialised cells implicated in a number of neurocognitive functions such as empathy, social cognition and theory of mind. The project utilised a technique known as transcranial magnetic stimulation (TMS) which is able to painlessly stimulate the brain via a handheld magnetic coil. This study was able to show that emotional stimuli can directly influence the mirror neuron system. Intrigued by the ability for these emerging NIBS techniques to alter behavioural processes, as well as their potential as therapeutic tools, Aron commenced a PhD within the Therapeutic Brain Stimulation Division of the MAPrc in 2014.

During his PhD, which was conducted under the supervision of A/Prof Kate Hoy, Dr Nigel Rogasch, and Prof Paul Fitzgerald, Aron worked on devising optimised approaches for stimulating the brain using a technique known as transcranial direct current stimulation (tDCS).

Now a post-doctoral researcher, Aron continues to focus on ways of improving the efficacy of tDCS and other NIBS techniques, while also devising methods for examining the physiological changes which take place in the brain following stimulation. In order to do this, Aron uses a variety of functional brain-imaging approaches including electroencephalography (EEG) and combined EEG and transcranial magnetic stimulation (TMS-EEG), in addition to neuropsychological tests.

Overview Research Areas and Strategic Goals

The human brain shows a remarkable capacity to adapt its structure and function to a changing environment. This ‘neuroplasticity’ is vital for cognitive processes such as learning and memory, and is often perturbed in neuropsychiatric illnesses.

Transcranial Electrical Stimulation (tES) technologies (e.g., tDCS and transcranial alternating current stimulation [tACS]) are emerging as potential methods for modulating plasticity-related processes through externally applied mild electrical currents. Accumulating evidence also indicates that tES techniques are able to enhance a number of cognitive functions in both healthy individuals and clinical populations. However, the underlying biological mechanisms which drive these changes remain to be fully elucidated. Similarly, the precise parameters required for optimising the effects of tES on brain regions important for cognition have yet to be clearly defined.

Postdoctoral Research Staff (continued)

Aron's research combines tES techniques with powerful neuroimaging approaches including EEG and TMS-EEG to better understand the functional changes which take place in the brain following stimulation. Aron is particularly interested in exploring relationships between these plasticity-related brain changes and tES-induced alterations in cognitive function. Aron's research to date has focussed largely on exploratory studies conducted in healthy participants, however he aims to expand this into larger clinical trials in neuropsychiatric cohorts in the near future.

Current Projects

Aron is currently actively involved in the *BrainAmp* project. This comprises of a series of preliminary experiments exploring the use of novel "closed-loop" tACS paradigms. The aim of this project is to optimise methods for entraining endogenous brain oscillations within specific frequency bands. Certain brain oscillations have been linked to a number of important higher-order cognitive processes including working memory and attention and are also important for coordinating the flow of information across both local and distributed neural networks. Modulation of these rhythms through externally applied oscillating currents, has the potential to alter the cognitive processes they underlie.

Aron is also presently conducting a pilot study investigating the efficacy of a plasticity-inducing brain stimulation technique known as intermittent theta-burst stimulation (iTBS) for improving cognitive performance in Parkinson's disease. A key overarching aim of Aron's ongoing research is to build a better mechanistic understanding of the effects of NIBS technologies in brain regions important for cognition with the aim of translating these findings into more efficacious protocols for ameliorating cognitive dysfunction in neurological and psychiatric conditions.

Dr Richard Thomson

BSc (Hons) PhD

Therapeutic Brain Stimulation Division

About Richard

Dr Richard Thomson is a biomedical engineer and neuroscience researcher. His PhD was conducted in the brain stimulation field and he has expertise in a large number of modalities such as EEG, MRI, TMS, PET, electromagnetic field modelling of the cortex, and near infra-red spectroscopy (NIRS). Much of his research involves the combination of brain stimulation with neuroimaging.

Overview Research Areas and Strategic Goals

Richard's research interests are primarily focused upon the design and optimisation of brain stimulation devices. With his engineering background, he is contributing towards the development of a home-use transcranial current stimulator, a closed-loop current stimulator, and a novel TMS coil. He also has an interest in the extraction of biomarkers from neuroimaging data to describe cognitive behaviour and the presence of mental illness. Much of his research has involved NIRS to investigate the neurophysiological effects of brain stimulation, and he is working towards using NIRS to inform appropriate TMS dose in non-motor areas of the brain.

Postdoctoral Research Staff (continued)

Dr Gemma Sharp

(BSc(Hons), Dip Lang, BBSc(Hons), Grad Dip Psyc Sci, MSc, PhD(Clin Psyc))

Women's Mental Health Division

NHMRC Early Career Fellow and Clinical Psychologist

2018 Students/Volunteers

Pascale Maynard
Summer Placement Student (2018)

2018 Grants & Awards

GRANTS

- $193,771 – NHMRC Early Career Fellowship 'Psychoeducational program to address women's genital appearance concerns' (2018–2021, CI: Gemma Sharp)
- $5,120 from Cottons Pty Ltd 'Psychoeducational mobile app addressing women's genital appearance concerns' (2018–2019, CI: Gemma Sharp)
- $647 from Monash University Central Clinical School Travel Grant scheme (2018, CI: Gemma Sharp)

AWARDS

- Victorian Young Tall Poppy Science Award
- Shortlisted, Superstars of STEM program

About Gemma

Dr Gemma Sharp originally trained as a molecular biologist and obtained a Master of Science in Oncology from the University of Cambridge in the UK. She then transitioned to the study of psychology and was awarded her PhD (Clinical Psychology) from Flinders University in Adelaide in 2017. She has combined her background in medical and psychological sciences to investigate the field of body image concerns, in particularly, genital appearance concerns in women, for the last five years. She is considered to be one of the world leaders in this field and has published her world-first findings in high quality medical and psychology journals. Dr Sharp joined the Monash Alfred Psychiatry Research Centre in 2018 through her NHMRC Early Career Fellowship where she continues her work on the development of psychoeducational interventions to assist people experiencing body image concerns. Dr Sharp also works as a Clinical Psychologist in private practice where she specialises in the treatment of body image concerns, eating disorders, and body dysmorphic disorder.

Overview Research Areas and Strategic Goals

Body image concerns are on the rise the world over and are affecting people of all ages, but particularly young women. Dissatisfaction with physical appearance can lead to the development of serious psychiatric conditions like eating disorders, which have the highest fatality rate of all psychiatric conditions. People are dying while trying to fulfil an ideal body type which is impossibly difficult to achieve. It seems that no area of our bodies is safe from scrutiny, even parts that are not usually on display. Recently, there has been a rapid increased in the number of requests for aesthetic surgery, particularly genital aesthetic surgery.

The major concern is that none of the genital aesthetic procedures are evidence-based and safety and effectiveness data are still lacking. There can also be serious medical complications which can have devastating effects on intimate relationships and psychological well-being. Broadly speaking, Dr Sharp's research program aims to understand and assist girls and women with body image concerns so they do not engage in risky body modification behaviours. Several of her projects utilise novel psychoeducational interventions to address body image concerns. She is particularly interested in the use of technology to deliver these interventions (e.g., mobile apps and chatbots) to increase accessibility and also reduce shame around seeking help for body image and genital self-image issues.

Postdoctoral Research Staff (continued)

Media (2018)

PRINT

1. ABC News – "Penis enlargement study looks at what drives men to do it" (15/06/2018)
2. Courier Mail – "Selfie surgery: Patients want to look like filtered selfies, dubbed Snapchat dysmorphia" (02/08/2018)
3. Medical Republic – "Why women feel pressure to amputate their genitals" (28/11/2018)

RADIO

1. Triple J – "The Hook Up" – Segment on penile augmentation (22/04/2018)
2. Triple J – "The Hook Up" – Segment on labiaplasty (06/05/2018)
3. ABC News and Triple J – "Penis enlargement study looks at what drives men to do it" (15/06/2018)
4. ABC Radio National – "Ockham's Razor" – "People's quest for 'perfect' private parts" (22/07/2018)
5. Triple M – Segment on Snapchat dysmorphia (03/08/2018)
6. Triple R – "Radiotherapy" – Segment on genital dissatisfaction and cosmetic surgery (16/09/2018)
7. Triple R – "Radiotherapy" – co-host (ongoing) from 09/12/18

VIDEO

1. TEDxBrisbane – "Why we should talk about vulvas, not vaginas" (01/03/2018)
2. Mental Health Professionals Network Webinar – "Identifying body dysmorphic disorder and psychological assessments for people seeking cosmetic surgery" (27/06/2018)

Conference Presentations (2018)

INVITED SPEAKER

1. Sharp, G. (2018, November). The rise of labiaplasty. World Congress of Science & Factual Producers, Brisbane, Australia.
2. Sharp, G. (2018, November). Psychiatrist chatbots. World Congress of Science & Factual Producers, Brisbane, Australia.
3. Sharp, G., Tiggemann, M., Mattiske, J., & Vale, K. I. (2018, September). Psychological and psychosexual outcomes of labiaplasty (APS Excellent Thesis Prize Winner Presentation). 2018 Australian Psychological Society Congress, Sydney, Australia.
4. Sharp, G. (2018, September). Body dysmorphic disorder and cosmetic surgery requests. In Her Shoes: A Conference on Women's Mental Health for Medical Practitioners, Melbourne, Australia.
5. Sharp, G. (2018, June). Identifying body dysmorphic disorder and psychological assessments for people seeking cosmetic surgery – A psychologist's perspective. Mental Health Professional Network Webinar Series, Melbourne, Australia.
6. Sharp, G. (2018, April). People's quest for 'perfect' private parts. ABC Radio National Ockham's Razor Live Event, Melbourne, Australia.
7. Sharp, G. (2018, February). Labiaplasty: An examination of what is happening in Australia in 2018. Sexual Health Society of Queensland Clinical Meeting, Brisbane, Australia.

ORAL PRESENTATION

1. Sharp, G., & Kulkarni, J. (2018, August). Online psychoeducational program for women with genital appearance concerns. Australian Society for Psychosocial Obstetrics & Gynaecology. Sydney, Australia.

Dr Phillip Law

PhD

Perceptual and Clinical Neuroscience Laboratory

2017 Grants & Awards

Victorian Government Department of Health and Human Services Medical Research Acceleration Fund Tier 1 – Collaborative clinical, technical and user-interface research to accelerate translation of an online visual test to diagnose bipolar disorder. Amount: $100,000 (awarded 2017)

About Phillip

Phillip is a postdoctoral researcher in visual neuroscience and clinical neuroscience. He is engaged in basic science with a strong clinical translation focus — examining mechanisms and clinical applications of a perceptual switching phenomenon called binocular rivalry — and is currently involved in wide national and international collaboration with the Binocular Rivalry Online (BRO) project.

Postdoctoral Research Staff (continued)

Overview Research Areas and Strategic Goals

Phillip has shown that slow binocular rivalry rate in bipolar disorder is a perceptual trait that cannot be explained by eye movement abnormalities. He has also shown the optimal stimulus characteristics for online binocular rivalry rate testing, and stemming from this important contribution to the BRO project, Phillip is co-developing and validating the BRO platform for low-cost testing of existing large-scale clinical and control cohorts (thousands to tens of thousands of subjects). This work aims to (i) improve diagnostic discrimination of psychiatric disorders, (ii) enhance power in psychiatric genome-wide association studies, and (iii) standardise binocular rivalry testing for meaningful comparison of data collected from different research centres.

Featured Projects

See Dr Steve Miller Featured projects

Dr Karyn Richardson

D.Psych (Neuro),
Team Coordinator
Therapeutic Brain Stimulation

About Karyn

Dr Karyn Richardson is a Post-Doctoral Researcher and Research Psychologist. Karyn completed her Doctorate in Clinical Neuropsychology in April 2017. Her research thesis used TMS-EEG to investigate the role of cortical inhibition in the working memory deficits associated with schizophrenia.

Karyn's current research interests include developing novel biological treatments for the affective and cognitive changes that occur following stroke. She is particularly interested in developing brain stimulation protocols to treat attentional and executive dysfunction and post-stroke depression. Karyn is also interested in developing evidenced based interventions for the treatment of the cognitive dysfunction associated with mental illness.

Current Projects

Karyn has worked as a research assistant and team coordinator of the Therapeutic Brain Stimulation since 2016 and co-ordinates the Deep Brain Stimulation for the treatment of severe depression trial. Deep brain stimulation (DBS) involves the implantation of stimulating electrodes into localised brain regions. In recent years DBS has been investigated as a potential treatment option for patients with the most severe and treatment non-responsive forms of depression. Studies have investigated several implantation sites, but the optimal neuroanatomical targets are yet to be identified. We are conducting a randomised, controlled double-blind trial to assess, whether DBS of the Bed Nucleus of the Stria Terminalis (BNST) has antidepressant efficacy.

Postdoctoral Research Staff (continued)

Dr Sung Wook Chung

PhD
Therapeutic Brain Stimulation

About Sung

Sung Wook has always aspired to a career in science because he wants to be able to improve people's lives through his work. He found himself particularly drawn to neuroscience and the importance of this field for understanding and treating psychiatric illnesses. However, soon after finding his science passion, he was enlisted into a mandatory military service for his home country, South Korea. After several years of absence from the field of science, getting back on track was not an easy journey. After a relentless pursuit of his true passion, he was lucky enough to do his PhD under the supervision of Professor Paul Fitzgerald at the Therapeutic Brain Stimulation division.

Overview Research Areas and Strategic Goals

His thesis projects were focused on the development of optimal methods for theta burst stimulation (TBS) in the prefrontal cortex. TBS is a non-invasive brain stimulation technique which has the ability to alter brain activity in humans. Due to its rapid administration, TBS has gained popularity both in research and clinical trials. Despite the benefit, wide adoption of TBS in treatment of psychiatric disorders has been limited due to the lack of understanding of its effects when it is applied to the prefrontal cortex, a brain region that is often targeted in therapeutic settings. Sung Wook has established the groundwork for the use of TBS in this brain region and identified optimal methods of application. During his PhD, he received various awards including the Outstanding Poster Award at the 2nd International Brain Stimulation Conference (one of 3 out of ~500 contestants), and one of his publications was featured on the cover of Human Brain Mapping. He was awarded his PhD in January 2018.

Current Projects

Sung Wook's current research is focused on the effect of different stimulation parameters of transcranial alternating current stimulation (tACS) over the prefrontal cortex. Electrical forms of non-invasive brain stimulation have been the subject of intense study due to their capacity to alter brain activity relevant to mood and cognition, apparent safety and potential to be applied in a simple and cost-effective manner. The aim of the research is to conduct a number of preliminary studies to understand how best to entrain brain oscillations using a custom designed stimulation system at Therapeutic Brain Stimulation division.

GRADUATING DOCTORAL STUDENT

Melanie Emonson

BBNSc (Hons), Doctor of Psychology (Clinical Neuropsychology) Candidate
Therapeutic Brain Stimulation

About Melanie

Melanie commenced her Doctor of Psychology (Clinical Neuropsychology) at Monash University in 2014 under the supervision of A/Prof Kate Hoy, Prof Paul Fitzgerald and Dr Nigel Rogasch. Her thesis is investigating the neurobiological and cognitive effects of transcranial direct current stimulation in healthy aging and mild cognitive impairment. Melanie had previously completed her Bachelor of Behavioural Neuroscience (Psychology Honours), with her Honours research project also based at MAPrc. Prior to commencing the DPsych, Melanie had been a Research Assistant on the Therapeutic Brain Stimulation Team. In this role she co-ordinated a clinical trial which investigated the predictors of response to transcranial magnetic stimulation (TMS) in adults with treatment-resistant depression.

