It is my great pleasure and privilege to invite you to read the Monash Alfred Psychiatry research centre’s Annual Report for 2016.

MAPrc continues to grow and push the mental health field forward by integrating neuroscience, clinical medicine, sociopolitical dimensions and the all-important humanitarian endeavours to improve outcomes for people with mental ill health and their families.

In 2016, we are proud to inform you of the role of environmental impact in neurobiological will hopefully lead to an integrated, innovative set of treatments. Clearly, we endorse and look forward to the multiple agency approach to the prevention of violence against women—championed by both the Victorian and Commonwealth Governments, and MAPrc continues to contribute to this important area of prevention work. Nonetheless, for the many unfortunate victims of trauma, sensitive and effective new treatments are desperately needed— which we are developing and rapidly translating through our translational clinics.

In 2016, we merged our pharmacology clinical trials unit with the clinical trials unit based at Caulfield Hospital. MAPrc now has a new satellite campus, based at Caulfield, along with our other sites – The Victoria Clinic and teaching at the Malvern Hospital for Addiction. Our research has expanded to include a large number of trials in Alzheimer’s Disease with the Caulfield group. Given the burgeoning public health problem of dementia, it is important that MAPrc utilizes our neuroscience and clinical expertise to expand into this critical area. Associate Professor Kate Hoy is a key senior researcher who continues to develop brain stimulation research in the area of dementia.

An important Strategic Planning exercise held in 2016 with an external facilitator, has encouraged greater clarity in our organization and we are working hard to develop new descriptors for the groups conducting research at MAPrc. This is a tangible demonstration of our growth and the need for organizational restructuring work over the next six months. It was heartening to note the very high morale, universal commitment to our mission and great camaraderie within the large MAPrc staff and student group.

MAPrc is a place of great ideas, energy, enthusiasm and above all – great empathy and compassion for people with mental ill health. Our research is grounded in the reality of people’s struggles with depression, psychosis, trauma, and many other mental health issues, as well as the capacity to use the very latest that 21st century science and technology has to offer. We continue our mission to develop new treatments, new understanding and new services for people with mental illnesses, by conducting world class psychiatric research with respect, equality and understanding.

Thank you for your continuing support.

Professor Jayashri Kulkarni
Director
The Monash Alfred Psychiatry research centre

2016 was an eventful and exciting time to be part of the family of MAPrc. As always seems to be the case, MAPrc throughout the year was a place of excitement and fulfilment, along with the marked frustrations that come with academic life. The disappointments of grant rejections and the comments of snarky reviewers have a tendency to weigh heavily, especially when these seem to occur without end (no matter how successful you are). The greatest value in working in an environment such as that which exists within MAPrc is the support that comes at these times.

Critically, these setbacks are persistently outweighed by the successes that come with the type of activities that we undertake. The clear research successes, especially obtaining grants and successfully publishing in decent journals are clear and quantifiable and if anything we probably should celebrate them more. What is less clear, but equally if not more important, certainly in buffering the spirit in difficult times, is the direct evidence of the impact of research success that we certainly have, if not on a day-to-day basis certainly frequently enough for this to be a real and determining factor in regards to the awards that are achieved through psychiatry research at MAPrc.

The most tangible way in which this is expressed is in seeing the real benefits that patients can achieve whilst engaging in meaningful and impactful research. Time and time again I have walked out of my office after seeing a patient who has had their life turned around by TMS treatment, or one of the other therapies that we are testing, not just with a pressing need to share this information with those who have contributed to the individual’s care, but also reinvigorated to ensure we keep doing what we are doing; to ensure the impact of this research impacts on the lives of many more patients to come.

For my team, and I know across the centre, during 2016 we commenced a series of new trials with the hope that these will really have substantial and wide reaching impact. In our team, this included new studies in obsessive-compulsive disorder, post-traumatic stress disorder and Alzheimer’s disease. These are all severely disabling psychiatric and brain disorders for which current treatments are limited or frequently ineffective. If we have success in developing new treatments for any of these, it will have the possibility of affecting millions of lives, something which is a real privilege to have the opportunity to do. If patients can be helped along the way this is a considerable bonus but one that we actively try and achieve. This comes through the type of research that can be done in the clinical setting, but also through having a team of caring and dedicated staff, whose involvement in of itself can benefit patients as they pass through the centre. We are fortunate to have many of these people in our teams at MAPrc, something everyone gets to benefit from.

Professor Paul Fitzgerald
Deputy Director
Monash Alfred Psychiatry research centre
Teaching the next generation of health professionals is also an important part of MAPrc. Over 2016, we hosted approximately 50 students from different educational backgrounds. We are proud of the excellent quality of the students’ research projects, many of which will result in on-going innovations.

MAPrc has a great reputation for using advanced neuroscience techniques to investigate brain function and develop innovative treatments. Our work, reduces the current huge cost mental illness places on individuals, families and our wider community.

Professor Jayashri Kulkarni

• President-Elect, International Association of Women’s Mental Health (2016) (Presidential duties began March 2017)
• Member, Expert Taskforce on Mental Health — Innovation Reference Group (2016 – ongoing)
• Member, International PCOS Guideline Development Group (2016 – ongoing)
• Board of Directors Member, Mental Health Foundation Australia (Victoria) (2016 – ongoing)
• Member, Global Alliance for Maternal Mental Health (GAMMH) (2016 – ongoing)

Other 2016 Awards and Distinctions

Dr Bernadette Fitzgibbon

• Founding Vice-President, Australasian Social and Affective Neuroscience Society.
• Advancing Australia National Program; The APA Project Grant funded by the Australian Rheumatology Association for “Interventional repetitive transcranial magnetic stimulation treatment for fibromyalgia”.
• Advancing Women’s Research Success Grant Program, Monash University.

Dr Manreena Kaur

Best overall oral presentation award at the Society for Mental Health Research Conference, 2016

Dr Caroline Gurvich

• promoted to Senior Research Fellow
• Awarded AMREP seed grant and platform access grant for Stress, genes and cognition project

Sung Wook Chung

• Top ranked student abstracts for 2nd Australian Brain Stimulation meeting 2016
• 2nd Prize Poster Presentation at SOBR Symposium 2016

Aron Hill


Fellowship of the Australian Academy of Health and Medical Sciences

On the 6th of October 2016 it was announced that Professor Jayashri Kulkarni had been elected as a Fellow of the Australian Academy of Health and Medical Sciences (AAHMS).

Selection to this prestigious position is formal, national recognition of Professor Kulkarni’s tireless work in psychiatry research where among other achievements she has pioneered the use of hormonal treatments to improve the outcomes for women living with severe mental illnesses, including schizophrenia, depression, bipolar disorder, menopausal depression and borderline personality disorder which, thanks to Professor Kulkarni’s work, is increasingly known as Complex Trauma Disorder.

Fellows are drawn from all states and territories of Australia, and from all aspects of health and medical science across clinical practice and allied health care, with representation from basic translational and clinical research, health economics, general practice and public health.

“Our philosophy is to conduct world class psychiatric research with respect, equality and understanding.”

MAPrc Mission

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

MAPrc Vision

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

To make a transformative difference to the lives of people with mental illness.
We are privileged to have as our patron the Governor-General His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd). We are grateful for his continued patronage and support of our centre.

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

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

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

Principle areas of focus in 2016 included clinical trials to assess novel treatments in schizophrenia, borderline personality disorder and perimenopause. Expanding current scientific knowledge on the role of the neuroendocrine system in mental illness is critical to these projects. Exploratory studies of 2016 included exploring the effects of the oral contraceptive pill and depression, methods for harm reduction in smoking in patients with schizophrenia, and policy driven projects including violence against women. NRAMP, the National Register of Antipsychotic Medication in Pregnancy, continued into its 8th 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.
Mrs N is a 51 year old specialist Nurse who worked in a senior role in a large hospital. She was in charge of a busy medical ward and had worked in the same hospital for 22 years, achieving many promotions over this period of time. She enjoyed her work and was a highly respected member of the Hospital. She and her husband of 24 years had two sons, aged 17 and 14 years.

Mrs N had enjoyed a warm, nurturing early family life, a stable, loving marriage and had energetic, caring sons. She had no mental ill health, no serious physical illnesses and coped appropriately with the death of her father 8 years earlier.

Over 2 years, Mrs N’s life changed drastically. Insidiously but steadily, Mrs N developed depression and anxiety symptoms that worsened over 6 months. She began to have episodes of crying and sadness for no reason; became irritable and hostile at work and experienced great difficulties with her memory and concentration. One day, she was about to give a patient the wrong dose of medication and was stopped in time by a nursing colleague. Mrs N felt devastated, ashamed and guilty about her error, and then started to have panic attacks on her way to work. She lost her confidence and avoided going to give medications to patients. Mrs N was asked to take leave, and interpreted this as punishment for the recent incident. She stayed at home and became increasingly irritable, angry and resentful of her busy family. At the same time, she noted that she had gained 4 kilos in weight despite her usual healthy diet, was sleeping very poorly and felt exhausted a lot of the time. Initially, her family tried to soothe her but after some months began to respond negatively towards her. Her oldest son, a bright student, was doing his final year at high school, and began to refuse to have dinner with his family, saying that it was too difficult to be around his mother. Previously, Mrs N had taken a great interest in both of her son’s schooling – often helping with homework. Her younger son became isolative and said that he couldn’t believe how different his life was now compared to just a few months ago.