Research interests include investigating the therapeutic benefit of non-invasive brain stimulation treatments to assist cognitive functioning in healthy aging, Alzheimer's disease and mild cognitive impairment. Melanie is also passionate about the development of neuropsychological interventions to improve daily functioning and quality of life for individuals with cognitive dysfunction.

Overview Research Areas and Strategic Goals

In aging, there are changes in both the structure and function of the brain, as well as differences in cognitive processing. There are also conditions in which there is a change in cognitive ability beyond what we would expect from normal aging, but it is not significant enough to impact on daily functioning. This is termed Mild Cognitive Impairment (MCI) and may represent a transition period prior to Alzheimer's disease. Therefore, this population is important from a therapeutic perspective to investigate the neural changes occurring, to determine whether they may be amenable to early intervention.

To assess neurobiological changes, non-invasive brain stimulation techniques can be used to both measure and modulate the activity present. To assess changes in cortical activity, transcranial magnetic stimulation (TMS) can be combined with electroencephalography (EEG), which is termed TMS-EEG. TMS uses electromagnetic induction to induce action potentials, and acts as a reset so that the neural activity under the coil, as well as far-reaching networks, is organised in synchrony. By recording EEG during delivery of the pulse, TMS-EEG can measure cortical reactivity and provide an in vivo measure of neurobiological changes through TMS-evoked potentials (TEPs). Transcranial Direct Current Stimulation (tDCS) is another non-invasive brain stimulation technique which involves the application of a weak electric current through two surface electrodes, an anode and a cathode, with the aim to increase or decrease activity through subthreshold modulation of the resting membrane potential. tDCS is often applied with the aim to improve motor or cognitive functioning.

However, there is a large degree of variability associated with application of tDCS to improve cognitive functioning. Aging may be a factor in this heterogeneity, and there is little understanding of the neurobiological effects of tDCS, as well as how this may be different when applied to a changed neural state. Therefore, the aim of the research is to investigate the neurobiological and cognitive effects of tDCS in younger adults, older adults and in MCI.

Given our aging population, it is imperative to understand further the neural changes occurring in an aged brain, as well as discovering if there are viable treatment options to help ameliorate cognitive decline before it progresses to a neurodegenerative process. There is a lack of effective cognitive interventions available to individuals with cognitive dysfunction, and discovering new tools will assist in Melanie's practice as a Clinical Neuropsychologist after completion of her D.Psych. This project also provides a foundation for further work in the area of aging/MCI and brain stimulation, both from the perspective of measuring neural changes and the possibility of modulating for cognitive benefit.

Current Projects

Melanie's doctoral thesis is entitled *"Investigating the neurobiological and cognitive effects of transcranial direct current stimulation in healthy aging and mild cognitive impairment."* Melanie is also a casual research assistant for randomised clinical trials investigating TMS for the treatment of mild-to-moderate Alzheimer's disease.

RESEARCH SUPPORT STAFF

Middle Management

Emmy Gavrilidis

BAppSci
Research Manager
Women's Mental Health Division

About Emmy

Emmy Gavrilidis is the Women's Mental Health Division Research Manager at MAPrc, a position she has held since April 2017. Prior to this Ms Gavrilidis was the Women's Mental Health Division Coordinator (2011–2017) and Research Assistant (2007–2011). She has extensive research experience and is involved in many aspects of research including project development, grant applications, setup of new studies including ethics, honours student project supervision, conference management, budgeting and finance aspects of research. She is responsible for supporting strategic and operational processes with the goal to ensure growth and success of the division in research, teaching, learning and engagement. She provides project management, financial, human resources and general infrastructure oversight.

Veronika Simic

Research Officer – Project Management & Development
Therapeutic Brain Stimulation

About Veronika

Veronika Simic is the Therapeutic Brain Stimulation Division Research Manager at MAPrc, a position she has held since June 2018. Prior to this Ms Simic has coordinated research trials in oncology and has worked in a clinical mental health setting. She also has extensive experience in all stages of business development and management. Ms Simic is responsible for supporting strategic and operational processes to ensure the growth and success of the Therapeutic Brain Stimulation Division in the areas of research, teaching, learning and engagement. She provides project management, financial, human resources and general infrastructure oversight.

Maree Mastwyk

BN. PhD.
Research Officer – Project Management & Development
Therapeutic Brain Stimulation

About Maree

Maree is an experienced clinical trial coordinator and manager of clinical research, principally in the area of Alzheimer's disease. She has liaised and collaborated with many research groups throughout her career, which has resulted in the production of high-quality research data. Maree has a Bachelor of Nursing from LaTrobe University and a PhD from the University of Melbourne. Her thesis was entitled: The expectations and experience of a diagnosis of dementia: lessons from patients and families.

Research Support Staff (continued)

Research Officers/Assistants

Ms Alisa Turbić

Research Assistant, Women's Mental Health Division

About Alisa

Alisa is a Research Assistant with the Women's Mental Health Division. Alisa spent the majority of her career working as a Senior Research Assistant at the Melbourne Brain Centre at The University of Melbourne where she managed research projects examining the factors that may be exploited to promote repair of the nervous system following brain injury and disease. She transitioned to public health research in 2016 by obtaining a position in the School of Public Health and Preventative Medicine at Monash University and subsequently commenced her position at MAPrc in May 2018. To date, she has contributed to several research projects, which have led to a number of peer-reviewed publications and presentations at professional conferences, nationally and internationally.

Ms Amelia Arnold

Research Assistant, Women's Mental Health Division

About Amelia

Amelia worked as a Research Assistant with the Women's Mental Health Division. Amelia is originally from Queensland and came to MAPrc with a Masters' Degree in Reproductive Medicine and a Master's Degree in Women's Health Medicine. Prior to joining MAPrc she worked at Nucleus Network on Phase I and Phase II clinical trials. While at MAPrc Amelia worked primarily on projects in the area of Complex Trauma Disorder and family and partner violence. Amelia left MAPrc at the end of 2017.

Ms Iris Liang

Research Assistant, Women's Mental Health Division

About Iris

Iris is a Research Assistant within the Women's Mental Health Division. Iris graduated with a Bachelor of Science degree at the University of Melbourne majoring in human anatomy and physiology, and completed her research thesis with first class honours. Based at the Melbourne Brain Centre in the Royal Melbourne Hospital, her Honours research examined the correlation of different imaging modalities in patients treated with intra-arterial therapy following acute ischaemic stroke. Following this, Iris joined MAPrc in 2018 where she coordinates two clinical looking at therapeutic intervention in the treatment of complex trauma disorder. As part of her role, Iris oversees participant recruitment and administering of neuropsychological assessments.

Ms Caitlin Bleeker

Research Assistant, Women's Mental Health Division

About Caitlin

Caitlin commenced at MAPrc in 2015 as an undergraduate psychology degree volunteer working within the Women's Mental Health Team. Caitlin went on to work causally at MAPrc and completed her Honours degree with MAPrc in 2017 working on a project exploring the cognitive enhancing effects of Tibalone in women' with peri-menopausal depression.

Research Support Staff (continued)

Mr Gayan De Mel

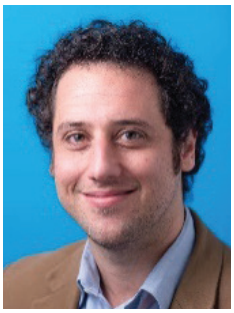
Research Assistant, Women's Mental Health Division & Clinical Trials

About Gayan

Gayan started working at MAPrc in 2013 in an administrative capacity working as PA to Director Professor Jayashri Kulkanri. With a background of qualifications in science, in 2015 Gayan moved into a research assistant role and worked primarily on a Vic Health funded harm minimization project, exploring the use of vaporized nicotine in people with persistent mental illness. Gayan also worked on several industry sponsored clinical trials before leaving MAPrc in 2018.

Caley Sullivan

Research Officer – Technology, Therapeutic Brain Stimulation



About Caley

Caley completed his undergraduate studies at the University of Queensland obtaining both BA Psychology and BSc Biomedical Science. Obtained BSc Honours in Biomedical Science from the Department of Medicine, University of Melbourne with a thesis focused on neural oscillations and psychosis. He has clinical experience in neuropsychology, sleep science, counselling and aged-care. His research experience includes neurophysiology, advanced signal processing, neuroimaging and data analysis across multiple modalities. He is a skilled and experienced programmer and has written software for PC, micro-controllers, and embedded Linux. Has experience prototyping hardware and device development, including CAD modelling and design for manufacture. As a researcher at the Monash Alfred Psychiatry research centre, he develops novel hardware and software solutions, towards new and improved methods of therapeutic brain stimulation and better patient outcomes.

Caley works across a broad range of brain stimulation studies, employing various techniques/ technologies including transcranial Alternating Current Stimulation (tACS), transcranial Random Noise Stimulation (tRNS), transcranial Direct Current Stimulation (tDCS), Transcranial Magnetic Stimulation (TMS), Theta-Burst Stimulation (TBS), Electroenchephalograpy (EEG), functional Near Infrared spectroscopy (fNIRS), Deep Brain Stimulation (DBS), Magnetic Resonance Imaging (MRI) and Neuronavigation.

Kirsten Gainsford

Research Assistant, Therapeutic Brain Stimulation

About Kirsten

Kirsten is a Research Assistant and Study Co-Ordinator with a background in psychology. She completed a Bachelor of Applied Science, Psychology (Honours). During her honours year she conducted research investigating the involvement of the visual processing and mirror neuron systems in perception and Autism. Kirsten is a member of the Golden Key International Honours Society and was selected to become a member due to outstanding academic performance during her undergraduate degree.

Research Interests

Kirsten is interested in progressing research in neuroscience and cognition related areas with particular interest in social cognition. She is also interested in continuing to use a number of brain stimulation and neurophysiological techniques including Transcranial Magnetic Stimulation (TMS), tDCS, Electroencephalography (EEG) and eye tracking. She is also proficient in the administering of a number of clinical and cognitive tests.

Research Support Staff (continued)

Caitlin Rogers

Research Assistant, Therapeutic Brain Stimulation Team

About Caitlin

Caitlin completed a Bachelor of Applied Science, Psychology (Honours – First Class) from Deakin University. Caitlin had previously worked as a research assistant working with young children. Caitlin has primarily worked under the leadership of Kate Hoy within the brain Stimulation Team.

Megan Ross

Research Assistant, Therapeutic Brain Stimulation

About Megan

Megan Ross is a research assistant and study coordinator for the Therapeutic Brain Stimulation team at the Monash Alfred Psychiatry research centre. She has research experience in various areas including Depression and Obsessive-Compulsive Disorder, homelessness, and Telehealth and mHealth programs. Megan's interests lie in the areas of knowledge translation, the role of policy in healthcare and the impact of gender on the lived experiences of health. Megan is a member of the Australasian Brain Stimulation Society. Megan is currently coordinating two studies investigating the relationship between the autonomic nervous system and Transcranial Magnetic Stimulation (TMS), in the treatment of affective disorders. The goal of these studies is to better understand the impact of TMS on autonomic function and to further personalize TMS treatment for patients.

Ms Laura Knox

Research Assistant, Therapeutic Brain Stimulation

About Laura

After completing a post graduate diploma in psychology in 2013, Laura completed a Master of Counselling Psychology in 2016 and in the same year joined the MAPrc Therapeutic Brain Stimulation Team as a research Assistant. Laura worked on a number of TBS clinical trials of transcranial magnetic stimulation and was also an active member of the MAPrc social committee.

Freya Stockman

BPsycSci, GradDip (Psych)

Clinical Trial Co-Ordinator & Research Assistant, Therapeutic Brain Stimulation

About Freya

Ms Freya Stockman is a Clinical Trial Coordinator and Research Assistant in the Therapeutic Brain Stimulation division of MAPrc. Freya finished a Bachelor degree in Psychological Science in 2016 as well as a Graduate Diploma of Psychology in 2017, both of which were completed at Deakin University. Her graduate research examined the relationship between mirror neuron activity and empathy using transcranial magnetic stimulation, as well as assessing the relevance of intelligence in social inferencing. She then worked as a Research Assistant at Deakin University in the Cognitive Neuroscience Unit (CNU) where she gained relevant experience handling neuro-lab equipment. Freya joined MAPrc in 2018 where she coordinated two clinical trials: using theta-burst stimulation for the treatment of fibromyalgia (chronic pain symptoms) and using transcranial alternating current stimulation (tACS) for the treatment of mild cognitive impairment (MCI). Freya endeavours to continue developing her professional aptitude in a psychology setting.

Research Support Staff (continued)

Fenny Muliadi

B.A Neuropsychology

Research Assistant/Neuropsychologist, Psychopharmacology – Caulfield

About Fenny

Fenny was born in Jakarta, Indonesia and moved to Melbourne in 1996. Fenny studied for her psychology degree at the University of Melbourne and neuropsychology degree at Latrobe University. She has been working in Clinical Trials at Caulfield Hospital since 2016 and recently began working at the Alfred site as well. Fenny undertakes study coordination and cognitive rating for Alzheimer's disease and depression studies. She enjoys the continuing contact with participants in clinical trials and the support this provides for both them and their study partners.

Fiona James

Clinical Trials Co-Ordinator – Psychopharmacology Team

About Fiona

Fiona joined MAPrc as a study coordinator on our industry sponsored clinical trials team in 2017 and worked on a sponsored study trialing a new medication in the treatment of post-traumatic stress disorder. Fiona was responsible for recruitment and testing of subjects and management of study data.

Research Nurses

Heather Gilbert

Research Nurse, Women's Mental Health Division

(RN Division 1, RGON, SRN)

About Heather

Heather Gilbert is an RN Division 1/Research Nurse at MAPrc. Heather has extensive clinical experience in Operating Theatre and PACU (Post Anaesthetic Care Unit) Nursing, Aged Care, Rehabilitation, IVF and District Nursing. Heather trained and worked as a Registered Nurse in Auckland, New Zealand, followed by several years of clinical practice in England, before moving to Melbourne, Australia in 2003. Heather joined MAPrc in 2005, as a Research Nurse with the Psychopharmacology Team. In January 2006, Heather was invited to join the Women's Mental Health Team, where she currently co-ordinates The National Register of Antipsychotic Medication in Pregnancy (NRAMP). This is an observational study which follows the pathway of women who are taking/have taken antipsychotic medication during pregnancy. We aim to establish evidence-based guidelines for the best use and effect of antipsychotic medication during pregnancy, birth and the postnatal phase, thereby assisting clinicians to make informed decisions in the management of women in their care. This stimulating and expansive role allows for further recruitment and networking opportunities across Australia. International involvement is also planned, and already includes colleagues in New Zealand.

Research Support Staff (continued)

Susan McQueen

Research Nurse, Therapeutic Brain Stimulation

About Susan

Susan came to MAPrc in 2006 as an experienced clinical mental health nurse. Susan works as a research nurse on a wide range of projects within the TBS team and also helps with administration of the TMS training courses, conducted by the TMS team.

David Elliott

Research Nurse, Therapeutic Brain Stimulation

About David

David joined MAPrc in 2009 after working on the Alfred Psychiatry inpatient unit as a psychiatric nurse. He initially worked on our industry sponsored clinical trials team before joining the TBS team, working on a range of clinical trials of Transcranial Magnetic Stimulation (TMS) and other brain stimulation studies. David also assists with delivery of the TMS training courses run by MAPrc.

Lenore Wambeek

Research Nurse, Therapeutic Brain Stimulation

About Lenore

Lenore Wambeek is a research nurse who joined MAPrc in 2014 after working in acute mental health at Monash Health. Lenore has been an important team member within the Therapeutic Brain Stimulation Team working in the TMS treatment clinic, and assisting with administration of the TMS training courses. Lenore enjoys travelling.

Linda Pearce

Research Nurse, Therapeutic Brain Stimulation

About Linda

Linda came to MAPrc in 2017 as an experienced clinical mental health nurse who had worked in the delivery of ECT for depression, but also in establishing rTMS units in new services. Linda worked as a research nurse within the TBS team and was primarily responsible for administering treatment for patients with depression using a variety of brain stimulation techniques. Linda also assisted with administration of the TMS training courses.

Jenny Bortoli

BN

Research Nurse, Psychopharmacology – Caulfield

About Jenny

Jenny was born in Melbourne and completed her general nurse training at St Vincent's' Hospital in Melbourne. Following her general training she completed a cardiac nursing course and worked in both St Vincent's and Cabrini cardiac units. Jenny worked for a short period of time in aged psychiatry where she became interested in clinical trials for Alzheimer's disease. She has continued to work in this area since 2007.

Research Support Staff (continued)

Jenny Ung

BN, Grad Cert. Mental Health

Research Nurse, Psychopharmacology – Caulfield

About Jenny

Jenny completed her Nursing degree at LaTrobe University. She went on to become a registered psychiatric nurse and worked in this area for several years. She joined the Clinical Trials Unit at Caulfield Hospital in 2015 as a cognitive rater, which opened the door to becoming a study coordinator as well. Jenny is currently working on studies that are testing new treatments for Alzheimer's disease and depression.

Sue Dal Sasso

RN

Research Nurse, Psychopharmacology – Caulfield

About Sue

Sue was born in New Zealand, grew up in Tasmania and has lived in Melbourne for 25 years. Sue completed nursing training at Launceston General Hospital, before studying complimentary medicine, including naturopathy and acupuncture. Sue began working in clinical trials 18 years ago and has worked in several disciplines. An opportunity arose to be involved in Clinical trials at APS Caulfield (including Alzheimer's studies) two years ago, which was an area of interest. Sue hopes that a new treatment will be developed in the near future to assist the people and families whose lives are terribly affected by this disease. On-going research is imperative to finding a treatment to delay the progress, cure or prevent Alzheimer's Disease, which has been elusive up to date! Sue enjoys travelling, photography and bush walking.

ACADEMIC PSYCHIATRISTS

Dr Carolyn Breadon

MBBS/BA (Hist), MP, FRANZCP, ATCL

Consultation Liaison Psychiatrist at The Alfred Hospital, Director of Advanced Training in Consultation Liaison Psychiatry, Victoria.

MAPrc Position: "Academic Teaching"

About Carolyn

Carolyn provides regular teaching on perinatal psychiatry in lectures and tutorials to Monash Medical Students. She has given two Grand Round presentations at The Alfred Hospital, firstly on autoimmune encephalitis and secondly on emerging hormone-based treatments for mental ill-health, a study which will be conducted at MAPrc in the new year. Carolyn completed her psychiatry training at The Alfred HIV Service and The Royal Women's Hospital, and subsequently worked at the Sunshine Women's and Children's Service and the Werribee Mother Baby Unit, before moving to MAPrc in 2017 to commence a PhD in post-partum psychosis under the supervision of Professor Kulkarni and Dr Natalie Thomas.

Role performed at MAPrc

With the able assistance of Rachana Pattali and before her Cindy Yu, Carolyn has set up the Perinatal Psychiatry Clinic to provide advice to GPs and women with major mental illnesses, such as schizophrenia and bipolar affective disorder, who are contemplating pregnancy. The clinic has proven very popular and has provided an additional arena for medical students and registrars to see pregnant women and new mothers with their babies who must consider treatment with psychiatric medications during the course of their pregnancy.

Research Interests/Activities

Carolyn's research interests lie in perinatal psychiatry, examining the relationship between hormone changes in pregnancy and at delivery, and mood and mental state fluctuations throughout the perinatal period. She works with Alisa Turbic on the National Register of Antipsychotic Medications in Pregnancy (NRAMP), and with large data sets from the Victorian Government and Sunshine Hospital, evaluating the effect of antipsychotic medication treatment on the physical health of mothers and their babies.

During this year Carolyn has contributed a chapter on Antipsychotics in Pregnancy to "Perinatal Pharmacotherapy", published by the Springer academic press, and a review article on the safety of antipsychotics in pregnancy to the journal Expert Opinion on Pharmacotherapy. She has travelled to the University of West Australia, Helen Mayo House in South Australia, Monash Medical Centre, Sunshine Hospital and The Albert Road Clinic, to provide education about psychiatric medication safety to psychiatrists, midwives, obstetricians and GPs.

She has presented preliminary data at the Marce Perinatal Mental Health Conference in Bangalore in September 2018 on increased rates of morbidity for women and their babies exposed to antipsychotic medications in pregnancy at Sunshine Hospital.

2017 Students/Volunteers

Ms. Lonneke Walraven, a final year medical student from The Netherlands, travelled to Melbourne for 3 months to work closely with Carolyn and with Dr Hudaib to evaluate methods of assessment for the NRAMP babies as they turn 3 and 5 years old. Lonneke's work will be used to inform the next stage of research at MAPrc on developmental trajectories of babies exposed to antipsychotic medication in utero.

Featured Projects

Retrospective review of maternal and infant morbidity at Sunshine Hospital

Investigators: Professor Glyn Teale (Western Health), Professor Jayashri Kulkarni (Monash University), Dr Carolyn Breadon, Ms Alisa Turbic, Dr Abdul Hudaib

Duration: Commenced February 2018

Method/Design: Retrospective review of outcome data recorded by midwives and medical officers through pregnancy and at delivery

Status: This large data set examining outcomes for 47,700 women and their babies over 10 years suggests that women taking antipsychotic medication in pregnancy are much more highly vulnerable to other sources of risk, including illicit drug use, smoking, and polypharmacy. Women taking antipsychotics and antidepressants in pregnancy are more likely to be obese, have pre-pregnancy diabetes or to develop gestational diabetes in pregnancy.

Academic Psychiatrists (continued)

They have higher rates of interventional delivery and of caesarean section delivery. Their babies are much more likely to suffer medication withdrawal and respiratory distress symptoms at delivery. These babies are more likely to be admitted to the Special Care Nursery and have lower rates of breastfeeding at discharge from hospital.

The National Register of Antipsychotic Medications in Pregnancy (NRAMP)

Investigators: Professor Kulkarni (Monash University), Dr Carolyn Breadon, Ms Alisa Turbic

Funding: A non-directive grant from Janssen-Cilag which provides funding for a part-time research coordinator

Duration: 2006-ongoing

Background: The NRAMP cohort comprises women taking antipsychotic medications in pregnancy who are then followed up throughout pregnancy and through the first year post-partum.

Aims: To ascertain whether women and babies exposed to antipsychotic drugs during pregnancy are more vulnerable to adverse metabolic or obstetric outcomes through pregnancy and at delivery or the post-partum.

Method/Design: Both women and their babies are contacted for assessment at specific time points during this period to evaluate their mental and physical health, as well as to track the babies' developmental progress.

Status: Researchers are currently following up on the 2014 paper published at MAPrc presenting results for the first 100 babies and their mothers with a similar project presenting results for the first 300 babies and their mothers. In the next year researchers hope to further evaluate sub-groups within this cohort, specifically examining outcomes for women taking clozapine during pregnancy and their babies.

The Victorian Data Linkages Project: maternal psychiatric and physical comorbidity at the point of delivery

Investigators: Professor Glyn Teale (Western Health), Professor Kulkarni (Monash University), Dr Carolyn Breadon, Ms Alisa Turbic

Funding: no external funding has been provided for this project

Duration: Commenced July 2018

Background: pregnancy, delivery and the post-partum represent a period in women' lives of very high risk for mental health difficulties.

Aims: This project aims to map the incidence of maternal mental health morbidity and diagnosis in the year after delivery of a baby, to examine differences in the rates of incidence and patterns of diagnoses made.

Method/Design: Data set of the past decade provided by the Victorian Government, providing a state-wide snapshot of maternal mental health morbidity dat

Status: data currently under analysis

Academic Psychiatrists (continued)

Dr Leo Chen

MBBS M.Psych FRANZCP AFRACMA

Clinical Research & Academic Teaching

About Leo

Dr Chen is a registered medical practitioner, Fellow of the Royal Australian and New Zealand College of Psychiatrists (FRANZCP) and Associate Fellow of the Royal Australasian College of Medical Administrators (AFRACMA). He is in clinical practice at Alfred Health and Epworth Camberwell and is also the Director of the Transcranial Magnetic Stimulation (TMS) Program at Epworth HealthCare.

Role Performed at MAPrc

Dr Chen's role at MAPrc combines clinical medical/psychiatric, research and teaching activities. He provides clinical oversight for interventional trials on the Therapeutic Brain Stimulation Team and delivers TMS education as part of MAPrc's Clinical TMS Certification Course. He can, at other times, be seen working on his PhD.

Research Interests/Activities

Dr Chen is actively involved in psychiatry teaching as a lecturer, tutor, examiner and engaged in Monash University's Psychiatry Academy responsible for reviewing and developing the university's psychiatry curriculum. Dr Chen is also the Coordinator of a RANZCP-accredited Professional Peer Review Group attended by TMS psychiatrists around Melbourne.

Dr Chen's research interests revolve around addressing clinical questions arising from treating patients with TMS. He is investigating the science behind novel methods to make TMS therapy more effective and efficient in the treatment of depression and translating these into clinical trial applications at MAPrc and the Epworth Centre for Innovation in Mental Health (ECIMH). More broadly, Dr Chen aspires to contribute to the development of treatment innovations that translate to meaningful outcomes for persons living with mental illnesses.

Featured Projects

Effectiveness of accelerated theta burst transcranial magnetic stimulation for the treatment of depression

Investigators: Professor Paul Fitzgerald, Dr Leo Chen

Duration: 2017-ongoing

Background: Depression is a common, severe and often difficult to treat illness. Repetitive transcranial magnetic stimulation (rTMS), a non-invasive brain stimulation technique, is an effective and well tolerated treatment for depression. TMS uses magnetic pulses to stimulate and change the activity in areas of the brain related to depression. Although TMS is effective, it can take up to 4–6 weeks to induce antidepressant response. This limits its applicability in clinical practice and is associated with considerable treatment costs.

Theta burst stimulation (TBS), a type of TMS, appears to produce similar effects to standard TMS but with markedly less time demands. TBS would appear an ideal intervention to use in an intensive/accelerated format where multiple daily sessions could be applied. However, the optimal TBS treatment parameters, such as treatment intensity, are still unknown and require investigation.

Aims: Compare accelerated TBS interventions of two intensities to standard once daily TMS to evaluate its relative effectiveness and rapidity of antidepressant effect.

Method/Design: We are conducting a prospective single-blind randomised controlled trial. Participants will be randomly allocated to one of three treatment conditions: standard rTMS, low intensity TBS or high intensity TBS. All groups will receive 20 active treatments. All participants will take part in interviews at baseline, week 1, 2, 4 and 8–10 weeks. Participants responding to the treatment will be followed up for six months.

Status: Recruitment is ongoing. Preliminary analysis indicates TBS exhibits equivalent antidepressant efficacy as standard rTMS.

Review of the Literature: Is Theta Burst Stimulation ready as a clinical treatment for depression?

Investigators: Leo Chen, Sung Wook Chung, Kate E. Hoy, Paul B. Fitzgerald

Status: Completed

Background: Repetitive transcranial magnetic stimulation (rTMS) is an evidence-based therapy for major depressive disorder. A standard course of rTMS typically features stimulation parameters and scheduling derived from clinical trials which, while effective, can be time- and logistically-intensive.

Academic Psychiatrists (continued)

A novel stimulation parameter, called theta burst stimulation (TBS) has been found in brain physiology studies to induce neuronal responses similar or superior to rTMS, but takes a fraction of the time to apply. Preliminary therapeutic trials investigating TBS's antidepressant potential to date have reported positive results, suggesting this novel stimulation pattern may infer therapeutic potential and adaptable to accelerated stimulation regimes given its rapid duration of application.

Aims: To provide clinicians an overview of theta burst stimulation (TBS) as a novel form of repetitive transcranial magnetic stimulation (rTMS) and commentary of whether it is ready to be introduced into clinical practice as a treatment for depression.

Method/Design: Publications were sourced by a literature search using MEDLINE, PubMed, EBSCO and a manual search of scientific journals to identify relevant articles, which were then reviewed.

Status: rTMS's state of development and clinical disadvantages are discussed, followed by a review of the neurophysiological studies that saw to TBS's development. TBS's effects on the motor and prefrontal cortices and observable changes on neuroimaging, regional brain metabolism and cerebrovascular micro-perfusion are presented, before a review of published trials investigating TBS's antidepressant potential. Safety, practical and ethical considerations in TBS are presented before a discussion of whether it is appropriate to introduce TBS into clinical practice at this time.

This literature review has been submitted for publication and is currently under review.

Dr Odette Edelstein

BA LLB (Hons) MBBS MPM FRANZCP

Clinical Research & Academic Teaching

About Odette

Odette is a consultant psychiatrist who completed her training at the Alfred Hospital. She has worked clinically with Professor Paul Fitzgerald, clinically managing research trial patients, across multiple sites and with a range of other clinical staff. These include those participating in trials investigating the use of transcranial magnetic stimulation for depression, ketamine for depression, deep brain stimulation for severe treatment refractory depression and also trials investigating the use of transcranial magnetic stimulation for obsessive compulsive disorder.

During her Academic Consultant role at MAPRC she also played a key role in the strategic overview of the Monash University MBBS psychiatry syllabus, particularly in making recommendations about the structure and content in collaboration with other key stakeholders. Her role has also incorporated medical student teaching, assessment and examination supervision for which she has received a certificate of commendation.

In addition to the above, Odette has a keen interest in Post-Traumatic Stress Disorder, both from the perspective of rehabilitation, but also the potential use of therapeutic brain stimulation as a potential treatment modality.

TEACHING ADMINISTRATION

Dr Sarah Rotstein

MBBS (Hons) MPM GCertClinEd GCertArts

Co-Curriculum and Assessment Lead for Psychiatry at Monash Medical School and Academic Coordinator for 4C Psychiatry Teaching at Alfred Health

About Sarah

Dr. Sarah Rotstein is a Stage 3 psychiatry trainee and has a strong passion for women's mental health, doctor's mental health, education and advocacy. Sarah completed her MBBS at Monash University in 2011 and commenced psychiatry training in 2014. Sarah completed her Masters of Psychiatry in 2016 and a Graduate Certificate of Clinical Education and Graduate Certificate of Arts (including history of psychiatry, Shakespeare and philosophy of mind units) with Melbourne University in 2017. Sarah's passion for both sciences and humanities provides her with a unique perspective on mental health and illness.

Role performed at MAPrc

Since 2017 Sarah has been the Co-Curriculum and Assessment Lead for Psychiatry at Monash Medical School. As a part of this role, Sarah has been leading a review and revision of the current psychiatry curriculum across Monash University's medical degree. At a local level, Sarah has been instituting new and innovative teaching methods for Alfred 4C Psychiatry students.

Research Interests/Activities

Sarah's research interests include health and medical education, stigma and attitudes towards psychiatry, women's mental health and doctor's mental health. Sarah has a passion for Shakespeare, philosophy of mind and the history of psychiatry and has published an article considering the relationship between the history of Hamlet performance and the history of psychiatry.