We diagnosed PERIMENOPAUSAL DEPRESSION. Mrs N joined one of our clinical trials of a particular hormone treatment (tibolone) and after a few weeks, she had improved greatly. After the trial, she continued to take the tibolone treatment and has ongoing breast screening and other general health tests with her GP. Six months after the trial, still taking tibolone, she felt like her life was now compared to just two years previously.

Mrs N was seen in the MAPrc Women’s Mental Health Clinic after a referral from her treating psychiatrist. She had been started on a different antidepressant, with partial response but she still felt agitated and sad, extremely guilty (now about her suicide attempt as well as previous issues), and had problems concentrating. Mrs N felt that her future was bleak and also could not believe how different her life was now compared to just two years previously.

We diagnosed PERIMENOPAUSAL DEPRESSION. Mrs N joined one of our clinical trials of a particular hormone treatment (tibolone) and after a few weeks, she had improved greatly. After the trial, she continued to take the tibolone treatment and has ongoing breast screening and other general health tests with her GP. Six months after the trial, still taking tibolone, she felt like her old self. Therapeutic work with Mrs N, her husband and sons over the next four months stabilised the family and all were able to regain an excellent quality of life.
A novel adjunct hormone treatment for men and women with schizophrenia and related disorders

Increasing evidence points to the protective role of estrogen in the brain, and its positive effect on the symptoms of schizophrenia and schizoaffective disorder. However, adverse effects on breast and uterine tissue in females, and feminisation of males, limit the long-term therapeutic use of estrogen in this population.

Raloxifene is a new hormone treatment that belongs to a group of medications called Selective Estrogen Receptor Modulators (SERMs). Raloxifene is thought to have positive estrogenic effects in the brain without affecting peripheral body tissue, thus offering a longer-term treatment approach with potential mental health and cognitive benefits, and few estrogenic side effects.

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

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

The perimenopausal questionnaire: Meno-D

We have developed a unique questionnaire to characterise the different symptoms of depression that women in the perimenopausal period experience. This questionnaire has been circulated to many general practitioners and other healthcare professionals, who are assisting us with validating this important assessment tool.

Family violence – understanding health practitioners’ current practice, attitudes and beliefs

Family violence directly affects one in five Victorian women over the course of their lifetime. It is the leading contributor to preventable death, disability and illness in Victorian women aged 15 to 44 years. The issue of family violence is a complex one that health practitioners find very difficult to deal with. In order to understand and promote early intervention more research is required.

This current study aims to obtain information from health practitioners about their current practice, attitudes and beliefs to better inform procedures and guidelines about what to do when a patient is experiencing faming violence.

Metformin for mind and metabolism

We are investigating metformin, which is an old anti-diabetic medication commonly used to treat type-2 diabetes mellitus. Metformin has been shown to have some effect on the mitochondria at the cellular level, which suggests that it may have some impact in treating depression. Metformin is also used as an adjunct in the treatment of obesity. Combining these two potential effects, metformin may be a very useful and safe treatment for both depression and obesity. We are trialing metformin for its ability to improve mood and cognition, and reduce weight, in women and men with co-morbid treatment-resistant depression and abdominal obesity.

Transcranial direct current stimulation for the treatment of depression in women

Transcranial direct current stimulation (tDCS) is a mild non-invasive brain stimulation technique. It involves the application of a gentle electrical current to the surface of the brain through scalp electrodes. tDCS can be used to either increase or decrease activity in the area of the brain under the stimulating electrode depending on where the electrodes are positioned. tDCS to the prefrontal region of the brain has been found to have some antidepressant efficacy, and we are evaluating its efficacy as a new non-pharmacological treatment for many conditions including depression and anxiety. The role of estrogen and progesterone in impacting on tDCS has never been explored before. In this study, women are treated with tDCS at two time points across a monthly cycle, with examination of their hormone profiles. In this way, greater accuracy of treatment with attention to hormone impacts is being measured and will be an important guide for other brain stimulation treatments.

Using accelerometer-based compact system as a diagnostic tool to assess and monitor drug-induced parkinsonism

This research project is testing an experimental device known as an accelerometer for the detection and monitoring of abnormal movements known as “parkinsonism” – that can be caused by some medications. An accelerometer is worn like a watch around the wrist or ankle for about 30 minutes to measure movements. It is not painful at all. Men and women with a diagnosis of schizophrenia managed on first generation antipsychotic medications, or who have parkinson’s disease, or who are healthy people are invited to participate in this study which may assist in our understanding of movement disorders and in the development of a more sensitive and early detection tool for diagnosing parkinsonism.

The objective of this pilot study is to evaluate the effectiveness of accelerometer in quantifying Drug-Induced Parkinsonism (DIP) symptoms such as tremor, bradykinesia and gait abnormalities and detecting sub-clinical DIP in patients suffering from schizophrenia.

The National Register of Antipsychotic Medication in Pregnancy (NRAMP)

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

However there is a notable dearth of information available to clinicians and women who need to make informed decisions for the health and wellbeing of both mother and baby during pregnancy and breast feeding. Therefore The National Register of Antipsychotic Medication in Pregnancy (NRAMP) was established in 2005, to investigate the safety of antipsychotic medication during pregnancy and in the first 12 months of life.

This targeted development of evidence-based clinical guidelines will expand our knowledge, understanding and care plan options for pregnant women and new mothers with severe mental illness who take antipsychotic medication during pregnancy. By conducting this research, we aim to provide a better understanding of the safe use of antipsychotic medication during pregnancy and breastfeeding, and develop best-practice guidelines to inform clinical decisions, improved treatment options and encourage safer outcomes for mother and baby.
CURRENT GRANTS

Adjunctive Hormone Therapy for Treatment Resistant Depression in Peri Menopausal Women
National Health and Medical Research Council, Kulkarni J. $599,514

The National Register of Antipsychotic Medications in Pregnancy
Janssen-Cilag, Kulkarni J. $50,000

Servier Research Fellow in Women’s Mental Health
Servier, Kulkarni J. $30,000

Janssen-Cilag Prolactin Meta-Analysis
Janssen-Cilag, Kulkarni J. $108,250

‘Mothers Matter Intervention’, a new support service for pregnant women with mental illness
Alfred Felton Bequest Small Grants March 2016: $19,751

GRANTS AWARDED

funding to commence in 2017
A Randomised Controlled Trial of NMDA Antagonist, Memantine, for the Treatment of Borderline Personality Disorder
NHMRC Project Grant- March 2016: $993,067

STUDENTS

The Women’s Mental Health Team provides a friendly and nurturing environment where students are encouraged to interact with senior staff on issues surrounding research design and analysis. Further, students are given the unique opportunity to be treated like staff members. This includes attending staff meetings, sharing ideas about research, and attending conferences both locally and internationally. This unique student environment is an ideal gateway between being a university student and joining the research workforce.

During 2016, we congratulated Sacha Filia on successfully passing her PhD “A comprehensive assessment of factors related to smoking and other cardiovascular disease risk factors among people experiencing severe mental illness.”

Women’s Mental Health Team has:
• 1 x Bachelor of Science - Pharmacology (Honours) Student
• 3 x Bachelor of Medical Science (Honours) Students
• 6 x 5th Year Bachelor of Medicine, Bachelor of Surgery Students
• 5 x Bachelor of Medicine, Bachelor of Surgery Enrolled Students
• 10 x Research Support Affiliates / volunteers
• 1 x PhD Students

MEDIA & COMMUNITY


Kulkarni J. International Women’s Day Luncheon – presentation "Women’s Mental Health: Not A National Priority, Not Good Enough” – 8th March 2016, Melbourne

Kulkarni J. Leader Community Newspaper – comments on "McKinnon life coach says his two-month online course is rehab for violent men” – 19th February 2016

Kulkarni J. Dr Colin Halloway, Daily blog – Article "Chemical messengers: how hormones affect our mood" 13th February 2016

Kulkarni J. ABC774 Radio with Rafael Epstein – segment ‘Lifestyle and Other Catastrophes’ topic discussed “Is your workplace culture making you sick?” 8th February 2016

Kulkarni J. International Business Times – comments on "Schizophrenia breakthrough: Schizophrenia cure may be possible in future after scientists discover biological cause” 29th January 2016

Kulkarni J. Sydney Morning Herald with Kate Aubusson – Interview "C4 variation and schizophrenia” 28th January 2016

Kulkarni J. Radio West – Southern Cross Austereo, Interview (fortnightly) “Return to work blues” 22th January 2016

Kulkarni J. Royal Perth – G-Slam, Interview "Novel antidepressants” 13th January 2016

Kulkarni J. Daily Mail Australia – comments on "The Truth about the Pill: Does it make you fat and should you take it for years?" 4th January 2016

Kulkarni J. The Daily Advertiser - Article "Plan ahead to make resolutions succeed” 1st January 2016

Kulkarni J. ABC News – Article "Novel antidepressants” 1st January 2016


The Monash Alfred Psychiatry Research Centre (MAPrc) together with Servier Pharmaceuticals hosted its 2nd Annual Conference titled “In her Shoes” on the 3rd September 2016 at the Stamford Plaza, Melbourne. The one day conference was attended by 100 general practitioners from both metropolitan and rural areas all over Australia.

In her opening address, Professor Jayashri Kulkarni pleaded that “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 dysorphic disorder (PMDD)
• Understanding and Managing Borderline Personality Disorder (BPD)
• Motherhood and Mental Health
• Perimenopause/ Menopause - Endocrine Aspects, Anxiety and Depression, Cognitive changes
• Assessment of Violence against Women

The event was informative, nurturing and inspiring for those who attended.
“Using advanced neuroscience techniques allows us to investigate brain function and develop innovative treatments.” 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.

In 2016 we conducted nine separate clinical trials across depression, autism, fibromyalgia, head injury, schizophrenia, PTSD and Alzheimer’s disease. We also conducted 13 experimental studies, published 39 papers, ran the Australasian Brain Stimulation Meeting and three clinical TMS training courses. We were also successful in applications for eight grants. In addition, we had three students complete their degrees.

Associate Professor Kate Hoy

• Mason Foundation National Medical Program Grant for ‘A RCT of Theta Burst Stimulation for Alzheimer’s.
• Invited to join the nine member NHMRC Early and Mid-Career Reference Group, contributing to the structural review of the NHMRC’s Grant Program
• Kate also initiated the women in brain stimulation database site aimed at addressing the extreme gender imbalances at international brain stimulation conferences. Go to womeninbrainstim.com to find out more and register.

Dr Bernadette Fitzgibbon

• Mason Foundation National Medical Program Grant for ‘A double-blind placebo-controlled clinical trial of prefrontal theta burst stimulation in fibromyalgia’

Dr Manreena Kaur

• NHMRC Early Career Fellowship for ‘Repetitive transcranial magnetic stimulation treatment of auditory hallucinations in psychiatric disorders: a clinical and neurobiological investigation’

Collaborations

Brain Stimulation Research
We have a strong and highly productive research collaboration with the Centre for Addiction and Mental Health, Department of Psychiatry, University of Toronto. It includes close links with the Ternaity Centre for Therapeutic Brain Intervention headed by Professor ZJ Daskalakis. This collaboration involves the joint development of research protocols, strategic planning and research projects and has generated a considerable number of joint publications.

Clinical Trial Collaborations
We have a number of strong collaborations with researchers and clinicians who involve investigating novel treatments for a variety of conditions. These collaboration allow the conduct of ground breaking clinical trials in conditions such as depression, anxiety disorders, post-traumatic stress disorder, Alzheimer’s disease, pervasive developmental disorders and chronic pain.

Associate Professor Richard Blitar (Neurosurgeon) and Professor Dennis Velakoulis (Royal Melbourne Hospital and University of Melbourne)
• Professor Colleen Loo (University of NSW: Black Dog Institute)
• Associate Professor Peter Enticott, Cognitive Neuroscience Unit, Deakin University
• Associate Professor Geoffrey Littlejohn and Dr Emma Guymer, (Monash Medical Centre)
• Professor David Forbes and Ms Jane Nurse (Phoenix Australia – Centre for post-traumatic stress disorder University of Melbourne)
• Zahra Kazem-Mousavi, Associate Professor (University of Manitoba)
• Professor Cherie Galelty (Adelaide University and Adelaide Clinic)
INDUSTRY PARTNERS
We have established a collaboration with Medbio Limited, which involves exploring the relationship between autonomic arousal and response to magnetic stimulation treatments for affective disorders. We have additional partnerships or relationships with a number of brain stimulation device manufacturers including Medtronic (US), Neuronetics (US), MagVenture (Denmark), Neurosoft (Russia) and Brainway (Israel).

Device Development: In addition to our clinical and experimental trials, we are working closely with a variety of collaborators to develop brain stimulation technologies with the goal of providing more accessible and personalised stimulation devices.

- Professor Malin Premaratne, (Department of Electrical and Computer Systems Engineering, Monash University)
- Mark Armstrong (Practice Professor in Design; Monash University)
- Professor Jon McCormack (Faculty of Information Technology, Monash University)
- Robot Circus (Game software developer)

National TMS Clinical Trial Network: We have an established national network of TMS trials centres in multiple private psychiatric hospitals around Australia. This network has been engaged in the conduct of multiple multi-site clinical TMS trials.

CASE REPORT: Mrs P is a 40 year old woman who had experienced severe treatment resistant depression for close to a decade. She had tried every standard treatment for depression, including medications from all antidepressant classes, combination pharmacotherapy, and numerous courses of ECT and rTMS, none of which provided sustained benefit. Mrs P underwent DBS surgery in 2016, followed by a randomised trial of five stimulation settings that included a sham condition. Mrs C had a positive response to one of the five settings, with the severity of her symptoms decreasing by 50%. All other settings resulted in a return of her symptoms to pre-operative levels. When the device was adjusted back to the settings that resulted in an improvement in her mood, Mrs P again had a significant reduction in symptom severity. This included a 50% reduction in depressive symptoms and a marked reduction in suicidal ideation.

BACKGROUND
Major depression is a severe illness with high prevalence. Even when the full range of standard antidepressant treatments have been tried, 10-20% of patients continue to experience symptoms that result in marked disability and high morbidity. 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.

CONCLUSIONS
DBS of the BNST showed promise in delaying the symptoms of depression in this case. This provides further evidence that the BNST may prove an effective and safe site for DBS treatment of depression.

CURRENT STATUS
Recruitment on-going.

A randomized controlled trial of Theta Burst Stimulation for the treatment of mild to moderate Alzheimer’s Disease

BACKGROUND
Alzheimer’s disease (AD) is the most common form of dementia, with 1,700 newly diagnosed cases in Australia each week. AD is characterised by progressive decline in cognitive functioning in most areas, including in memory, attention, visuospatial ability, language and executive function. There is an urgent need to develop new treatments for AD as there are currently no effective treatments for these hallmark symptoms. One promising new treatment option is Theta Burst Stimulation (TBS); a non-invasive technique that can change the activity of cortical networks, such as the one implicated in cognitive impairment in AD. We are therefore conducting a double-blind placebo-controlled randomised pilot study comparing a treatment course of active TBS to sham TBS.

CONCLUSION
TBS showed some promise in potentially delaying the progression of cognitive decline in this case, and resulted in improvements in some cognitive functions. This provides promising evidence to continue investigating the utility of TBS in the treatment of AD.

CURRENT STATUS
Recruitment on-going.
Case Study: Repetitive transcranial magnetic stimulation for the treatment of fibromyalgia

Ms R is a 25 year old female who has a long-standing history of Major Depressive Disorder. Prior to undergoing a course of MST, Ms R had trialed numerous antidepressant medications, psychotherapies, ECT and Transcranial Magnetic Stimulation (TMS) with little to no benefit. Prior to treatment, Ms R experienced severe depressive symptoms including low mood, hopelessness, poor motivation, difficulties concentrating and suicidal ideation.

Ms R underwent a course of 15 MST treatments over a period of 5 weeks. Following completion of treatment, her depressive symptoms had substantially decreased by over 50%. At one- and three-months following the completion of her treatment, Ms R no longer met criteria for Major Depression.

Conclusion
MST showed some promise in alleviating symptoms of depression in this case, and resulted in improvements in some cognitive functions. This provides promising evidence to continue investigating the utility of TBS in the treatment of AD.

Current Status
Recruitment on-going.

Case Study: Repetitive transcranial magnetic stimulation for the treatment of fibromyalgia

Ms B is a 35 year old female who was formally diagnosed with fibromyalgia a year prior to her contact with MAPrc. Life with fibromyalgia was difficult for Ms B. She reported that her symptoms almost completely interfered with her general activity, ability to work, relationships with others, sleep, mood, and her overall enjoyment of life. Ms B described feeling overwhelmed by her symptoms and experienced little to no lasting relief from pain medication.

Ms B received 20 treatments of active rTMS over a four week period. Ms B experienced some significant benefits with treatment, including a 62.5% reduction in both pain intensity and pain unpleasantness at a one month follow up assessment. Ms B also reported a 56% reduction in pain interference upon her general activity, mood and enjoyment of life.

Conclusion
A four week course of left DLPFC rTMS was effective in reducing the impact and severity of pain in this case, and resulted in improvements in daily functioning and enjoyment of life. Importantly, this case also demonstrates that rTMS treatment has the potential to provide sustained pain relief and alleviation of symptoms without side effects, which is a limitation of most current pharmacological interventions to date.