Anne Crawford

B.SocSci (Hons)

Administrative Officer/MBBS Clinical Site Administrator

About Anne

Before starting with MAPrc in 2009, Anne was employed at the Royal Children's hospital for six years in the Audiology Department, firstly as an administrative assistant, and then relieving department administrative manager. Prior to working at the RCH Anne worked in the live music industry for a number of years at various venues in Melbourne, including the Espy and the Prince of Wales. She has been with MAPrc for almost ten years now as the local MBBS Clinical Site Administrator at the Alfred Hospital. For the four years from June 2010 her role expanded to include that of the Central Discipline Administrator for Monash University MBBS Psychiatry teaching. She was based partly at the Monash Medical Centre during this time. In July 2014 Anne changed to part-time employment with MAPrc, based at Alfred Health. Her current role includes that of local MBBS Clinical Site Administrator for the psychiatry teaching program, as well as providing general administrative support to the MAPrc family.

Role Performed at MAPrc

The MBBS Clinical Site Administrator is responsible for facilitating the smooth running of the Monash University MBBS Psychiatry teaching program, in compliance with the Medicine, Nursing, & Health Sciences Faculty guidelines and requirements.

In liaison with Dr Sarah Rotstein (our Clinical Site Coordinator), Anne organises the local psychiatry teaching program at Alfred Health. We have four groups of students over the course of each year. For each of these groups Anne arranges a week-long hospital orientation program, schedules clinical placements for the students across a variety of Alfred Psychiatry clinics as well as Malvern Private Hospital, organises a comprehensive tutorial program, and provides support to the students. "We have a great teaching team at MAPrc and my administrative role within the team is an enjoyable and extremely rewarding one."

MAPrc ADMINISTRATION

Michaela Corr

MAPrc Executive Officer

Background

Michaela joined MAPrc in April 2016. Born and raised in Vancouver, Canada, Michaela has spent her career providing business support to organisations that focus on the wellbeing of others. After graduating from the British Columbia Institute of Technology with a bachelor degree in Business Administration, Michaela worked at organisations including Kidproof Canada, a company focused on children's safety and the promotion of healthy eating and active lifestyles in schools, and Vancouver Foundation, Canada's largest community foundation which grants out millions of dollars each year to support a range of community-lead initiatives across British Columbia. Michaela has a passion for travel and has travelled regularly throughout her life. In 2012, she lived in Kenya and South Africa for a year where she volunteered teaching English and working with women in impoverished areas to create sustainable businesses. Initially, Michaela joined MAPrc as a temporary staff member but within a couple of days she knew she wanted to stay longer and jumped at the opportunity to learn and grow within such a passionate and dynamic organisation. More than just her love for the cause, Michaela was inspired by the research conducted at the centre and the determination and focus shown by each employee to ensure a better life for those who suffer from ill mental health.

Role Performed at MAPrc

Reporting directly to the Director of MAPrc, as the Executive Officer, Michaela provides high-level administrative support across a wide range of research and academic projects, as well as providing executive-level support to the Director, including liaising with internal and external stakeholders, coordinating events, and developing and implementing strategies to develop donors and contributions in support of MAPrc. In 2017, Michaela was appointed Acting Manager for a three-month interim role. During this time, Michaela was able to utilize her business skills to help review and restructure key operational activities within the organisation increasing overall efficiency across MAPrc.

Bernadette Cheshire

Dip. Adult Teaching Information Technology

Receptionist/Office Manager

About Bernadette

I have worked most of my career in administration roles, both here in Australia and for many years living in the U.K. I worked for Bedfordshire County Council as admin support for the Social Services and Youth Offending departments, and also as an Executive Assistant for the Chief Executive. I have also been involved in teaching information technology to Adults and ran an IT Learning Centre in the U.K., which was part of a collaboration involving Milton Keynes College, a large supermarket chain (Tesco) and a Union (USDAW). It was based at a Tesco Distribution centre and gave the warehouse staff the opportunity to enhance their skills in IT or Literacy / Numeracy. This training was free for the workers. One of my previous administration support roles included working with social work teams in Mental Health so when I joined MAPrc I was able to put into use the previous skill sets I had.

Role Performed at MAPrc

I am part of a very strong small admin team at MAPrc. My main role is to run the reception and ensure that any of the clients who come to MAPrc are greeted in a warm, friendly manner, as I am conscious that coming into a medical environment could be stressful for them. I am responsible for any of the day to day finances e.g. Petty Cash and general office duties and working with/ for the Research Manager to ensure it all runs smoothly. MAPrc has a strong student body and I am available to help them settle in and deal with any issues they may have, this also applies to any staff members who need help. MAPrc is a very busy, thriving centre and it is such an honour to be part of their amazing achievements.

MAPrc HDR AND HONOURS STUDENTS

Women's Mental Health

Dr Carolyn Breadon

PhD Candidate, Women's Mental Health
Supervisor: Prof. Jayashri Kulkarni & Dr Caroline Gurvich
Project Title: Neuroendocrinology and autoimmune triggers for post-partum psychosis.

Ms Heather Gilbert

PhD Candidate, Women's Mental Health
Supervisors: Prof. Jayashri Kulkarni & Dr Caroline Gurvich
Project Title: Development of a New Model of Support and Advocacy for Pregnant Women & New Mothers with severe mental illness.

Siddarth Narambarath

BSci (Hons), Women's Mental Health
Supervisor: Dr Caroline Gurvich
Project Title: Cognitive Control in Borderline Personality Disorder.

Hariklia Vagias

BSci (Hons), Women's Mental Health
Supervisor: Dr Caroline Gurvich
Project Title: Group differences of cytokine levels in Borderline Personality Disorder and Non-psychiatric controls.

Jana Grieger

BPsych Hons), Women's Mental Health
Supervisor: Prof. Jayashri Kulkarni
Project Title: Psychological Trauma Type and Timing of Exposure: Effects on Emotion Regulation Difficulties.

Caitlin Bleeker

BPsych Hons, Women's Mental Health
Supervisor: Dr Caroline Gurvich
Project Title: The impact of early life trauma type on inhibitory control during perimenopause.

Jacinta Cheng

BMedSci Hons, Women's Mental Health
Supervisors: Prof Jayashri Kulkarni,Dr Caroline Gurvich & Dr Natalie Thomas
Project Title: The Effect of Early Life Trauma on Cognition and Emotion Regulation in Complex Trauma Disorder.

Sai Ponnaganti

BMedSci Hons, Women's Mental Health
Supervisor: Dr Caroline Gurvich
Project Title: How does age of trauma exposure influence the relationship between early life adversity and dissociation.

MAPrc HDR and Honours Students (continued)

Therapeutic Brain Stimulation

Dr Leo Chen

PhD Candidate, Therapeutic Brain Stimulation
Supervisor: Prof. Paul Fitzgerald & Assoc. Prof. Kate Hoy
Project title: Investigating the efficiency and efficacy of repetitive transcranial magnetic stimulation in depression.

Sung Wook Chung

PhD Candidate, Therapeutic Brain Stimulation
Supervisor: Prof. Paul Fitzgerald & Assoc. Prof. Kate Hoy
Project title: Developing optimal methods for theta burst prefrontal brain stimulation.

Magelage Perera

PhD Candidate, Therapeutic Brain Stimulation
Supervisor: Prof. Paul Fitzgerald & Dr Neil Bailey
Project title: Treatment of obsessive compulsive disorder using transcranial alternating current stimulation.

Xianwei Che

PhD Candidate, Therapeutic Brain Stimulation
Supervisors: Prof. Paul Fitzgerald & Dr Robin Cash
Project title: Investigating the influence and mechanisms of social support on pain experience.

Aron Hill

PhD Candidate, Therapeutic Brain Stimulation
Supervisor: Prof. Paul Fitzgerald & Assoc. Prof. Kate Hoy
Project title: A Neurophysiological Investigation into Optimised Approaches to Transcranial Direct Current Stimulation for Neurocognitive Enhancement.

Marie-Claire Davis

PhD Candidate, Therapeutic Brain Stimulation
Supervisors: Prof. Paul Fitzgerald & Assoc. Prof. Kate Hoy
Project title: Transcranial alternating current stimulation for apathy in Huntington's disease.

Sin Ki Ng

PhD Candidate, Therapeutic Brain Stimulation
Supervisors: Prof. Paul Fitzgerald & Dr Bernadette Fitzgibbon
Project title: Investigating EEG correlates of attention in ADHD, healthy controls, and meditators.

Robert Cooper

PhD Candidate, Therapeutic Brain Stimulation
Supervisors: Prof. Paul Fitzgerald & Assoc. Prof. Kate Hoy
Project title: Effects of frequency on enhancement & modulation of neural oscillations using brief transcranial alternating current stimulation (tACS).

MAPrc HDR and Honours Students (continued)

Jessica Michael

PhD Candidate, Therapeutic Brain Stimulation
Supervisor: Dr Manreena Kaur
Project title: Adapting Neuro-cardiac-guided Repetitive Transcranial Magnetic Stimulation for Low Frequency Treatment for Depression.

Andrea Marcu

PhD Candidate, Therapeutic Brain Stimulation
Supervisor: Dr Neil Bailey
Project title: Investigating EEG correlates of attention in ADHD, healthy controls, and meditators.

Aleksandra Miljevic

PhD Candidate, Therapeutic Brain Stimulation
Supervisors: Prof. Paul Fitzgerald & Dr Neil Bailey
Project title: Associations between individual differences, rTMS-induced brain changes and relapse in depression.

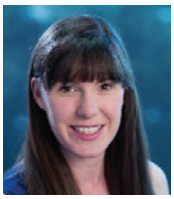
Melanie Emonson

DPsych, Therapeutic Brain Stimulation
Supervisors: Prof. Paul Fitzgerald & Assoc. Prof. Kate Hoy
Project title: Investigating Neurobiological and cognitive changes following transcranial direct current stimulation in healthy aging and mild cognitive impairment.

Hannah Coyle

DPsych, Therapeutic Brain Stimulation
Supervisor: Assoc. Prof. Kate Hoy & Dr Neil Bailey
Project title: The relationship between cortical activity and cognitive function after traumatic brain injury.

Karyn Richardson



DPsych, Therapeutic Brain Stimulation
Supervisor: Assoc. Prof. Kate Hoy
Project title: Cortical Inhibition and working Memory in Schizphrenia: A TMS-EEG Study.

Oscar Murphy

DPsych, Therapeutic Brain Stimulation
Supervisor: Assoc. Prof. Kate Hoy
Project title: Behavioural and neurophysiological effects of transcranial electrical stimulation (tES) in healthy and depressed individuals: A TMS-EEG study.

Gregory Roebuck

MBBS/MD Research Project, Therapeutic Brain Stimulation
Supervisor: Dr Bernadette Fitzgibbon
Project title: Ultra-Marathon Runners: A psychological and physiological profile.

MAPrc HDR and Honours Students (continued)

Nihal Nayak

BMedSci Hons, Therapeutic Brain Stimulation
Supervisor: Dr Bernadette Fitzgibbon
Project title: Exploring pain tolerance following Transcranial Direct Current Stimulation: impact of pain-related cognitions and personality.

Harry Geddes

Honours, Therapeutic Brain Stimulation
Supervisor: Dr Neil Bailey
Project title: A TMS-EEG study on mindfulness meditation: investigating cortical inhibition and the balance of excitation and inhibition in the left Dorsolateral Prefrontal cortex.

Oliver Baell

Honours, Therapeutic Brain Stimulation
Supervisor: Dr Neil Bailey
Project title: Moderately Experienced Mindfulness Meditators do not show Differences in Neurophysiological Markers of Attentional Resource Allocation.

Jake Payne

Honours, Therapeutic Brain Stimulation
Supervisor: Dr Neil Bailey
Project title: Exploring Attentional-Related Neural Activity in Mindfulness Meditators.

Mental Health Services Research

Shayden Bryce

B. B. N. Sc, Neuropsychology Doctoral Candidate, Mental Health Services Research
Supervisor: Dr Stuart Lee
Project Title: Examining the benefits of cognitive remediation on neurocognitive and functional outcomes in schizophrenia relative to an active control.

Mr Richard Lawrence

B.A, Clinical Psychology Doctoral Candidate, Mental Health Services Research
Supervisor: Dr Stuart Lee
Project Title: Improving coping and enhancing quality of life for patients undergoing stem cell transplantation for haematological cancers.

Mr Ross Anderson

B.A, PhD Candidate, Mental Health Services Research
Supervisor: Dr Stuart Lee
Project Title: Psychological wellbeing from the perspective of adolescents with vision impairment.

MAPrc HDR and Honours Students (continued)

Cognitive Neuropsychiatry

Ms Elizabeth Thomas

PhD Candidate, Cognitive Neuropsychiatry
Supervisor: Dr Caroline Gurvich
Project Title: The influence of the glutamatergic system on cognition across the schizotypy/schizophrenia continuum.

Ms Jacqueline Riddiford

PhD Candidate, Cognitive Neuropsychi atry
Supervisor: Dr Caroline Gurvich
Project Title: The mirror neuron system and autism spectrum disorder: An investigation into visual processing influences.

Mr Sean Carruthers

PhD Candidate, Cognitive Neuropsychiatry
Supervisor: Dr Caroline Gurvich
Project Title: Executive functioning and the muscarinic system in schizophrenia.

Dr Rachel Brand

PhD Candidate, Cognitive Neuropsychiatry
Supervisor: Dr Neil Thomas
Project Title: Investigating the role of trauma in auditory hallucinations.

Ms Stephanie Louise

PhD Candidate, Cognitive Neuropsychiatry
Supervisor: Dr Neil Thomas
Project Title: The impact of a mindfulness-based intervention for auditory hallucinations.

Ms Monique Scott

PhD Candidate, Cognitive Neuropsychiatry
Supervisor: Dr Neil Thomas
Project Title: Understanding negative voice content in persons with auditory verbal hallucinations.

Ms Bridget Bowe

MPysch, Cognitive Neuropsychiatry
Supervisor: Dr Neil Thomas
Project Title: Auditory hallucinations or hearing voices? An exploration of the meaning and impact of labels.

Ms Natalie Feary

MPsych, Cognitive Neuropsychiatry
Supervisor: Dr Neil Thomas
Project Title: Experiences of trauma focused therapy for auditory hallucinations.

MAPrc HDR and Honours Students (continued)

Ms Elissa Moore

MPsych, Cognitive Neuropsychiatry
Supervisor: Dr Neil Thomas
Project Title: Experiences of a combined smartphone-assisted coping strategy application and face-to-face therapy for distressing voices: A qualitative study.

Ms Inge Gnatt

Honours, Cognitive Neuropsychiatry
Supervisor: Dr Neil Thomas
Project Title: Development of the Making Sense of Voices Scale to inform treatment and recovery in people who hear voices.

Mr Joshua Kontrabarsky

BMedSci Hons, Cognitive Neuropsychiatry
Supervisor: Dr Caroline Gurvich
Project Title: Exploring antisaccades in schizophrenia: a dopaminergic candidate gene study.

Perceptual and Clinical Neuroscience Laboratory

Mr Phillip Law

PhD Candidate, Perceptual and Clinical Neuroscience Laboratory
Supervisors: Dr Steven Miller & Dr Caroline Gurvich
Project Title: Investigating binocular rivalry in healthy individuals and bipolar disorder: excluding confounds and optimising methods for large-scale endophenotype studies.