Current Status
Recruitment on-going.
The Cognitive Neuropsychiatry lab aims to examine the relationships between mental illness, cognitive function and emotion processing. In particular, we focus 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.
The Cognitive Neuropsychiatry lab aims to explore 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.

HIGHLIGHTS
The year of 2016 has been a stimulating and fulfilling year for the Cognitive Neuropsychiatry team, with exciting developments and milestones achieved. To this end, we have seen the completion of one PhD (Dr Natalia Contreras) and two Honours students (Dane Easden and Ratu Lucky Nibbakan) with excellent outcomes, the addition of several new students at the Honours and doctoral levels as well as high-quality research and academic progress of existing students. From the perspective of academic outputs, our team has produced upwards of 40 peer-reviewed publications in high-impact journals, and conducted numerous symposia, oral and poster presentations at several local, national and international conferences. In term of philanthropic and collaborative efforts, the lab has broadened its reach and scope.

COLLABORATIONS

**NATIONAL**
- **Professor Jennie Ponsford**, Monash University
- **Dr Greg Yelland**, Monash University
- **Dr Yitz Hollandier**, Alfred Hospital
- **Dr Kymet Bozaoglu, Baker IDI**
- **Associate Professor Mal Hopwood**, Albert Road Clinic
- **Dr John Farhall**, La Trobe University
- **Dr Elie Fossey**, La Trobe University
- **Professor Pat Miche**, University of Newcastle
- **Professor Brian Dean**, Howard Florey Institute
- **Associate Professor Carol Harvey**, University of Melbourne
- **Professor David Castle**, St Vincent’s Health
- **Dr Tammy Van Rheenen**, Melbourne Neuropsychiatry Centre
- **Swinburne University Neuroimaging Facility**

**INTERNATIONAL**
- **Dr Rachel Mitchell**, Institute of Psychiatry, UK
- **Professor Val Gurran**, University College London, UK
- **Professor Celia Morgan**, University of Exeter, UK
- **Dr Philip Grant**, University of Giessen, Germany
- **Professor Iris Sommer**, University of Utrecht, Netherlands

**RESEARCH PROJECTS**
In the Cognitive Neuropsychiatry lab group, focus is placed on a large-scale research program, with a series of smaller studies subsumed under umbrella of this project. These individual studies are often run by students to fulfill the research component toward attaining their postgraduate qualifications (see Figure 1). Our large-scale research program ‘Genes and Cognition’ requires participants to complete a set battery of tasks designed to evaluate clinical symptomatology, cognitive function and eye movements. The majority of participants assessed by our research group will complete this battery. Thereafter, they may wish to further participate in specific projects, for instance neuroimaging sessions conducted at Swinburne University, or therapies aimed at strengthening specific thinking skills, such as attention, memory and organisation.
Clinical intervention studies
Professor Susan Rossell (Chief Investigator), Dr Neil Thomas, Shayden Bryce, Natalia Contreras, Stephanie Louise, Maree Reesor, Rachel Brand, Imogen Bell

FUNDING
Barbara Dicker Brain Science Foundation; MAZDA; Aikenhead Centre for Medical Discovery Research Endowment Fund.

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

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

For Study 4, participants attend a mindfulness-based group therapy program targeted at ‘voice-hearers’. Prior to and following this intervention, they are asked to undergo a neuromaging session to explore whether such therapy can lead to brain changes. In study 5, participants are randomly allocated to either receive six sessions of psychological intervention using imaginal exposure in addition to their usual psychiatric treatment, or to continue their usual psychiatric treatment. Baseline, post-intervention and follow-up assessments will assess outcomes relating to voice-hearing severity, distress and possible psychological mechanisms of change. Study 6 involves participants receiving four sessions of therapy focused on improving coping with distressful voice-hearing experiences, in conjunction with the use of a smartphone app for self-monitoring and coping strategies. This trial is being jointly conducted at Maprc and the Voices Clinic in Sussex, UK.

Method
For Studies 1, 2 and 3, participants are asked to attend a set number of hour-long group CTR sessions per week for a predetermined number of weeks. Baseline, mid-intervention, end-intervention, and follow-up assessments will be conducted, with cognitive performance (MATRICS) and self-reported independent living skills as the main outcome measures.

For Study 4, participants attend a mindfulness-based group therapy program targeted at ‘voice-hearers’. Prior to and following this intervention, they are asked to undergo a neuromaging session to explore whether such therapy can lead to brain changes. In study 5, participants are randomly allocated to either receive six sessions of psychological intervention using imaginal exposure in addition to their usual psychiatric treatment, or to continue their usual psychiatric treatment. Baseline, post-intervention and follow-up assessments will assess outcomes relating to voice-hearing severity, distress and possible psychological mechanisms of change. Study 6 involves participants receiving four sessions of therapy focused on improving coping with distressful voice-hearing experiences, in conjunction with the use of a smartphone app for self-monitoring and coping strategies. This trial is being jointly conducted at MAPrc and the Voices Clinic in Sussex, UK.

Current Status
Study 1 has been completed, and Studies 2, 3 and 4 are ongoing until end 2017. Studies 5 and 6 are ongoing until 2019.

Cognition and stress studies
Dr Caroline Gurvich (Chief Investigator), Dr Kymet Bozakou, Prof Susan Rossell, Ratu Lucky Nitibaskara, Dane Easden, Fran Juers

Funding
AMREP Collaborative Seed Grant; Platform Access Grant (Monash); Barbara Dicker Brain Science Foundation.

Background
Uncontrolled stress can have a significant adverse impact on higher order cognitive functions, and drive the development and exacerbation of mental illness. The need for research to further develop and improve coping with higher order cognitive abilities in groups with high versus low stress; i) identify variations in gene expression (specifically in genes that regulate dopamine and BDNF) that underpin the relationship between cognition and stress in a healthy population and ii) identify key psychological and life experience features that contribute to, or moderate the stress-cognition relationship. Secondary aims were to explore additional genomic mechanisms (such as telomere length) as well as the relationship with stress hormone cortisol that may further explain biological contributors to the stress-cognition relationship.

Method
A cross sectional study design was adopted that involved 61 healthy adult participants, aged between 18 and 65 years old (a subsample of 24 formed a ‘high stress’ group, and a subsample of 24 formed a ‘low stress’ group). Participants attended MAPrc for a single session, and provided saliva samples on the morning of testing (to allow for measurements of the stress hormone, cortisol, upon awakening) as well as blood samples for further genetic analysis. They completed demographic and personal history measures, including childhood stress, ongoing/life stress, and coping styles, a neuropsychological battery and eye-tracking tasks, including an emotional anti-saccade task.

Current Status
Data collection was completed in 2016, with data analysis and manuscript preparation now underway. Two honours students also used data from this project to complete their theses.
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 17 researchers, including six medical practitioners, two neuropsychologists and eight clinical trials coordinators, has contributed to the effort to find new treatments for Alzheimer’s disease and mood disorders.

Our expert ability and knowledge is reflected in the first-rate reviews we receive from various clinical trial stakeholders. We continue to foster invaluable partnerships with numerous practicing clinicians and 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 slow 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.

In 2016 saw the amalgamation of the MAPrc psychopharmacology teams this year, the unit has become a much larger research group. This transition was successfully guided by both Professor Jayashri Kulkarni and Dr Gleason and all staff showed how adaptive and fluid they can be. Of particular note in this transition was Dr Gleason’s ability to take on all principal investigator roles at the Caulfield site while continuing to demonstrate new work feasibility. This year we took on an additional three clinical trials, more than doubling the output of research performed by the team.

June of 2016 saw the team attract significant media attention through a feature segment on A Current Affair. The segment gave detailed insight into the research team and their work particularly in the field of Alzheimer’s disease. This media attention stimulated great interest into our research unit with the team receiving over 5000 national and international enquiries about clinical trials.
LZAX — EXPEDITION 3
CHIEF INVESTIGATOR
Dr Andrew Gleason and Associate Professor Stephen MacFarlane
ASSOCIATE INVESTIGATORS
Dr Anthony Sutherland, Dr Eli Kotler, Dr Claire Wise, Dr Sam Hunt

LIST OF RESEARCHERS
Clinical Trial Coordinator: Michael Kornhauser, Minver Carty
Cognitive Raters: Ella Modini

FUNDING — AMOUNT AND SOURCE
Eli Lilly

PROJECT OBJECTIVE
The LZAX clinical trial was a phase 3 placebo controlled study looking at the long-term safety and efficacy of solanezumab.

BACKGROUND
The LZAX study addressed the hypothesis that Alzheimer’s disease is related to the over expression of amyloid beta in the brain. Solanezumab is a monoclonal antibody that aims to clear amyloid beta from the brain thus reducing this neurotoxic plaque.

INCLUSION/EXCLUSION CRITERIA
The inclusion criteria for the study called for subjects with mild Alzheimer’s disease.

METHODOLOGY
Solanezumab was administered to subjects via intravenous infusion given every four weeks for 76 weeks. To measure the effect on cognition, subjects underwent regular ADAS-Cog assessments as well as a variety of functional assessments. In addition, the LZAX study investigated the effect of solanezumab on amyloid beta within the brain and all subjects underwent florbetapir PET scans to trace levels of amyloid within the brain.

PROJECT STATUS
Our site recruited 10 subjects for the LZAX study including the last subject to be enrolled among the 2100 subjects who participated worldwide. The placebo-control arm of this study was completed in October of 2016. In December 2016, preliminary results were released for the LZAX study and unfortunately the primary endpoints for the study were not met with no significant change in ADAS Cog being reported. This result has highlighted some of the challenges faced in the field of Alzheimer’s disease pharmacology, but it has not swayed efforts to continue to work towards new treatments.

AXOVANT — MINDSET
CHIEF INVESTIGATOR
Dr Andrew Gleason
ASSOCIATE INVESTIGATORS
Dr Anthony Sutherland, Dr Eli Kotler, Dr Claire Wise, Dr Hyacinta Xavier

LIST OF RESEARCHERS
Clinical Trial Coordinator: Paul Cortissios, Jenny Bortoli
Cognitive Raters: Dr Fenny Mulaidi, Dr Luke Smith

FUNDING — AMOUNT AND SOURCE
Axovant Sciences Ltd

PROJECT OBJECTIVE
The Mindset study is a phase 3 placebo controlled trial of the drug RVT-101 taken in combination with the cholinesterase inhibitor donepezil. The study aims to test the safety and efficacy of RVT-101 in subjects with mild to moderate Alzheimer’s disease.

BACKGROUND
RVT-101 is a 5-hydroxytryptamine subtype 6 (5HT6) antagonist which modulates cholinergic and other neurotransmitter systems. Operating with a profile distinct from cholinesterase inhibitors, RVT-101 aims to boost cognitive function via an independent mechanism of action.

INCLUSION/EXCLUSION CRITERIA
The inclusion criteria for the study called for subjects with mild to moderate Alzheimer’s disease who are taking a cholinesterase inhibitor donepezil.

METHODOLOGY
Subjects on this study are administered an oral tablet of RVT-101 or placebo every day for six months. The efficacy, in terms of cognitive improvement, is measured using the ADAS-Cog and ADCS ADL.

PROJECT STATUS
Worldwide, the study aimed to recruit 1150 subjects. Within Australia, our site was the highest recruiting site, screening 22 subjects and enrolling 11.

ESKETAMINE — 3004
CHIEF INVESTIGATOR
Professor Jayashri Kulkarni, Dr Andrew Gleason
ASSOCIATE INVESTIGATORS
Dr Alie Worsley, Dr Eli Kotler, Dr Antony Sutherland, Dr Claire Wise, Dr Sam Hunt

LIST OF RESEARCHERS
Clinical Trial Coordinator: Sue Del Sasso, Jenny Ung, Caitlin Finny
Cognitive Raters: Dr Fenny Mulaidi

FUNDING — AMOUNT AND SOURCE
Janssen Research and Development

PROJECT OBJECTIVE
The aim of this study was to test the long-term safety and tolerability of a newly prescribed oral antidepressant.

BACKGROUND
A multidisciplinary research team has proposed that esketamine is a promising oral antidepressant.

INCLUSION/EXCLUSION CRITERIA
Subjects were aged over 18 and met the DSM-5 diagnostic criteria for Major Depressive Disorder. All subjects need to exhibit treatment resistant depression (TRD) evidenced by non-response to >2 oral antidepressant treatment regimes.

METHODOLOGY
Subjects receive weekly to fortnightly doses of intranasal esketamine. Depression symptoms are measured using the MADRAS score and treatment is adjusted as symptoms change.

PROJECT STATUS
The Mindset study is a 52 week study with the option to complete a second extension phase running for an additional 52 weeks. Our teams has already enrolled 4 patients, and recruitment remains open.

Using vapourised nicotine to investigate harm reduction in people with severe persistent mental illness

MAPrc is currently running a VicHealth sponsored pilot trial to investigate if adding a tobacco harm reduction intervention to standard care for smoking cessation is an acceptable and attractive public health strategy for Victorian smokers with such severe mental illnesses as schizophrenia.

Victorians with severe mental illness are much more likely to smoke than the general Victorian population (62% vs 16%) and tend to smoke more cigarettes per day than the average smoker. This has important implications with high rates of smoking known to increase the risk of coronary heart disease and cancer. The higher rates of smoking in people with severe mental illness is the result of a higher rate of smoking uptake, combined with fewer quit attempts and markedly lower success rates in quit attempts.
A randomised trial examining the effectiveness of sympathetic nervous inhibition in alleviating the metabolic side effects of antipsychotic medications in patients with schizophrenia

**PRINCIPAL INVESTIGATOR**
Professor Gavin Lambert

**ASSOCIATE INVESTIGATORS**
Professor David Barton
J Dixon
N Straznicky

**FUNDING**
NHMRC Project Grant - $461,250
Commenced 2012

**Aim**
This study aims to explore the role of the sympathetic nervous system and its association with cardiovascular and metabolic risk factors. It also aims to determine the efficacy of moxonidine in reducing the metabolic side-effects of antipsychotic medications. Research has shown a link between antipsychotic medications and obesity, with patients with schizophrenia having increased risk of cardiovascular disease. Moxonidine is designed to treat hypertension and is an experimental treatment for the side-effects of antipsychotics.

**Current Status**
ongoing

Interactions between the serotonin transporter and sympathetic nervous system activity in patients with major depressive disorder—understanding the link between the brain and the heart

**PRINCIPAL INVESTIGATOR**
Professor Gavin Lambert

**ASSOCIATE INVESTIGATORS**
Professor David Barton

**FUNDING**
NHMRC Project Grant - $509,250
Commenced 2012

**Aim**
There is strong evidence suggesting that patients with major depressive disorder (MDD) are at increased risk of developing coronary heart disease. This has been associate with increased sympathetic nervous system activation as seen in one third of untreated MDD patients. A gene, known as the serotonin transporter (5-HTT) gene, is thought to be involved in this. This projects aims to identify the role of the 5-HTT gene on cardiovascular risk factors associated with increased sympathetic activity in patients with MDD. In addition, we aim to assess the effect of selective serotonin reuptake inhibitors in these patients.

**Current Status**
ongoing
RESEARCH AND AIMS
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 Associate Professor Simon Stafrace (Program Director, 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 consultation and liaison, emergency psychiatry programs, child/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.

In 2016, a number of conducted projects have had an impact on the delivery of care across Alfred Health and more broadly across Victoria. For example, two funded projects measured how frequently people across Alfred Health and more broadly in Victoria experienced poor quality of life and functioning and mental health care. We also conducted a review of high dependency psychiatry care across Victoria for the Victorian Government Department of Health and Human Services. The review highlighted opportunities to strengthen the environments, staff expertise and available interventions to more effectively and safely provide psychiatric intensive care.

In 2016, staff from the Mental Health Service Research Team or collaborating clinicians of Alfred Psychiatry had 19 papers accepted for publication in peer-review journals and gave nine conference or invited research presentations.

COLLABORATIONS
School of Nursing and Midwifery, Monash University.
School of Social Sciences, Monash University.
School of Psychological Sciences, Monash University.
Brain and Psychological Sciences Centre, Swinburne University of Technology.
Centre for Forensic Behavioural Science, Swinburne University of Technology.
Victorian Adult Burns Service, Alfred Health.
Malignant Haematology and Stem Cell Transplantation, Alfred Health.
Headspace the National Youth Mental Health Foundation.

2016 HIGHLIGHTS
Dr Stuart Lee commenced a National Health and Medical Research Council fellowship to measure the potential for cognitive and social skills training to improve the quality of life and functioning of people with schizophrenia.