MONASH ALFRED PSYCHIATRY RESEARCH CENTRE (MAPrc)

FINANCIAL STATEMENT

January 1st – December 31st 2015–2018

INCOME

Category	2015	2016	2017	2018
Higher Degree Supervision & Teaching	$446,093	$563,966	$963,976	$1,068,223
Competitive Research Grant Funding	$1,775,151	$982,437	$1,017,461	$1,210,288
Commercial Research Funding	$405,068	$743,428	$1,392,272	$1,003,274
Government/Institutional Grants	$1,588,017	$1,866,653	$2,088,373	$2,583,767
Short Courses/Conferences	$140,753	$312,759	$141,640	$158,540
MAPrc Clinics Revenue	$71,060	$62,760	$48,622	$76,413
Fund Raising & Donations	$113,035	$71,623	$234,605	$116,165
Partnerships	$175,000	$181,460	$71,950	$87,611
TOTAL	**$4,364,117**	**$4,804,694**	**$5,958,900**	**$6,304,281**

EXPENDITURE

Salary Related Costs	$2,794,551	$3,509,676	$3,966,418	$4,410,729
Infrastructure/Administration	$340,780	$588,471	$572,467	$654,363
Direct Research Costs	$663,908	$446,223	$140,769	$93,406
Depreciation	$16,683	$14,263	$14,254	$12,283
Institutional Overheads & Charges	$723,874	$932,604	$1,413,208	$1,302563
TOTAL	**$4,539,797**	**$5,561,037**	**$6,107,116**	**$6,473,343**
NET SURPLUS / (DEFICIT)	**$175,680**	**($686,543)**	**($148,216)**	**($169,062)**

Notes:

1. Competitive research grant funding includes NH&MRC, ARC and other Category 1 competitive grants awarded to researchers based on competitive application schemes.
2. Commercial income includes industry related research contracts and revenue from clinical trials conducted on behalf of pharmaceutical and other company sponsors.
3. Government / Institutional grants include i) tenders and other competitive research schemes, ii) Victorian Department of Health funding for academic positions at Alfred Health and other operating / infrastructure funding, as well as iii) Monash University dispersed federal government funding generated on the basis of a) category one competitive research dollars b) HDR supervision and c) MBBS undergraduate teaching activities by MAPrc.
4. Institutional Overheads and Charges refers to Monash University central, faculty and school charges.

Financial Statement (continued)

Financial Report Summary

MAPrc is a joint Centre of Monash University and Alfred Health. As a result, MAPrc finances are split across both Alfred Health and Monash University finance systems.

The report is an integrated Alfred Health – Monash University report of MAPrc financial activity for the period 2015–2018 calendar years reported in broad categories of income and expenditure.

This summary relates to financial activity in 2017 and 2018. Overall MAPrc recorded expenditure greater than income in both 2017 and 2018. Both total revenue and total expenditure increased in the periods reflecting increased activity and productivity in the centre. Against the overall trend of increased revenue in the period, commercial revenue decreased in 2018 compared with 2017, and fund raising and donations reduced significantly in 2018. In relation to expenditure, the main drivers were increases in salaries and infrastructure/administration costs.

Despite the consecutive years of expenditure greater than revenue, MAPrc carries forward a balance of funding which ensures ongoing viability and financial stability.

2017/2018 Highlights

Competitive Research Grant Funding

In 2017 and 2018 competitive research grant revenue was up slightly from 2016 but still significantly less than in 2015. Competitive research grants are comprised predominantly of project grants and Fellowships from NH&MRC and ARC. Funding received from this category in 2017 and 2018 was from several ongoing grants and one new grant awarded to professor Kulkarni and her team in 2017 titled; "A randomised controlled trial of NMDA antagonist, memantine, for the treatment of borderline personality disorder". Competitive research grants are extremely challenging to attain but play a critical role in generating funding for research projects as well as for generating infrastructure funding for the Centre. For every dollar of competitive research funding obtained, the University receives a proportionate amount of infrastructure funding via the Federal Government. A proportion of this infrastructure funding is passed on to the centre and the university also supports research in a similar manner with an internal infrastructure scheme.

Commercial Research Funding

There was a substantial increase in commercial research funding in 2017. This represents funding received from companies such as pharmaceutical or treatment device companies. In 2016, MAPrc merged the Aged Clinical Trials team based at Caulfield Hospital (mainly conducting trials in dementia) into the MAPrc Psychopharmacology/Industry Sponsored Trials Unit. This resulted in increased revenue from pharmaceutical company sponsored trials in 2017 along with increased expenditures, including salaries and other costs associated with conducting the additional clinical trials. In 2018, MAPrc reduced the number of sponsored trials in adults resulting in an overall reduction in commercial revenue.

Government/Institutional Grants Vs Institutional Overheads & Charges

Grants awarded to MAPrc by Federal and State Government for research and other activities are captured under this category, as well as indirect government funding via contributions from the hospital and university operating budgets. Alfred Health provide rent and facilities funding to MAPrc, and cross subsidise a proportion of the Centre's operational costs. This makes up a portion of the Government / Institutional Grants revenue reported. Monash University collect infrastructure funding from the federal government based on research grant performance, higher degree supervision and teaching activities. The University pass on in full the infrastructure MAPrc generates through these activities to support operational costs. The University then applies levies at central, faculty and school level to cover institutional and overhead costs. These levies are reported under the category of institutional Overheads.

Short Courses/Conference

In 2017 and 2018 MAPrc ran a number of short courses in the use of transcranial magnetic stimulation (TMS) for treating depression to clinicians and researchers as well as conferences in women's mental health and brain stimulation.

Partnerships

Partnerships revenue in 2017 and 2018 relates to Swinburne University who have for several years co-located research staff and students at MAPrc and who collaborate with MAPrc on a variety of projects.

2017/2018 PUBLICATIONS

Articles

Anderson R, Warren N, Misajon R, Lee S (Accepted August 2018). "You need the more relaxed side, but you also need the adrenaline": promoting physical health as perceived by youth with vision impairment. Disability and Rehabilitation.

Bailey NW, Hassed CS, Chambers R, Owen J, Jones A, Wootten A (2018). Evidence based guidelines for mindfulness in schools: A guide for teachers and principals. Smiling Mind White Paper.

Bailey NW, Hoy KE, Rogasch NC, Thomson RH, McQueen S, Elliot D, Sullivan CM, Fulcher BD, Daskalakis ZJ, Fitzgerald PB (2018). Differentiating responders and non-responders to rTMS treatment for depression after one week using resting EEG connectivity measures. Journal of Affective Disorders.

Bailey NW, Opie JL, Hassed CS, Chambers R (Accepted). Meditation Practice, Dispositional Mindfulness, Personality and Program Outcomes in Mindfulness Training for Medical Students. Focus on Health Professional Education: A Multi-Professional Journal.

Bailey NW, Raj K, Freedman G, Rogasch NC, Fitzgibbon B, Van Dam N, Fitzgerald PB (Accepted). Mindfulness meditators do not show differences in electrophysiological measures of error processing. Mindfulness.

Bailey, NW, Hoy, KE, Rogasch, NC, Thomson, RH, McQueen, S, Elliot, D, Sullivan, CM, Fulcher, BD, Daskalakis, ZJ & Fitzgerald, PB 2018, 'Responders to rTMS for depression show increased fronto-midline theta and theta connectivity compared to non-responders' Brain Stimulation, vol. 11, no. 1, pp. 190–203.

Bailey, N, Freedman, G, Raj, K, Sullivan, C, Rogasch, N, Chung, S, Hoy, K, Chambers, R, Hassed, C, Van Dam, N & Fitzgerald, P 2018, Mindfulness meditators show altered distributions of early and late neural activity markers of attention in a response inhibition task. doi: https://doi.org/10.1101/396259.

Bailey, NW, Nguyen, J, Bialylew, E, Corin, SE, Gilbertson, T, Chambers, R & Fitzgerald, PB 2018, 'Effect on Well-Being from an Online Mindfulness Intervention: "Mindful in May"' Mindfulness, vol. 9, no. 5, pp. 1637–1647.

Bailey, NW, Rogasch, NC, Hoy, KE, Maller, JJ, Segrave, RA, Sullivan, CM & Fitzgerald, PB 2017, 'Increased gamma connectivity during working memory retention following traumatic brain injury' Brain Injury, vol. 31, no. 3.

Beilharz, Francesca, Rossell, Susan L., 2017. Treatment modifications and suggestions to address visual abnormalities in body dysmorphic disorder, Journal of Cognitive Psychotherapy, Vol. 31, no. 4 (2017), pp. 272–284.

Bell, I. H., Fielding-Smith, S., Hayward, M., Rossell, S. L., Lim, M. H., Farhall, J., & Thomas, N. (2018). Smartphone-based ecological momentary assessment and intervention in a coping-focused intervention for hearing voices (SAVVy): Study protocol for a randomised controlled trial. Trials, 19, 262.

Bell, I. H., Fielding-Smith, S., Rossell, S. L., Hayward, M., Farhall, J., Lim, M. H., Thomas, N. (2018). Smartphone-based ecological momentary assessment and intervention in a blended coping-focused therapy for distressing voices: Development and case illustration. Internet Interventions, 14, 18–25.

Bell, I. H., Lim, M. H., & Thomas, N. (in press). The therapeutic use of digital technology in psychosis. J. Badcock & G. Paulik-White (Eds.), A clinical introduction to psychosis: Foundations for clinical and clinical neuropsychologists. London: Elsevier.

Bell, I. H., Lim, M. H., Rossell, S. L., & Thomas, N. (2017). Systematic review of ecological momentary assessment and intervention in the treatment of psychotic disorders. Psychiatric Services, 68, 1172–1181.

Berk, LA, Hallam, KT, Venugopal, K, Lewis, A, Austin, DW, Kulkarni, J, Dodd, S, de Castella, A, Fitzgerald, PB & Berk, M 2017, 'Impact of irritability: a 2-year observational study of outpatients with bipolar I or schizoaffective disorder' Bipolar Disorders, vol. 19, no. 3, pp. 184–197.

Blair-West, LF, Hoy, KE, Hall, PJ, Fitzgerald, PB & Fitzgibbon, BM 2018, 'No change in social decision-making following transcranial direct current stimulation of the right temporoparietal junction' Frontiers in Neuroscience, vol. 12, no. APR, 258.

Brand, R., McEnery, C., Bendall, S., Rossell, S. L., & Thomas, N. (2018). Do trauma-focused psychological interventions have an effect on psychotic symptoms? A systematic review and meta-analysis. Schizophrenia Research, 195, 13–22.

Brand, R., Rossell, S. L., Bendall, S., & Thomas, N. (2017). Can we use an interventionist-causal paradigm to untangle the relationship between trauma, PTSD and psychosis? Frontiers in Psychology, 8, e306.

2017/2018 Publications (continued)

Brand, R., Rossell, S.L., McEnery, C., Bendall, S. & Thomas, N. (2017). Trauma-focussed treatments in psychosis: A meta-analysis. Schizophrenia Research. Volume 195, May 2018, Pages 13–22.

Brand, R., Thomas, N., & Murray, G. (in press). The assessment of people with psychotic and bipolar disorders. In M. Sellbom & J. Suhr (Eds.), Cambridge handbook of clinical assessment and diagnosis. Cambridge, England: Cambridge University Press.

Brennan, JH, Mitra, B, Synnot, A, McKenzie, J, Willmott, C, McIntosh, AS, Maller, JJ & Rosenfeld, JV 2017, 'Accelerometers for the assessment of concussion in male athletes: A systematic review and meta-analysis' Sports Medicine, vol 47, no. 3, pp. 469–478.

Bryce S, Warren N, Ponsford J, Rossell S, Lee S (2018). Understanding the lived experience of cognitive remediation in schizophrenia: A qualitative comparison with an active control. Psychiatric Rehabilitation Journal, 41(4), 302–11.

Bryce SD, Lee SJ, Ponsford J, Lawrence RJ, Tan EJ, Rossell SL (2018). The impact of intrinsic motivation on session attendance and reliable cognitive improvement in cognitive remediation in schizophrenia. Schizophrenia Research, 202, 354–60.

Bryce SD, Ponsford JL, Rossell SL, Lee SJ (2019). How cognitive remediation can be utilized strategically to enhance social and independent living self-efficacy. Schizophrenia Research, 204, 421–22.

Bryce SD, Rossell SL, Lee SJ, Lawrence RJ, Tan EJ, Carruthers SP, Ponsford JL (2018). Neurocognitive and self-efficacy benefits of cognitive remediation in schizophrenia: A randomized controlled trial. Journal of the International Neuropsychological Society, 24(6), 549–62.

Byrne, J., Hughes, M., Rossell, S.L., & Murray, G. (2017). Time of day differences in neural reward functioning in healthy young men. Journal of Neuroscience. Journal of Neuroscience 13 September 2017, 37 (37) 8895–8900.

Calafiore, D., Rossell, S.L. & Van Rheenen, T.E. (2017). Cognitive abilities in first-degree relatives of individuals with bipolar disorder. Journal of Affective Disorders.

Calati, R, Maller, JJ, Meslin, C, Lopez-Castroman, J, Ritchie, K, Courtet, P & Artero, S 2018, 'Repatriation is associated with isthmus cingulate cortex reduction in community-dwelling elderly' World Journal of Biological Psychiatry, vol. 19, no. 6, pp. 421–430.

Carruthers, SP, Gurvich, CT, Cropley, VL, Pantelis, C, Bousman, C, Lenroot, RK, Bruggemann, JM, Weickert, T, Australian Schizophrenia Research Bank & Rossell, SL 2018, 'The effects of a muscarinic receptor 1 gene variant on cortical thickness and surface area in schizophrenia' Psychiatry Research – Neuroimaging, vol. 280, pp. 62–64.

Cash, RFH, Jegatheeswaran, G, Ni, Z & Chen, R 2017, 'Modulation of the Direction and Magnitude of Hebbian Plasticity in Human Motor Cortex by Stimulus Intensity and Concurrent Inhibition' Brain Stimulation, vol. 10, no. 1, pp. 83–90.

Cash, RFH, Noda, Y, Zomorrodi, R, Radhu, N, Farzan, F, Rajji, TK, Fitzgerald, PB, Chen, R, Daskalakis, ZJ & Blumberger, DM 2017, 'Characterization of Glutamatergic and GABA A-Mediated Neurotransmission in Motor and Dorsolateral Prefrontal Cortex Using Paired-Pulse TMS-EEG' Neuropsychopharmacology, vol. 42, no. 2, pp. 502–511.

Che, X, Cash, R, Fitzgerald, P & Fitzgibbon, BM 2018, 'The Social Regulation of Pain: Autonomic and Neurophysiological Changes Associated With Perceived Threat' Journal of Pain, vol. 19, no. 5, pp. 496–505.

Chung SW, Sullivan C, Rogasch N, Hoy K, Bailey NW, Cash R, Fitzgerald P (2018). The effects of individualised intermittent theta burst stimulation in the prefrontal cortex: a TMS-EEG study. Human Brain Mapping.

Chung, SW, Lewis, BP, Rogasch, NC, Saeki, T, Thomson, RH, Hoy, KE, Bailey, NW & Fitzgerald, PB 2017, 'Demonstration of short-term plasticity in the dorsolateral prefrontal cortex with theta burst stimulation: A TMS-EEG study' Clinical Neurophysiology, vol. 128, no. 7, pp. 1117–1126.

Chung, SW, Rogasch, NC, Hoy, KE & Fitzgerald, PB 2018, 'The effect of single and repeated prefrontal intermittent theta burst stimulation on cortical reactivity and working memory' Brain Stimulation, vol. 11, no. 3, pp. 566–574.

Chung, SW, Rogasch, NC, Hoy, KE, Sullivan, CM, Cash, RFH & Fitzgerald, PB 2018, 'Impact of different intensities of intermittent theta burst stimulation on the cortical properties during TMS-EEG and working memory performance' Human Brain Mapping, vol. 39, no. 2, pp. 783–802.

2017/2018 Publications (continued)

Clark, V, Baker, A, Lewin, T, Richmond, R, Kay-Lambkin, F, Filia, S, Castle, D, Williams, J & Todd, J 2017, 'Self-Reported Reasons for Smoking: Predicting Abstinence and Implications for Smoking Cessation Treatments Among Those With a Psychotic Disorder' Journal of Dual Diagnosis, vol. 13, no. 1, pp. 6–14.

Contreras, N., Tan, E.J., Lee, S., Castle, D.J., & Rossell, S.L. (2017). Using visual processing training to enhance standard cognitive remediation outcomes in schizophrenia: A pilot study. Psychiatry Research. Volume 262, April 2018, Pages 494–499.

Contreras, NA, Castle, DJ, Crosse, C, Morgain, D, Fossey, E, Harvey, C & Rossell, SL 2017, 'How effective is cognitive remediation in enhancing vocational outcomes for job seekers with severe mental illness in Australia?' Australian Psychologist.

Dean, O, Gliddon, E, Van Rheenen, TE, Giorlando, F, Davidson, SK, Kaur, M, Ngo, T & Williams, LJ 2018, 'An update on adjunctive treatment options for bipolar disorder' Bipolar Disorders, vol. 20, no. 2, 12601, pp. 87–96. https://doi.org/10.1111/bdi.12601.

Dobson, H, Lee, S, Breadon, C, Cleland, H, Moncur, D & Kulkarni, J 2018, 'How self-inflicted injury and gender impacted the outcome following a severe burn' Burns.

Donse, L, Sack, AT, Fitzgerald, PB & Arns, MW 2017, 'Sleep disturbances in obsessive-compulsive disorder: Association with non-response to repetitive transcranial magnetic stimulation (rTMS)' Journal of Anxiety Disorders, vol. 49, pp. 31–39.

Dowling NA, Merkouris SS, Manning V, Volberg R, Lee SJ, Rodda SN, Lubman DI (2018). Screening for problem gambling within mental health services: A comparison of the classification accuracy of brief instruments. Addiction, 113(6), 1088–1104.

Dunne A, Gilbert F, Lee SJ, Daffern M. The role of aggression-related early maladaptive schemas and schema modes in aggression in a prisoner sample. Aggressive Behavior, 44(3), 246–256.

Fernandez, L, Albein-Urios, N, Kirkovski, M, McGinley, JL, Murphy, AT, Hyde, C, Stokes, MA, Rinehart, NJ & Enticott, PG 2017, 'Cathodal Transcranial Direct Current Stimulation (tDCS) to the Right Cerebellar Hemisphere Affects Motor Adaptation During Gait' Cerebellum, vol. 16, no. 1, pp. 168–177.

Fitzgerald, PB, Hoy, KE, Elliot, D, McQueen, S, Wambeek, LE & Daskalakis, ZJ 2018, 'Exploring alternative rTMS strategies in non-responders to standard high frequency left-sided treatment: A switching study' Journal of Affective Disorders, vol. 232, pp. 79–82.

Fitzgerald, PB, Hoy, KE, Elliot, D, McQueen, S, Wambeek, LE, Chen, L, Clinton, AM, Downey, G & Daskalakis, ZJ 2018, 'A pilot study of the comparative efficacy of 100 Hz magnetic seizure therapy and electroconvulsive therapy in persistent depression' Depression and Anxiety, vol. 35, no. 5, pp. 393–401.

Fitzgerald, PB, Hoy, KE, Elliot, D, Susan Mcqueen, RN, Wambeek, LE & Daskalakis, ZJ 2018, 'Accelerated repetitive transcranial magnetic stimulation in the treatment of depression' Neuropsychopharmacology, vol. 43, pp. 1565–1572.

Fitzgerald, PB, Segrave, R, Richardson, KE, Knox, LA, Herring, S, Daskalakis, ZJ & Bittar, RG 2018, 'A pilot study of bed nucleus of the stria terminalis deep brain stimulation in treatment-resistant depression' Brain Stimulation, vol. 11, no. 4, pp. 921–928.

Fitzgibbon B, Hoy K, Knox L, Guymer EK, Littlejohn G, Elliot D, Wambeek LE, McQueen S, Elford KA, Lee SJ, Enticott PG, Fitzgerald PB (2018). Evidence for the improvement of fatigue in fibromyalgia: a 4-week left dorsolateral prefrontal cortex repetitive transcranial magnetic stimulation randomised-controlled trial. European Journal of Pain, 22(7), 1255–1267.

Fitzgibbon, BM, Kirkovski, M, Bailey, NW, Thomson, RH, Eisenberger, N, Enticott, PG & Fitzgerald, P 2017, 'Low-frequency brain stimulation to the left dorsolateral prefrontal cortex increases the negative impact of social exclusion among those high in personal distress' Social Neuroscience, vol. 12, no. 3, pp. 237 – 241.

Fletcher, K., Foley, F., Thomas, N., Michalak, E., Berk, L., Berk, M., Bowe, S., Cotton, S., Engel, L., Johnson, S. L., Jones, S., Kyrios, M., Lapsley, S., Mihalopoulos, C., Perich, T., & Murray, G. (2018). Web-based intervention to improve quality of life in late-stage bipolar disorder (ORBIT): Randomised controlled trial protocol. BMC Psychiatry, 18, e221.

Grace, SA, Buchanan, BG, Maller, JJ, Toh, WL, Castle, DJ & Rossell, SL 2017, 'Reduced cortical thickness in body dysmorphic disorder' Psychiatry Research – Neuroimaging, vol 259, pp. 25–28.

2017/2018 Publications (continued)

Green, AE, Fitzgerald, PB, Johnston, PJ, Nathan, PJ, Kulkarni, J & Croft, RJ 2017, 'Evidence for a differential contribution of early perceptual and late cognitive processes during encoding to episodic memory impairment in schizophrenia' World Journal of Biological Psychiatry, vol. 18, no. 5, pp. 369–381.

Greenwood, L-M, Leung, S, Michie, PT, Green, A, Nathan, PJ, Fitzgerald, P, Johnston, P, Solowij, N, Kulkarni, J & Croft, RJ 2018, 'The effects of glycine on auditory mismatch negativity in schizophrenia' Schizophrenia Research, vol. 191, pp. 61–69.

Grigg, J, Worsley, R, Thew, C, Gurvich, C, Thomas, N & Kulkarni, J 2017, 'Antipsychotic-induced hyperprolactinemia: synthesis of world-wide guidelines and integrated recommendations for assessment, management and future research' Psychopharmacology, vol. 234, no. 22, pp. 3279–3297.

Gurvich, C, Gavrilidis, E, Worsley, R, Hadaib, A, Thomas, N & Kulkarni, J 2018, 'Menstrual cycle irregularity and menopause status influence cognition in women with schizophrenia' Psychoneuroendocrinology, vol. 96, pp. 173–178.

Gurvich, C, Hoy, K, Thomas, N & Kulkarni, J 2018, 'Sex differences and the influence of sex hormones on cognition through adulthood and the aging process' Brain Sciences, vol. 8, no. 9, 163.

Hashemirad, F, Fitzgerald, PB, Zoghi, M & Jaberzadeh, S 2017, 'Single-session anodal tDCS with small-size stimulating electrodes over frontoparietal superficial sites does not affect motor sequence learning' Frontiers in Human Neuroscience, vol. 11, 153.

Hashemirad, F, Fitzgerald, PB, Zoghi, M, Hashemirad, M & Jaberzadeh, S 2017, 'The effects of inter-trial interval on implicit learning of sequential visual isometric pinch task' Journal of Bodywork and Movement Therapies, vol 21, no. 3, pp. 626–632.

Hashemirad, F, Zoghi, M, Fitzgerald, PB & Jaberzadeh, S 2017, 'Reliability of motor evoked potentials induced by transcranial magnetic stimulation: The effects of initial motor evoked potentials removal' Basic and Clinical Neuroscience, vol 8, no. 1, pp. 43–50.

Hayward, M., Jones, A. M., Bogen-Johnston, L., Thomas, N., & Strauss, C. (2017). Relating therapy for distressing voices: A pilot randomized controlled trial. Schizophrenia Research, 183, 137–142.

Hermens, DF, Hatton, SN, Lee, RSC, Naismith, SL, Duffy, SL, Paul Amminger, G, Kaur, M, Scott, EM, Lagopoulos, J & Hickie, IB 2018, 'In vivo imaging of oxidative stress and fronto-limbic white matter integrity in young adults with mood disorders' European Archives of Psychiatry and Clinical Neuroscience, vol. 268, no. 2, pp. 145–156.

Hill, AT, Rogasch, NC, Fitzgerald, PB & Hoy, KE 2017, 'Effects of prefrontal bipolar and high-definition transcranial direct current stimulation on cortical reactivity and working memory in healthy adults' NeuroImage, vol. 152, pp. 142–157.

Hill, AT, Rogasch, NC, Fitzgerald, PB & Hoy, KE 2018, 'Effects of single versus dual-site High-Definition transcranial direct current stimulation (HD-tDCS) on cortical reactivity and working memory performance in healthy subjects' Brain Stimulation.

Hopkins L, Foster A, Nikitin L (2018). The process of establishing Discovery College in Melbourne. Mental Health and Social Inclusion, 22(4), 187–194.

Hopkins L, Pedwell G, Lee S (2018). Educational outcomes of Discovery College participation for young people. Mental Health and Social Inclusion, 22(4), 195–202.

Hopkins, L, Lee, S, McGrane, T & Barbara-May, R 2017, 'Single session family therapy in youth mental health: Can it help?' Australasian Psychiatry, vol. 25, no. 2, pp. 108–111.

Howes, O., McCutcheon, R., Agid, O., de Bartolomeis, A., van Beveren, N. J. M., Birnbaum, M. L., Bloomfield, M. A. P., Bressan, R. A., Buchanan, R., Carpenter, W. T., Castle, D. J., Citrome, L., Daskalakis, Z. J., Davidson, M., Drake, R. J., Dursun, S., Ebdrup, B. H., Elkis, H., Falkai, P., Fleischacker, W., Gadelha, A., Gaughran, F., Glenthøj, B. Y., Graff-Guerrero, A., Hallak, J. E. C., Honer, W. G., Kennedy, J., Kinon, B. J., Lawrie, S. M., Lee, J., Leweke, F. M., MacCabe, J. H., McNabb, C. B., Melzer, H., Möller, H. J., Nakajima, S., Pantelis, C., Reis Marques, T., Remington, G., Rossell, S. L., Russell, B. R., Siu, C. O., Suzuki, T., Sommer, I. E., Taylor, D., Thomas, N., Uçok, A., Umbricht, D., Walters, J. T. R., Kane, J., & Correll, C. U. (2017). Treatment resistant schizophrenia: Treatment Response and Resistance in Psychosis (TRRIP) working group consensus guidelines on diagnosis and terminology. American Journal of Psychiatry, 174, 216–229.

Hoy, K 2017, 'Gender Imbalance at Brain Stimulation Conferences: We Have a Problem and It is Everyone's Problem' Brain Stimulation, vol. 10, no. 1, pp. 155–156.

2017/2018 Publications (continued)

Iseger, TA, Korgaonkar, MS, Kenemans, JL, Grieve, SM, Baeken, C, Fitzgerald, PB & Arns, MW 2017, 'EEG connectivity between the subgenual anterior cingulate and prefrontal cortices in response to antidepressant medication' European Neuropsychopharmacology, vol. 27, no. 4, pp. 301–312.

J.Lee, J.Kulkarni. The Borderline Paradox. Letter to the editor. Australian and New Zealand Journal of Psychiatry. May 2017; Vol 51(5) p.537.

Jablensky A, Castle DJ, Dark F, Humberstone V, Killackey E, Kulkarni J, McGorry P, Morgan VA, Nielssen O, Tran N, Galletly C. The 2016 RANZCP Guidelines for the Management of Schizophrenia and Related Disorders – what's next? Australasian Psychiatry, December 2017; Vol 25 (6) pp. 600–602.

Kazemi, R, Rostami, R, Khomami, S, Baghdadi, G, Rezaei, M, Hata, M, Aoki, Y, Ishii, R, Iwase, M & Fitzgerald, PB 2018, 'Bilateral transcranial magnetic stimulation on DLPFC changes resting state networks and cognitive function in patients with bipolar depression' Frontiers in Human Neuroscience, vol. 12, 356.

Kirkovski, M, Suo, C, Enticott, PG, Yücel, M & Fitzgerald, PB 2018, 'Short communication: Sex-linked differences in gamma-aminobutyric acid (GABA) are related to social functioning in autism spectrum disorder' Psychiatry Research – Neuroimaging, vol. 274, pp. 19–22.

Kulkarni, J 2017, 'Complex PTSD – a better description for borderline personality disorder?' Australasian Psychiatry, vol. 25, no. 4, pp. 333–335.

Kulkarni, J, Gavrilidis, E, Hudaib, AR, Bleeker, C, Worsley, R & Gurvich, C 2018, 'Development and validation of a new rating scale for perimenopausal depression – The Meno-D' Translational Psychiatry, vol. 8, no. 1, 123. https://doi.org/10.1038/s41398-018-0172-0.

Kulkarni, J, Gavrilidis, E, Thomas, N, Hudaib, AR, Worsley, R, Thew, C, Bleeker, C & Gurvich, C 2018, 'Tibolone improves depression in women through the menopause transition: A double-blind randomized controlled trial of adjunctive tibolone' Journal of Affective Disorders, vol. 236, pp. 88–92. https://doi.org/10.1016/j.jad.2018.04.103.

Kulkarni, J, Thomas, N, Hudaib, AR, Gavrilidis, E & Gurvich, C 2018, 'Ondansetron – a promising adjunctive treatment for persistent schizophrenia' Journal of Psychopharmacology, vol. 32, no. 11, pp. 1204–1211. https://doi.org/10.1177/0269881118798608.

Kulkarni, J, Thomas, N, Hudaib, AR, Gavrilidis, E, Grigg, J, Tan, R, Cheng, J, Arnold, A & Gurvich, C 2018, 'Effect of the Glutamate NMDA Receptor Antagonist Memantine as Adjunctive Treatment in Borderline Personality Disorder: An Exploratory, Randomised, Double-Blind, Placebo-Controlled Trial' CNS Drugs, vol. 32, no. 2, pp. 179–187. https://doi.org/10.1007/s40263-018-0506-8.

Larøi, F., Thomas, N., Aleman, A., Fernyhough, C., Deamer, F., & McCarthy-Jones, S. (in press). The ice in voices: Understanding negative content in auditory verbal hallucinations. Clinical Psychology Review, 67, 1–10. doi:10.1016/j.cpr.2018.11.001.

Law PCF, Miller SM, Ngo TT (2017). The effect of stimulus strength on binocular rivalry rate in healthy individuals: Implications for studies of genetic, clinical, and individual differences. Physiology & Behavior 191: 127–136.

Law, PCF, Gurvich, CT, Ngo, TT & Miller, SM 2017, 'Evidence that eye-movement profiles do not explain slow binocular rivalry rate in bipolar disorder: Support for a perceptual endophenotype' Bipolar Disorders, vol. 19, no. 6, BDI12515, pp. 465–476. https://doi.org/10.1111/bdi.12515.

Lee S, Thomas P, Newnham H, et al. (2018). Injury, illness, mental illness and lost housing: The many reasons why people who are homeless attend hospital emergency departments. Parity, 31(8), 40–42.

Lee SJ. de Castella A. Stafrace S. Keppich-Arnold S. Kulkarni J. Retrospective audit of people treated with long-acting antipsychotic injectable medications: Usage patterns and outcomes. Schizophrenia Research, November 2017.