Dr Stuart Lee
Review of non-acute bed-based services of Alfred Psychiatry
A/PROF SIMON STAFRACE & PHILIPPA THOMAS
Homelessness in people attending The Alfred's emergency department
DR EVAN SYMONS & DR ROXY TSUI
Care for people presenting post suicide to The Alfred's emergency department
ANTHONY DE CASTELLA
Examining outcomes of long-acting injectable antipsychotic treatment
PAM HELLEMA
Evaluating a group for admitted consumers with a trauma history to improve coping
PROF WENDY CROSS
Exploring how mental health nurses understand/deliver Trauma-Informed Care
VICKY NORTHE
Experience of contact with the Problem Gambling & Mental Health Service

ADULT, EMERGENCY & CONSULTATION-LIAISON
Dr Stuart Lee

CHILD AND YOUTH
Dr Liza Hopkins

RESEARCH MENTAL HEALTH SERVICE RESEARCH
TEAM STRUCTURE

MENTAL HEALTH SERVICE RESEARCH
Prof Jayashri Kulkarni, A/Prof Simon Stafrace & A/Prof Sandra Keppich-Arnold

RESEARCH MENTAL HEALTH SERVICE RESEARCH
OUR TEAM
Dr Stuart Lee

TEAM LEADER/CHIEF INVESTIGATOR
Professor Jayashri Kulkarni
Associate Professor Simon Stafrace
Associate Professor Sandra Keppich-Arnold

TEAM COORDINATORS
Dr Stuart Lee
Dr Liza Hopkins

PRINCIPAL RESEARCHERS
Professor Wendy Cross
Associate Professor Yitzchak Hollander
Dr Evan Symons
Dr Toby Winton-Brown
Fiona Whitecross
Anthony de Castella
Pam Helema
Vicky Northe
Rachel Barbara-May

RESEARCHERS
Dr Roxi Tou
Dr Laura McCartney
Stella Neale
Jennifer Hunt

STUDENT RESEARCHERS
Ross Anderson
Shayden Bryce
Richard Lawrence
Aimee Donaldson
Corinna Campbell
Jake Iaria
Background

Research has highlighted that traumatic experiences in childhood contribute to the emergence of various serious mental illnesses. Exposure to events experienced as traumatic in the hospital or care environments in which people are treated for acute mental illness can further exacerbate trauma-associated distress and hamper recovery. To improve how people with a trauma history are offered support, a trauma group was developed. This provided a facilitated education group and education brochures explaining what is trauma, how trauma affects us and how to cope with and stay safe with trauma while in hospital and the community.

Inclusion/Exclusion Criteria

Participants in the evaluation of the Staying Safe with Trauma group were: at least 18 years of age, had participated in at least one group, and were determined by their treating team to be capable of providing informed consent for research participation.

Methodology

A mixed-method design was used, with an audit conducted to identify participant characteristics and themes summarising discussion content. Participants were also invited to complete an anonymous feedback questionnaire assessing their experience of group participation and its impact.

Project Status

The evaluation of the pilot of the Staying Safe with Trauma group has been completed. The positive findings and feedback from consumers and group facilitators has led to the commitment to continue the group on the adult inpatient unit and explore expansion of the group to consumers in the community. The Staying Safe with Trauma Consumer Brochure has also been finalised with consumer and staff input and will be made available to consumers accessing Alfred Psychiatry care.

Chief Investigator

Alanna Lorenzon

Associate Investigators

Dr Stuart Lee

Catherine Bennett

Funding

$10,000 – Victorian Women’s Benevolent Trust

Aim of Project

Develop a written resource and facilitated education group and education brochures explaining what is trauma, how trauma affects us and how to cope with and stay safe with trauma while in hospital and the community.

Background

Exposure to events experienced as traumatic in the hospital or care environments in which people are treated for acute mental illness can further exacerbate trauma-associated distress and hamper recovery. To improve how people with a trauma history are offered support, a trauma group was developed. This provided a facilitated education group and education brochures explaining what is trauma, how trauma affects us and how to cope with and stay safe with trauma while in hospital and the community.

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The Perceptual and Clinical Neuroscience Laboratory Research Team is headed by Dr Steven Miller, a clinician in occupational and pain medicine, and a researcher in clinical neuroscience, visual neuroscience and consciousness science. The 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 preparation for the BRO project, the lab has recently concluded a large study on the psychophysics of binocular rivalry in controls and subjects with bipolar disorder. An additional arm of this work was eye movement research in control and bipolar subjects. This work was the subject of a PhD thesis by Dr Phillip Law. Other clinical work of the lab includes examination of vestibular neuromodulation as a novel, safe, and inexpensive therapy, to treat persistent pain conditions (and other clinical disorders). Finally, Dr Miller has performed detailed analyses of empirical and conceptual foundations of consciousness science, proposing new foundations for this nascent discipline.

2016 HIGHLIGHTS, AWARDS & DISTINCTIONS

Dr Miller and his team have progressed work on two awarded seed funding grants from Monash Institute of Medical Engineering and an awarded grant from Defence Health Foundation. This work has involved collaboration with Monash Faculty of Information Technology and Monash Arts Design and Architecture and is detailed below. Dr Miller published a high profile Commentary article in the international journal, Bipolar Disorders, calling for widespread assessment of the simple brain stimulation technique of caloric vestibular stimulation in a wide variety of psychiatric and neurologic disorders, drawing on recent large-scale meta-analyses of neuromaging studies.

COLLABORATIONS

Collaborating centres for the Binocular Rivalry Online project include Monash Faculty of Information Technology (Prof K. Ellis), QIMR Berghofer Medical Research Institute (Prof N. Martin, Dr T. Ngo), Queensland Brain Institute (A/Prof M. Wright), Black Dog Institute (Prof P. Mitchell), Bipolar Disorder Research Network (Prof N. Craddock; Dr X. Caseras; UK) and Institute of Psychiatric Genetics (Prof T. Schulze, Germany). Eye movement research is in collaboration with Dr Caroline Guurich. Current collaborators for the CVS work include Monash Arts Design and Architecture (Prof D. Flynn) and Monash Engineering (Dr A. Nunn), and for the completed CVS study in preparation for publication included Dr T. Ngo, Dr W. Barsell, A/Prof C. Arnold, Dr M. Chou, Dr P. New, S. Hill, Dr A. Nunn, A/Prof D. Brown and Prof S. Gibson.

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

RESEARCHERS
Dr P. Law, Dr T. Ngo, Dr C. Gurvich, Dr B. Paton, Dr S. Miller

FUNDING
Narsad Young Investigator Grant $60,000 over 2 years (2013-2015)

AIM
This project aimed to examine binocular rivalry in healthy individuals and subjects with bipolar disorder to ascertain which stimuli are most suitable for subsequent use in large-scale clinical and genetic endophenotype studies.

BACKGROUND
The project builds on earlier work by Miller and colleagues showing the rate of binocular rivalry to be slow in bipolar disorder. The project also determined that eye movements do not confound the slow binocular rivalry rate trait. Sixty control subjects and 20 subjects with bipolar disorder were assessed.

CURRENT STATUS
Publications are expected from this work in 2017 and the project is continuing.

Genetics of binocular rivalry

RESEARCHERS
Dr S. Miller, Dr T Ngo, Dr P. Law, A/Prof M. Wright, Prof N. Martin

COLLABORATORS
A/Prof M. Wright, Prof N. Martin

FUNDING
Defence Health Foundation ($25,000) Monash Institute of Medical Engineering ($20,000)

AIM
This project aims to move the testing of binocular rivalry to the online environment so as to facilitate the very large sample sizes (N=1000’s to 10,000) required to assess the clinical and genetic endophenotype utility of the trait.

BACKGROUND
The project builds on the two projects listed above and funding was utilised in 2016 for building of the prototype website for this work.

CURRENT STATUS
In collaboration with Monash Faculty of Information Technology, major technical challenges were overcome in 2016 with respect to prototype development including changing of the platform from Flash to HTML5. Preliminary user-interface testing also occurred in 2016 with resulting prototype refinements. Roll-out and quality assurance of the online test is expected in 2017.
The constitution of phenomenal consciousness: Toward a science and theory

RESEARCHER
Dr. S. Miller

FUNDING
Nil

BACKGROUND
This project ran over several years and aimed to examine the theoretical and empirical foundations of consciousness science. This was achieved by garnering a large number of national and international authors to contribute papers on such issues to a volume edited, and contributed to, by Miller which was published in 2015. In 2016 this work was cited prominently in a Nature Reviews Neuroscience article on consciousness science.

AIM
This long running project (since 2007) aims to examine the therapeutic efficacy of caloric vestibular stimulation, a simple, safe and inexpensive neuromodulation technique. The initial focus has been on neuromodulation of persistent neuropathic pain conditions and the first effectiveness trial of the technique in 34 patients has been completed with promising results. The trial will be submitted for publication in 2017.

CURRENT STATUS
Caloric vestibular stimulation is being applied in further clinical trials of pain conditions. A commentary article was published in 2016 on the clinical therapeutic potential of this brain stimulation technique in the journal, Bipolar Disorders.

TEAM
Chief Investigators: Adjunct Professor Brian Lithgow, Professor Jayashri Kulkarni, Professor Paul Fitzgerald, Associate Professor Jerome Maller

Associate Investigators: Dr. Roger Edwards, Professor Brian Blakley, Dr. Mandana Modirousta, Dr. Behzad Mansouri

Student Investigators: Ahmed Suleiman, Merangi Ashiri, Corey Bosecke, Zeinab Dastgheib, Amber Garrett

Funding
Monash Institute of Medical Engineering, $55,000.