Lee, RSC, Hermens, DF, Naismith, SL, Kaur, M, Guastella, AJ, Glozier, N, Scott, J, Scott, EM & Hickie, IB 2018, 'Clinical, neurocognitive and demographic factors associated with functional impairment in the Australian Brain and Mind Youth Cohort Study (2008–2016)' BMJ Open, vol. 8, no. 12, 022659.

Lee, S, Chung, SW, Rogasch, NC, Thomson, CJ, Worsley, RN, Kulkarni, J, Thomson, RH, Fitzgerald, PB & Segrave, RA 2018, 'The influence of endogenous estrogen on transcranial direct current stimulation: A preliminary study' European Journal of Neuroscience, vol. 48, no. 4, pp. 2001–2012.

2017/2018 Publications (continued)

Lee, S. J., Thomas, P., Newnham, H., Freidin, J., Smith, C., Lowthian, J., Stafrace, S. (Accepted December 2018). Homeless status documentation at a metropolitan hospital emergency department Emergency Medicine Australasia.

Lithgow, BJ, Moussavi, Z, Gurvich, C, Kulkarni, J, Maller, JJ & Fitzgerald, PB 2018, 'Bipolar disorder in the balance' European Archives of Psychiatry and Clinical Neuroscience.

Louise, S., Fitzpatrick, M., Strauss, C., Rossell, S. L., & Thomas, N. (2018). Mindfulness- and acceptance-based interventions for psychosis: Our current understanding and a meta-analysis. Schizophrenia Research, 192, 57–63.

Louise, S., Rossell, S. L., & Thomas, N. (in press). The acceptability, feasibility and preliminary outcomes of an individual mindfulness intervention for hearing voices. Behavioural and Cognitive Psychotherapy, 47, 200–216. doi:10.1017/S1352465818000425.

Louise, S., Rossell, S. L., Toh, W. L., Scott, M., & Thomas, N. (2018). Does mindfulness help people adapt to the experience of hearing voices? Psychiatry Research, 270, 329–334.

Malhi, GS, Outhred, T, Hamilton, A, Boyce, PM, Bryant, R, Fitzgerald, PB, Lyndon, B, Mulder, R, Murray, G, Porter, RJ, Singh, AB & Fritz, K 2018, 'Royal australian and New Zealand college of psychiatrists clinical practice guidelines for mood disorders: Major depression summary' Medical Journal of Australia, vol. 208, no. 4, pp. 175–180.

Malhi, GS, Outhred, T, Morris, G, Boyce, PM, Bryant, R, Fitzgerald, PB, Hopwood, MJ, Lyndon, B, Mulder, R, Murray, G, Porter, RJ, Singh, AB & Fritz, K 2018, 'Royal Australian and New Zealand college of psychiatrists clinical practice guidelines for mood disorders: Bipolar disorder summary' Medical Journal of Australia, vol. 208, no. 5, pp. 219–225.

Maller, JJ, Anderson, RJ, Thomson, RHS, Daskalakis, Z, Rosenfeld, JV & Fitzgerald, PB 2017, 'Occipital bending in schizophrenia' Australian & New Zealand Journal of Psychiatry, vol. 51, no. 1, pp. 32–41.

Manning V, Dowling N.A, Lee S, Rodda S, Garfield J.B.B, Volberg R, Kulkarni J, Lubman D.I. Problem gambling and substance use in patients attending community mental health services. Journal of Behavioural Addictions, December 2017; Vol 6 (4): 678–688.

Mansouri, FA, Acevedo, N, Illipparampil, R, Fehring, DJ, Fitzgerald, PB & Jaberzadeh, S 2017, 'Interactive effects of music and prefrontal cortex stimulation in modulating response inhibition' Scientific Reports, vol. 7, no. 1, 18096.

Murray, G., Leitan, N., Thomas, N., Michalak, E. E., Johnson, S. L., Jones, S., Perich, T., Berk, L., & Berk, M. (2017). Towards recovery-oriented psychosocial interventions for bipolar disorder: Quality of life outcomes, stage-sensitive treatments, and mindfulness mechanisms. Clinical Psychology Review, 52, 148–163.

Ng, SK, Cicuttini, FM, Wang, Y, Wluka, AE, Fitzgibbon, B & Urquhart, DM 2017, 'Negative beliefs about low back pain are associated with persistent high intensity low back pain' Psychology, Health and Medicine, vol. 22, no. 7, pp. 790–799.

Nikathil S, Olaussen A, Gocentas RA, Symons E, Mitra B (2017). Workplace violence in the emergency department: A systematic review and meta analysis. Emergency Medicine Australasia, 29(3), 265–275.

Nikathil S, Olaussen A, Symons E, Gocentas RA, O'Reilly G, Mitra B (2018). Increasing workplace violence in an Australian adult emergency department. Emergency Medicine Australasia, 30(2), 181–186.

Noda, Y, Barr, MS, Zomorrodi, R, Cash, RFH, Rajji, TK, Farzan, F, Chen, R, George, TP, Daskalakis, ZJ & Blumberger, DM 2017, 'Reduced Short-latency Afferent Inhibition in Prefrontal but not Motor Cortex and its Association With Executive Function in Schizophrenia: A Combined TMS-EEG Study' Schizophrenia Bulletin, vol. 44, no. 1, pp. 193–202.

Noda, Y, Zomorrodi, R, Cash, RFH, Barr, MS, Farzan, F, Rajji, TK, Chen, R, Daskalakis, ZJ & Blumberger, DM 2017, 'Characterization of the influence of age on GABAA and glutamatergic mediated functions in the dorsolateral prefrontal cortex using paired-pulse TMS-EEG' Aging, vol. 9, no. 2, pp. 556–572.

Noda, Y, Zomorrodi-Moghaddam, R, Backhouse, F, Cash, RFH, Barr, MS, Rajji, TK, Chen, R, Daskalakis, ZJ & Blumberger, DM 2017, 'Reduced prefrontal short-latency afferent inhibition in older adults and its relation to executive function: A TMS-EEG study' Frontiers in Aging Neuroscience, vol. 9, no. MAY, 119.

Paulik, G., Thomas, N., Glasshouse, E., & Hayward, M. (in press). Being a scientist-practitioner in the field of psychosis: Experiences from voices clinics. In J. Badcock & G. Paulik-White (Eds.), A clinical introduction to psychosis: Foundations for clinical and clinical neuropsychologists. London: Elsevier.

2017/2018 Publications (continued)

Perera MPN, Bailey NW, Herring SE, Fitzgerald PB (2018). Electrophysiology of obsessive compulsive disorder: a systematic review of the electroencephalographic literature. Journal of Anxiety Disorders.

Phillipou, A, Carruthers, SP, Di Biase, MA, Zalesky, A, Abel, LA, Castle, DJ, Gurvich, C & Rossell, SL 2018, 'White matter microstructure in anorexia nervosa' Human Brain Mapping, vol. 39, no. 11, pp. 4385–4392.

Phillipou, A, Rossell, SL, Gurvich, C, Castle, DJ, Abel, LA, Nibbs, RG & Hughes, ME 2018, 'Differences in regional grey matter volumes in currently ill patients with anorexia nervosa' European Journal of Neuroscience, vol. 47, no. 2, pp. 177–183.

Phillipou, A., Mountjoy, R. & Rossell, S.L. (2017) Overvalued ideas or delusions in Anorexia Nervosa. Australian and New Zealand Journal of Psychiatry Volume: 51 issue: 6, page(s): 563–564.

Pienkos, E., Giersch, A., Hansen, M., Humpston, C., McCarthy-Jones, S., Mishara, A., Nelson, B., Park, S., Raballo, A., Sharma, R., Thomas, N., & Rosen, C. (in press). Hallucinations beyond voices: A conceptual review of the phenomenology of altered perception in psychosis. Schizophrenia Bulletin, 45 (suppl. 1), S24–S34.

Podubinski, T, Lee, S, Hollander, Y & Daffern, M 2017, 'Patient characteristics associated with aggression in mental health units' Psychiatry Research, vol. 250, pp. 141–145.

Radhu, N, Dominguez, LG, Greenwood, TA, Farzan, F, Semeralul, MO, Richter, MA, Blumberger, DM, Chen, R, Fitzgerald, PB & Daskalakis, ZJ 2017, 'Investigating Cortical Inhibition in First-Degree Relatives and Probands in Schizophrenia' Scientific Reports, vol. 7, 43629.

Rastogi, A, Cash, R, Dunlop, K, Vesia, M, Kucyi, A, Ghahremani, A, Downar, J, Chen, J & Chen, R 2017, 'Modulation of cognitive cerebello-cerebral functional connectivity by lateral cerebellar continuous theta burst stimulation' NeuroImage, vol. 158, pp. 48–57.

Riecher-Rössler, A, Butler, S & Kulkarni, J 2018, 'Sex and gender differences in schizophrenic psychoses – a critical review' Archives of Women's Mental Health, vol. 21, no. 6, pp. 627–648.

Robillard, R, Lagopoulos, J, Hermens, DF, Naismith, SL, Rogers, NL, White, D, Carpenter, JS, Kaur, M, Scott, EM & Hickie, IB 2017, 'Lower in vivo myo-inositol in the anterior cingulate cortex correlates with delayed melatonin rhythms in young persons with depression' Frontiers in Neuroscience, vol. 11, no. JUN, 336.

Rodda SN, Manning V, Dowling NA, Lee SJ, Lubman DI. Barriers and facilitators of responding to problem gambling: Perspectives from Australian mental health services. Journal of Gambling Studies, 34(1), 307–20.

Roebuck, GS, Urquhart, DM, Knox, L, Fitzgerald, PB, Cicuttini, FM, Lee, S & Fitzgibbon, BM 2018, 'Psychological Factors Associated With Ultramarathon Runners' Supranormal Pain Tolerance: A Pilot Study' Journal of Pain, vol. 19, no. 12, pp. 1406–1415.

Rossell, S. L., Schutte, M. J. L., Toh, W. L., Thomas, N., Strauss, C., Linszen, M. M. J., van Dellen, E., Heringa, S. M., Teinisse, R., Slotema, C. W., Sommer, I. E. C. (in press). The Questionnaire for Psychotic Experiences (QPE): an examination of validity and reliability. Schizophrenia Bulletin, 45 (suppl. 1), S56–65.

Russo, R, Twyman, P, Cooper, NR, Fitzgerald, PB & Wallace, D 2017, 'When you can, scale up: Large-scale study shows no effect of tDCS in an ambiguous risk-taking task' Neuropsychologia, vol. 104, pp. 133–143.

Sharp, G 2018, 'Flawed perceptions' InPsych, vol. 40, no. 3, pp. 16–21.

Shawyer, F., Farhall, J., Thomas, N., Hayes, S. C., Gallop, B., Copolov, D., & Castle, D. (2017). A randomised controlled trial of acceptance and commitment therapy for psychosis. British Journal of Psychiatry, 210, 140–148.

Sloan, E, Hall, K, Moulding, R, Bryce, S, Mildred, H & Staiger, PK (2017). Emotion regulation as a transdiagnostic treatment construct across anxiety, depression, substance, eating and borderline personality disorders: A systematic review. Clinical Psychology Review, 57, 141–163.

Soh, HJ, Grigg, J, Gurvich, C, Gavrilidis, E & Kulkarni, J 2018, 'Family Violence: An Insight Into Perspectives and Practices of Australian Health Practitioners' Journal of Interpersonal Violence.

Strauss, C., Hugdahl, K., Waters, F., Hayward, M., Bless, J. J., Falkenberg, L. E., Kråkvik, B., Asbjørnsen, A. E., Johnsen, E., Sinkeviciute, I., Kroken, R. A., Løberg, E-M., & Thomas, N. (2018). The Beliefs About Voices Questionnaire – Revised: A factor structure from 450 participants. Psychiatry Research, 259, 95–103.

2017/2018 Publications (continued)

Sun, Y, Blumberger, DM, Mulsant, BH, Rajji, TK, Fitzgerald, PB, Barr, MS, Downar, J, Wong, W, Farzan, F & Daskalakis, ZJ 2018, 'Magnetic seizure therapy reduces suicidal ideation and produces neuroplasticity in treatment-resistant depression' Translational Psychiatry, vol. 8, no. 1.

Tan, E.J. & Rossell, S.L. (2017). Disorganised schizotypy is selectively associated with poorer semantic processing in non-clinical individuals. Psychiatry Research, 256: 249–252.

Tan, E.J., & Rossell, S.L. (2017). Formal thought disorder and neurocognition in schizophrenia: The question of individual mechanisms. Schizophrenia Research. Volume 190, December 2017, Pages 189–190.

Tan, E.J., Castle, D.J. & Rossell, S.L. (2017). On research distinctions and clinical relevance in psychiatry. Australian and New Zealand Journal of Psychiatry. doi: 10.1177/0004867416686697.

Tan, Eric Josiah, Rossell, Susan Lee ; 2017. 'Hey, how's it going?' the practical value of assessing quality of life in mental illness, Australian and New Zealand Journal of Psychiatry, Vol. 51, no. 7 (Dec 2017), pp. 742–743.

Tang, VM, Blumberger, DM, McClintock, SM, Kaster, TS, Rajji, TK, Downar, J, Fitzgerald, PB & Daskalakis, ZJ 2018, 'Magnetic seizure therapy in treatment-resistant schizophrenia: A pilot study' Frontiers in Psychiatry, vol. 8, no. JAN, 310. https://doi.org/10.3389/fpsyt.2017.00310.

Thomas, N, Foley, F, Lindblom, K & Lee, S 2017, 'Are people with severe mental illness ready for online interventions? Access and use of the Internet in Australian mental health service users' Australasian Psychiatry, vol. 25, no. 3, pp. 257–261.

Thomas, N., Bless, J., Alderson-Day, B., Bell, I. H., Cella, M., Craig, T., Delespaul, P., Hugdahl, K., Larøi, F., Lincoln, T., Schlier, B., Urwyler, P., van den Berg, D., Jardri, R. (in press). Potential applications of digital resources in assessment, treatment and self-help for hallucinations. Schizophrenia Bulletin, 45 (suppl. 1), S77–S87.

Thomas, N., Farhall, J., Foley, F., Rossell, S.L., Castle, D.J., Ladd, E., Meyer, D., Mihalopoulos, C., Leitan, N., Nunan, C., Frankish, R., Smark, T., Farnan, S., McLeod, B., Sterling, L., Murray, G., Fossey, E., Brophy, L. & Kyrios, M. (2016). Promoting personal recovery in people with persisting psychotic disorders: Development and pilot study of a novel digital intervention. Frontiers in Psychiatry, 7, 196.

Thomas, N., Foley, F., Lindblom, K., & Lee, S. (2017). Are people with severe mental illness ready for online interventions? Access and use of the Internet in Australian mental health service users. Australasian Psychiatry, 25, 257–261.

Toh, W.L., Castle, D.J. & Rossell, S.L. (2017). Characterisation of body dysmorphic disorder (BDD) versus obsessive-compulsive disorder: In light of current DMS-5 nosology. Journal of Obsessive-Compulsive and Related Disorders, 12, 117–126.

Toh, W.L., Castle, D.J. & Rossell, S.L. (2017). How individuals with body dysmorphic disorder (BDD) process their own face: A qualitative and quantitative investigation based on an eye-tracking paradigm. Cognitive Neuropsychiatry, 22(3), 213–232.

Toh, WL, Castle, DJ & Rossell, SL 2017, 'Attentional biases in body dysmorphic disorder (bdd): Eye-tracking using the emotional Stroop task' Comprehensive Psychiatry, vol. 74, pp. 151–161.

Toh, WL, Castle, DJ & Rossell, SL 2017, 'Face and Object Perception in Body Dysmorphic Disorder versus Obsessive-Compulsive Disorder: The Mooney Faces Task' Journal of the International Neuropsychological Society, vol. 23, no. 6, pp. 471–480.

Toh, WL, Castle, DJ & Rossell, SL 2017, 'How individuals with body dysmorphic disorder (BDD) process their own face: a quantitative and qualitative investigation based on an eye-tracking paradigm' Cognitive Neuropsychiatry, vol. 22, no. 3, pp. 213–232.

Toh, WL, Castle, DJ, Mountjoy, RL, Buchanan, B, Farhall, J & Rossell, SL 2017, 'Insight in body dysmorphic disorder (BDD) relative to obsessive-compulsive disorder (OCD) and psychotic disorders: Revisiting this issue in light of DSM-5' Comprehensive Psychiatry, vol. 77, pp. 100–108.

Udy, AA, Jarrett, P, Lassig-Smith, M, Stuart, J, Starr, T, Dunlop, R, Deans, R, Roberts, JA, Senthuran, S, Boots, RJ, Bisht, K, Bulmer, AC & Lipman, J 2017, 'Augmented renal clearance in traumatic brain injury: A single-center observational study of atrial natriuretic peptide, cardiac output, and creatinine clearance' Journal of Neurotrauma, vol 34, no. 1, pp. 137–144.

2017/2018 Publications (continued)

Van Rheenen, T. E., Joshua, N., Castle, D.J. & Rossell, S. L. (2017). Configural and featural face processing influences on emotion recognition in schizophrenia and bipolar disorder. Journal of International Neuropsychological Society, 23(3), 217–221.

Van Rheenen, TE, Lewandowski, KE, Ospina, LH, Ongur, D, Tan, EJ, Neill, E, Gurvich, C, Pantelis, C, Malhotra, AK, Rossell, SL & Burdick, K 2017, 'Characterising cognitive heterogeneity on the schizophrenia – bipolar disorder spectrum' Psychological Medicine, vol. 47, no. 10, pp. 1848–1864.

Villagonzalo, K-A., Leitan, N., Farhall, J., McLeod, B., Foley, F., Thomas, N. (2018). Development and validation of a scale for self-efficacy for personal recovery in persisting mental illness. Psychiatry Research, 269, 354–360.

Wasiak, J, Lee, S, Paul, E, Shen, A, Tan, H, Cleland, H & Gabbe, B 2017, 'Female patients display poorer burn-specific quality of life 12 months after a burn injury' Injury, vol 48, no. 1, pp. 87–93.

Weissman, CR, Blumberger, DM, Brown, PE, Isserles, M, Rajji, TK, Downar, J, Mulsant, BH, Fitzgerald, PB & Daskalakis, ZJ 2018, 'Bilateral repetitive transcranial magnetic stimulation decreases suicidal ideation in depression' Journal of Clinical Psychiatry, vol. 79, no. 3, 17m11692. https://doi.org/10.4088/JCP.17m11692.

Williams, A, Fossey, E, Farhall, J, Foley, F & Thomas, N 2018, 'Going Online Together: The Potential for Mental Health Workers to Integrate Recovery Oriented E-Mental Health Resources Into Their Practice' Psychiatry (New York), vol. 81, pp. 116–129.

Williams, A., Fossey, E., Farhall, J., Foley, F., & Thomas, N. (2018). Recovery after psychosis: Qualitative study of service user experiences of peer videos on a recovery-oriented website. Journal of Medical Internet Research Mental Health, 20(5).

Zhu, XM, Zheng, W, Li, XH, Cai, DB, Yang, XH, Ungvari, GS, Ng, CH, Wang, XP, Kulkarni, J, Grigg, J, Ning, YP & Xiang, YT 2018, 'Adjunctive raloxifene for postmenopausal women with schizophrenia: A meta-analysis of randomized, double-blind, placebo-controlled trials' Schizophrenia Research, vol. 197, pp. 288–293.

Review Articles

Beilharz, F., Castle, D. J., Grace, S., Rossell, S. L., 2017. A systematic review of visual processing and associated treatments in body dysmorphic disorder, Acta Psychiatrica Scandinavica, Vol. 136, no. 1 (Jul 2017), pp. 16–36.

Bell, I.H., Lim, M.H., Rossell, S.L. & Thomas, N. (2017). Ecological momentary assessment and intervention in the treatment of psychotic disorders: A systematic review. Psychiatric Services, Nov 1;68(11):1172–1181.

Che, X, Cash, R, Chung, S, Fitzgerald, PB & Fitzgibbon, BM 2018, 'Investigating the influence of social support on experimental pain and related physiological arousal: A systematic review and meta-analysis' Neuroscience and Biobehavioral Reviews, vol. 92, pp. 437–452. https://doi.org/10.1016/j.neubiorev.2018.07.005.

Che, X, Cash, R, Ng, SK, Fitzgerald, P & Fitzgibbon, BM 2018, 'A Systematic Review of the Processes Underlying the Main and the Buffering Effect of Social Support on the Experience of Pain' Clinical Journal of Pain, vol. 34, no. 11, pp. 1061–1076.

Cocchi, L, Zalesky, A, Nott, Z, Whybird, G, Fitzgerald, PB & Breakspear, M 2018, 'Transcranial magnetic stimulation in obsessive-compulsive disorder: A focus on network mechanisms and state dependence' NeuroImage: Clinical, vol. 19, pp. 661–674.

Coyle, HL, Ponsford, J & Hoy, KE 2018, 'Understanding individual variability in symptoms and recovery following mTBI: A role for TMS-EEG?' Neuroscience and Biobehavioral Reviews, vol. 92, pp. 140–149.

Hermens, DF, Chitty, KM & Kaur, M 2018, 'Mismatch negativity in bipolar disorder: A neurophysiological biomarker of intermediate effect?' Schizophrenia Research, vol. 191, pp. 132–139.

Myles, JB, Rossell, SL, Phillipou, A, Thomas, E & Gurvich, C 2017, 'Insights to the schizophrenia continuum: A systematic review of saccadic eye movements in schizotypy and biological relatives of schizophrenia patients' Neuroscience and Biobehavioral Reviews, vol. 72, pp. 278–300.

Ng, SK, Urquhart, DM, Fitzgerald, PB, Cicuttini, FM, Hussain, SM & Fitzgibbon, BM 2018, 'The Relationship between Structural and Functional Brain Changes and Altered Emotion and Cognition in Chronic Low Back Pain: A Systematic Review of MRI and fMRI Studies' Clinical Journal of Pain, vol. 34, no. 3, pp. 237–261.

2017/2018 Publications (continued)

Roebuck, GS, Fitzgerald, PB, Urquhart, DM, Ng, S-K, Cicuttini, FM & Fitzgibbon, B 2018, 'The psychology of ultra-marathon runners: A systematic review' Psychology of Sport and Exercise, vol. 37, pp. 43–58.

Rogasch, NC, Sullivan, C, Thomson, RH, Rose, NS, Bailey, NW, Fitzgerald, PB, Farzan, F & Hernandez-Pavon, JC 2017, 'Analysing concurrent transcranial magnetic stimulation and electroencephalographic data: A review and introduction to the open-source TESA software' NeuroImage, vol 147, pp. 934–951.

Sumner, P., Bell., I. & Rossell, S.L. (2017). A systematic review of the structural neuroimaging correlates of thought disorder. Neuroscience & Biobehavioural Reviews Volume 84, January 2018, Pages 299–315.

Tan, RYM, Grigg, J & Kulkarni, J 2018, 'Borderline personality disorder and polycystic ovary syndrome: A review of the literature' Australian and New Zealand Journal of Psychiatry, vol. 52, no. 2, pp. 117–128.

Thomas, EHX, Bozaoglu, K, Rossell, SL & Gurvich, C 2017, 'The influence of the glutamatergic system on cognition in schizophrenia: A systematic review' Neuroscience and Biobehavioral Reviews, vol. 77, pp. 369 – 387.

Wilson, S, Dhar, A, Tregaskis, P, Lambert, G, Barton, D & Walker, R 2018, 'Known unknowns: Examining the burden of neurocognitive impairment in the end-stage renal failure population' Nephrology, vol. 23, no. 6, pp. 501–506.

Other

Peer-reviewed

Castle, DJ, Galletly, CA, Dark, F, Humberstone, V, Morgan, VA, Killackey, E, Kulkarni, J, McGorry, PD, Nielssen, O, Tran Vu Thieu, N & Jablensky, A 2017, 'The 2016 Royal Australian and New Zealand College of Psychiatrists guidelines for the management of schizophrenia and related disorders' Medical Journal of Australia, vol. 206, no. 11, pp. 501–505.

Government Report

Lee S (2017). Advanced Behaviour Management Psychology in a subacute setting: Statistical analysis. Appendix to the following: Advanced Practice in Allied Health Workforce Grant Program 2015–16: Final Report. Alfred Health, Melbourne.

Lubman D, Manning V, Dowling N, Rodda S, Lee S, Garde E, Merkouris S & Volberg R (2017). Problem gambling in people seeking treatment for mental illness. Victorian Responsible Gambling Foundation: Melbourne.

Thomas P, Lee S (2018). Chief Psychiatrist Victoria Sexual Safety Reporting Pilot: Evaluation report. Alfred Health: Melbourne.

Letters

Kulkarni, J & Galletly, C 2017, 'Improving safety for women in psychiatry wards' Australian & New Zealand Journal of Psychiatry, vol. 51, no. 2, pp. 192–194. https://doi.org/10.1177/0004867416667234.

Krepel, N, Sack, AT, Kenemans, JL, Fitzgerald, PB, Drinkenburg, WH & Arns, M 2018, 'Non-replication of neurophysiological predictors of non-response to rTMS in depression and neurophysiological data-sharing proposal' Brain Stimulation, vol. 11, no. 3, pp. 639–641. https://doi.org/10.1016/j.brs.2018.01.032.

Grigg, J, Thew, C & Kulkarni, J 2017, 'Oestradiol treatment for mood stabilisation in borderline personality disorder' Australian & New Zealand Journal of Psychiatry, vol. 51, no. 7. https://doi.org/10.1177/0004867416688100.

Stark, J, Thew, C & Kulkarni, J 2018, 'Premenstrual dysphoric disorder and its association with complex trauma disorder: Three cases' Australian and New Zealand Journal of Psychiatry, vol. 52, no. 9, pp. 904–905. https://doi.org/10.1177/0004867418781488.

Grigg, J, Worsley, R & Kulkarni, J 2017, 'Raloxifene for schizophrenia and symptoms of hyperprolactinaemia?' Australian & New Zealand Journal of Psychiatry, vol. 51, no. 3, pp. 294. https://doi.org/10.1177/0004867416670014.

Oates, J & Sharp, G 2018, 'Response to "Comments on 'Nonsurgical medical penile girth augmentation: Experience-based recommendations'"' Aesthetic Surgery Journal, vol. 38, no. 2, pp. NP42–NP43. https://doi.org/10.1093/asj/sjx226.

Lee, SJ, de Castella, A, Stafrace, S, Keppich-Arnold, S & Kulkarni, J 2018, 'Retrospective audit of people treated with long-acting antipsychotic injectable medications: Usage patterns and outcomes' Schizophrenia Research, vol. 197, pp. 572–573. https://doi.org/10.1016/j.schres.2017.11.015.

2017/2018 Publications (continued)

Phillipou, A, Woods, W, Abel, LA, Rossell, SL, Hughes, ME, Castle, DJ & Gurvich, C 2018, 'Spontaneous blink rate in anorexia nervosa: Implications for dopaminergic activity in anorexia nervosa' Australian & New Zealand Journal of Psychiatry, vol. 52, no. 7, pp. 713–714. https://doi.org/10.1177/0004867417739692.

Lee, J & Kulkarni, J 2017, 'The borderline paradox' Australian & New Zealand Journal of Psychiatry, vol. 51, no. 5, pp. 537. https://doi.org/10.1177/0004867416670521.

Comment / Debate

Fitzgibbon, BM, de Andrade, DC & Schabrun, S 2017, 'Combined cerebral and peripheral treatments for pain: A commentary on Hazime et al.' European Journal of Pain, vol. 21, no. 7, pp. 1130–1131.

Phillipou, A, Castle, DJ, Abel, LA, Gurvich, C & Rossell, SL 2018, 'An Overlooked Brain Region in the Aetiology of Anorexia Nervosa: The Importance of Behaviourally Driven Neuroimaging Analysis' Journal of Experimental Neuroscience, vol. 12. https://doi.org/10.1177/1179069518820068.

Bailey, NW, Chambers, R, Wootten, A & Hassed, CS 2018, 'Commentary regarding Johnson et al (2017) "A randomized controlled evaluation of a secondary school mindfulness program for early adolescents: Do we have the recipe right yet?".' Mindfulness, vol. 9, no. 5, pp. 1668–1670. https://doi.org/10.1007/s12671-018-0936-x.

Kulkarni, J 2017, 'Pharmacogenomics in psychiatry – Clinical innovation utilised by the Therapeutic Goods Administration and Food and Drug Administration' Australian & New Zealand Journal of Psychiatry, vol. 51, no. 1, pp. 93–94. https://doi.org/10.1177/0004867416667233.

Chapter (Book)

Giummarra, MJ, Tracy, LM, Young, KA & Fitzgibbon, B 2017, The social side of pain: What does it mean to feel another's pain? in S van Rysewyk (ed.), Meanings of Pain. Springer, Gewerbestrasse Cham Switzerland, pp. 355–373. DOI: 10.1007/978-3-319-49022-9_21.

Ames, D, Lautenschlager, N & Macfarlane, S 2017, Psychiatry of old age. in Foundations of Clinical Psychiatry. 4th edn, Melbourne University Press, Carlton VIC Australia, pp. 432–455.

Kulkarni, J, Gavrilidis, E, Nathoo, S & Grigg, J 2017, Psychosis. in AF Carvalho & RS McIntyre (eds), Mental Disorders in Primary Care: A Guide to Their Evaluation and Management. Oxford University Press, Oxford UK, pp. 234–250.

Abstract

Phillipou, A., Castle, D.J., & Rossell, S.L. (2017). Anorexia nervosa: Eating disorder or body image disorder? Australian and New Zealand Journal of Psychiatry Volume: 52 issue: 1, page(s): 13–14.

Kaur, M, Hermens, DF, Lee, RSC, Lagopoulos, J, Naismith, SL, Fitzgerald, PB, Scott, EM & Hickie, IB 2017, 'Stimulating young minds: Investigating a next generation treatment for depression in youth'.

Other contribution

Not peer-reviewed

Kulkarni, J 2017, Borderline Personality Disorder. Australian Doctor, How to Treat.

Kulkarni, J 2017, Perimenopausal Depression. Australian Doctor, How to Treat.

Commissioned Report

Not peer-reviewed

Bailey, NW, Hassed, CS, Chambers, RH, Owen, J, Jones, A & Wootten, A 2018, Evidence based guidelines for mindfulness in schools: A guide for teachers and principals.

Short Survey

Peer-reviewed

Kulkarni, J 2017, 'An Erudite Encounter with: Jayashri Kulkarni' Australian and New Zealand Journal of Psychiatry, vol. 51, no. 9, pp. 948–949. https://doi.org/10.1177/0004867417720522.

Monash Alfred Psychiatry Research Centre (MAPrc)
Level 4, 607 St Kilda Road, Melbourne 3004
+61 3 9076 6564

maprc@monash.edu

www.maprc.com.au