Collaborations
Professor Zahra Moussavi, Canadian Chair of Bioengineering, University of Manitoba, Adjunct Professor Brian Lithgow, Department of Bio-Engineering, University of Manitoba; Professor Brian Blakley (ENT); Dr. Mandana Modirousta (Psychiatrist); Dr. Behzad Mansouri (Neuropsychologist); Dr. Roger Edwards, Neural Diagnostics Pty Ltd, Melbourne, Victoria.
FEATURE CASE STUDY
Application of EvestG™ to detect changed vestibular neural function associated following concussion/ mild Traumatic Brain Injury

CHIEF INVESTIGATORS
Professor Jayashri Kulkami
Associate Professor Brian Lihgow

LIST OF RESEARCHERS
Dr Roger Edwards
Dr Behzad Mansouri (Neurologist)
Abed Suleiman

FUNDING
CRC-P Program $2.2M
CRC-P Participants $5.8M
Neural Diagnostics Pty Ltd, GE Healthcare Pty Ltd, and MAPrc

AIM
Development of Technology for the faster, objective detection and monitoring of severity of symptoms of Concussion, Head Trauma and their complications related to sports and other accidents.

This project seeks to develop affordable and efficient care pathways for concussion and head trauma treatment extending from the playing field to recovery by verifying and/or validating the ability of innovative electrophysiological and magnetic-based neuro-technologies to measure changes in the brain after injury, including changes in cognitive function and/or the emergence of psychological symptoms.

BACKGROUND
Accurately detecting concussive injuries and monitoring functional recovery or any emergence of Major Depression (MD) is slow, subjective and is associated with high levels of misdiagnosis. Its global health cost burden exceeds $200Bn annually, and $28Bn in Australia.

Electrovestibulography, EvestG™, was the ABC Invention-of-the-Year in 2010, and in 2015 the Research Team was one of the Eureka Award Finalist for Excellence in Multidisciplinary Science.

The Team has now over 8 peer-reviewed publications with evidence that the Technology can objectively detect and diagnose people with changed brain function. Specifically, EvestG is unique in its ability to measure function of deep-brain structures associated with the balance system and regions of interest associated with concussion with an information-rich signal bandwidth of 100 times wider than electroencephalography.

The Team has hypothesised that it may have a role in a pathway of care for concussion, as Loss-of-Balance and cognitive inattention are the first observed symptoms and the last to resolve. In addition, the literature suggests that psychological issues, such as the emergence of Major Depression, occurs in around 50% of all injuries, which MAPrc’s previous Proof-of-Concept research indicates EvestG can discriminate with around 80% accuracy.

Further, early results on the application of of EvestG measurement on people recovering from mTBI [shown below], gave the EvestG Team confidence that it was measuring a significant and potentially diagnostic response associated with recovery from mTBI, and combined with its early Proof-of-Concept results published in 2015, may also be able to detect comorbid aspects of the emergence of Post-concussive syndrome, such as Major Depression. (Lihgnow et al (2015)).

METHODOLOGY
Correlation of EvestG measurements, with 3T MRI imaging, and Neuropsychological assessments (SCAT5, etc.)

PROJECT STATUS
While, early EvestG proof-of-concept data has been analysed, increased data sets are required to be built prior to undertaking randomised blinded studies.

Commencing in June 2017, this CRC-P will work towards the verification and validation of objective biomarkers of brain function changes following concussion as detected by EvestG, TMS and 3T-MRI, and in the process develop care pathways using combinations of the 3 devices to achieve rapid, objective screening of concussion on the field of combat, work and sport or using a portable and affordable TMS device, with the injured then referred to clinics for further objective evaluation and monitoring of recovery with EvestG and/or 3T-MRI.
Brain Stimulation Training Programs at MAPrc
www.tmscourse.com

Therapeutic Brain Stimulation 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.

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

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.

In 2016 we conducted three training courses. 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.

These courses were attended by clinicians and researchers from Australia, Mauritius, New Zealand, and Malaysia.

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.

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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.

The clinic is led by Associate Professor Neil Thomas, an expert on psychological therapy for voices, as part of the Cognitive Neuropsychiatry Lab headed by Professor Susan Rossell.

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CLINICS
THE VOICES CLINIC

TEAM LEADER
Associate Professor Neil Thomas

TEAM
Dr Rachel Brand
Elissa Moore,
Imogen Bell
Undergraduate MBBS Medical Teaching: Monash University MBBS Year 4 Medicine of the Mind MED4190

CLINICAL SITE CO-ORDINATOR
Professor Paul Fitzgerald

ASSISTANT CLINICAL SITE CO-ORDINATOR
Dr Leo Chen

CLINICAL SITE ADMINISTRATOR
Anne Crawford

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

We direct the MBBS Year 4 students’ clinical placements with Alfred Health for the Year 4 Psychological Medicine teaching program.

Over the course of 2016 we organised the psychiatry clinical placements for 70 Year 4 MBBS students with Alfred Psychiatry. Our students gain wide-ranging experience in Psychiatry on the inpatient wards at the Alfred, with the Community Mental Health Service clinics, Malvern Private Hospital’s Drug and Alcohol Addiction Recovery Treatment program, the Victoria Clinic, and the Aged Psychiatry Department at Caulfield Hospital.

This is a 9-week clinical placement program that emphasises clinically based learning and teaching. Students are embedded within clinical teams and expected to play an active role. Clinical staff and students are provided with clear guidelines about the students’ roles and responsibilities. Medicine of the Mind also involves psychiatry registrars in its teaching program to foster peer learning.

As well as direct clinical experience, our teaching program also comprises:

• A didactic teaching program which utilises the extensive knowledge and teaching expertise of senior academics within Alfred Psychiatry to conduct topical-based tutorials which familiarise students with critical concepts and disorders. This program also includes specialist Community Health teaching sessions.

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

The current structure of the program reflects a constant review and remodelling process which aims to achieve several things: to research new and vibrant models for teaching psychiatry; to encourage, recruit and reward vibrant teachers; to use staff and materials more efficiently; and to smooth the process by which students acquire the psychology and psychiatry knowledge they will need to be doctors.

Medicine of the Mind continues to identify opportunities to improve students’ learning experience. Student feedback and assessment indicates that these initiatives are having dramatic effects in increasing satisfaction with the course and quality of learning.

In 2016 we began an association with Malvern Private Hospital. Each of our Year 4 MBBS students attends for a week-long clinical placement with the residential Drug and Alcohol Addiction Recovery Treatment program. This contact with recovering addicts allows our students the opportunity to see positive outcomes in this field. Students have found this program to be very rewarding.

Monash University MBBS Year 5 MED5091 Advanced clinical practice 1 Psychiatry Selective/Specialty

CLINICAL SUPERVISOR
Professor Jayashri Kulkarni

ADMINISTRATIVE SUPPORT
Michaela Corr

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

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

Under Professor Jayashri 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.

In 2016, once again, we had ten students complete their MED5091 Psychiatry selective or specialty with Professor Jayashri Kulkarni.

Three of these 2016 MBBS final year students were co-authors on published papers in peer-reviewed journals.


Bachelor of Medical Science (Honours)

The Monash University Bachelor of Medical Science (Honours) is a 12 month degree programme for MBBS students and graduates. The program introduces students to research practice by embedding them 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 BMedsSci students a broad array of research projects to choose from. In 2016 our senior researchers supervised five Bachelor of Medical Science (Honours) students at our centre.
The de Castella Run held each year on the last Sunday in August is our major fundraising event. Over 1600 runners registered in 2016.

The run creates its own unique atmosphere of friendliness and shared caring purpose, to raise money to help people suffering from mental illnesses.

Set along the scenic Kew Boulevard, this very special day is fun for the whole family. Events included the Vision PT 5km walk/run, Mizuno 10km and Nostra Homes 15km running events. There was also a Run Ready athletics program for kids aged 3-10 years. Post event participants can enjoy the Mind & Body Expo of stalls such as free massage, free yoga, a MAPrc cake stall, petting zoo, music and face painters.

The Vision Personal Training crew were there to motivate participants with a warm up at the start line. Lululemon supported the run with a colourful uplifting cheer squad positioned along the course to entertain participants.

We were very pleased with the resulting $75k dollars raised. The run is organised through the combined efforts of the Old Xaverians’ Athletics Club and MAPrc.

MAPrc has been privileged to partner this amazing community event for the last 6 of its 36 year history. Donations and fundraising outcomes contribute vital income which is used in the cost of research participants, equipment, extra treatment programs for patients and scholarships for PhD students to undertake vital mental health research at MAPrc.

Thank you to our sponsors, partners and participants for making a difference to mental health outcomes for families, patients and the wider community.

Want to join in next year?
Then visit our website www.decastellarun.com.au

2016 ACQUIRE LEARNING DE CASTELLA RUN 2 MEND MINDS
DONATIONS & FUNDRAISING
As a not for profit research and teaching centre, MAPrc increasingly relies on donations and fundraising to generate funds to help us achieve our goals and outcomes. We are extremely grateful to all those who have donated to MAPrc either directly or via one of our fund raising events. While these donations make up a relatively small proportion of our total annual budget, they are critical funds that support a wide range of activities which would otherwise be unfunded. Some of these include;

• Supporting our many post graduate research students and their projects
• Generation of pilot data (from small versions of a full study) which is required for submission to most competitive research grant schemes
• Top up funding for MAPrc funded projects where the amount awarded in a grant might not cover the full cost of completing a project or trial
• Dissemination of research findings at conferences and in refereed journals
• MAPrc special projects and events

We are forever grateful to all those who donated to MAPrc during 2016.

MENTAL HEALTH WEEK 2016
Every year, the 10th of October marks World Mental Health Day. MAPrc was proud to be a part of the Mental Health Week Launch event on Tuesday the 11th of October at the Deakin Edge Theatre in Federation Square.

Co-ordinated by the Mental Health Foundation of Victoria, the event provided a number of activities including community festivals, art exhibitions, music, theatre and seminars — all in the name of broadening our community’s understanding of mental health issues and reducing the stigma that is all too often attached to mental illnesses.

The MAPrc team were a strong presence at the launch. As the only research centre participating, staff were ready to answer questions and educate attendees on the range of studies at the centre and the different approaches and developments in our research.

Awareness around mental health is growing but more focus needs to be placed on how to fix these existing conditions which impact not only the individuals suffering from mental illness but their families, carers and the community at broad.
We are also incredibly grateful to all the wonderful people who volunteer their time to support MAPrc, both at our many external community events, and on-site at MAPrc, assisting with the day to day operations of the Centre. As a not-for-profit organisation, volunteers provide MAPrc with the ability to achieve more and therefore make a bigger impact on the lives of people living with mental illness. Our volunteers come from a wide range of backgrounds, and range from members of the general community to undergraduate medical, and other students. Whether it be the one volunteer who assists us with entering the backlog of data for a current research project, or the 150+ volunteers who enable us to hold an event as big as the de Castella Run 2 Mend Minds, we couldn’t do it without you! MAPrc is also proud of the work of our large number of Research Affiliates who, although not employed by us, are a critical part of our research team. Our Affiliates include health professionals employed in clinical roles within the Alfred Health Service who choose to become involved in supporting a particular research project of interest, as well as researchers from other organisations. We are able to acknowledge them as valuable members of our wonderful research team with a Monash University Affiliate appointment. Other affiliates have input into MAPrc teaching activities and again often perform these roles in addition to their paid appointments in departments outside MAPrc.

Cindy Yu

To all our volunteers and affiliates, we thank you for helping to mend minds
### Financial Report Summary

MAPrc is a joint Centre of Monash University and Alfred Health, resulting in MAPrc finances being split across both Alfred Health and Monash University finance systems, creating a degree of complexity in managing and reporting on the Centre’s finances. The report above is an integrated Alfred Health / Monash University report of MAPrc financial activity for the 2016 calendar year reported in broad categories of income and expenditure. Overall MAPrc recorded expenditure greater than income of $868,543. The main drivers were:

i) A large amount of research funding received in 2015 was carried forward for expenditure in 2016,

ii) An increase in salary related costs. In 2016 MAPrc acquired the Caulfield Hospital Aged Psychiatry Clinical Trials Unit which included several new medical and research staff members. Funding received from trials being conducted by the Caulfield team increased the commercial research funding for MAPrc, but revenue generated was less than salaries paid.

It is anticipated this unit will generate substantially more revenue in 2017.

#### 2016 Highlights

**Competitive Research Grant Funding**

In 2016 there was a reduction in competitive research grant revenue. Competitive research grants are comprised predominantly of project grants and Fellowships from NH&MRC and ARC. There were no new NH&MRC or ARC grants commencing in 2016 while two existing grants concluded in 2015. This resulted in a reduction in grant funding received. Competitive research grants are extremely challenging to attain and the significant size of each grant means finishing one or two grants, or commencing one or two grants in a given year, significantly alters the total funding received from this source.

**Commercial Research Funding**

There was an increase in commercial research funding in 2016. This represents funding received from companies such as pharmaceutical on treatment device companies. In 2016, MAPrc acquired 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 along with increased salary related and other costs associated with conducting the additional clinical trials.

**Government/Institutional Grants VS Institutional Overheads & Charges**

Alfred Health provide rent and facilities funding to MAPrc, and subsidise a small 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 level, faculty level and School level to cover Institutional and Overhead costs.

#### Short Courses / Conference

In 2016 MAPrc ran an increased 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 resulting in increased revenue from course fees and conference registration fees and sponsorship.

**Partnerships**

MAPrc partners include Swinburne University and Healthscope along with several non-financial partner organisations in which collaborative research and clinical activities are conducted.

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### 2016 RESEARCH GRANTS & FUNDING

<table>
<thead>
<tr>
<th>NHMRC</th>
<th>CHIEF INVESTIGATOR(S)</th>
<th>AMOUNT ($) RECEIVED IN 2016</th>
<th>YEARS OF FUNDING &amp; TOTAL FUNDING FOR DURATION OF GRANT</th>
<th>ADMINISTERING INSTITUTION</th>
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<tr>
<td><strong>Women's Mental Health Research</strong></td>
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<td></td>
<td>J Kozhemi, M Barik, S Rao, S Quirk, S Gwini</td>
<td>nil</td>
<td>2017 - 2019</td>
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<tr>
<td><strong>APP1105089</strong> Ketamine therapy among patients with treatment-resistant depression: a randomised, double-blind, placebo-controlled trial.</td>
<td>CIA C Loo, P Mitchell, P Gwian, PB Fitzgerald, N Glöckler, K Lapidus, D Habli-Pavletic, A Somogyi, V Gavaz</td>
<td>$628,305</td>
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<td><strong>APP1077657</strong> Advancing novel brain stimulation treatment for severe depression. Practitioner Fellowship</td>
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<td>M Kaur, PB Fitzgerald</td>
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<td>G Lambert</td>
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<td></td>
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**AUSTRALIAN RESEARCH COUNCIL (ARC)**

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<tr>
<th>NHMRC</th>
<th>CHIEF INVESTIGATOR(S)</th>
<th>AMOUNT ($) RECEIVED IN 2016</th>
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<tr>
<td><strong>Therapeutic Brain Stimulation Research</strong></td>
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### 2016 RESEARCH GRANTS & FUNDING

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<tr>
<th>MONASH UNIVERSITY GRANTS</th>
<th>CHIEF INVESTIGATOR/S</th>
<th>AMOUNT ($) RECEIVED IN 2016</th>
<th>YEARS OF FUNDING &amp; TOTAL FUNDING FOR DURATION OF GRANT</th>
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<td><strong>Women’s Mental Health Research</strong></td>
<td>C Gunvirich</td>
<td>$6,700</td>
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<td></td>
<td>P Fitzgerald, M Premaratne, M Harrison, A Benci, M Armstrong, R Rajan</td>
<td>$190,000</td>
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<td><strong>Therapeutic Brain Stimulation Research</strong></td>
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<td>Dr S Miller, Dr K Ellis</td>
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<tr>
<td><strong>Non-invasive neuromodulation of persistent pain and allodynia using caloric vestibular stimulation, Monash Institute of Medical Engineering Seed Fund</strong></td>
<td>Dr S Miller, Prof D Flynn, Dr A Nunn</td>
<td>$18,333</td>
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<tr>
<td><strong>Cognitive Neurophysiology</strong></td>
<td>D Castle, S Rossell, C Gallely, A Harris, P Francis, D Sliskin</td>
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<td><strong>PCNL</strong></td>
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<td>$10,000</td>
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### 2016 RESEARCH GRANTS & FUNDING

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<th>COMMERCIAL FUNDING</th>
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<th>AMOUNT ($) RECEIVED IN 2016</th>
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<tr>
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<tr>
<th>PRIVATE PHILANTHROPY NOT FOR PROFIT</th>
<th>CHIEF INVESTIGATOR/S</th>
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<th>YEARS OF FUNDING &amp; TOTAL FUNDING FOR DURATION OF GRANT</th>
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<td><strong>Therapeutic Brain Stimulation Research</strong></td>
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<td><strong>Perceptual &amp; Clinical Neuroscience Laboratory</strong></td>
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### GOVERNMENT FUNDING

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<th>AMOUNT ($) RECEIVED IN 2016</th>
<th>YEARS OF FUNDING &amp; TOTAL FUNDING FOR DURATION OF GRANT</th>
<th>ADMINISTERING INSTITUTION</th>
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<td><strong>Mental Health Service Research</strong></td>
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<tr>
<td><strong>Mental Health Service Research</strong></td>
<td>P Thomas, S Lee, S Staface, R Dubé, J Mangels</td>
<td>$39,886</td>
<td>2015-2016 $49,632</td>
<td>Alfred Health</td>
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</table>
JOURNAL ARTICLES
WOMEN'S MENTAL HEALTH
RESEARCH TEAM


CoGnitiVe neUroPsychiatry


Gurvich, C. Insights to the schizophrenia continuum: A breakdown of cued eye movements in schizotypy and biological relatives of schizophrenia patients. Neurology and Biomedical Reviews. 2016.

LIMPs Th1 phenotype (Th1) and Th2 phenotype (Th2) profiles in children with clinical symptoms of attentional control in major depression: A pilot study. Journal of Clinical Neuroscience. 2016.


CoGnitiVe neUroPsychiatry


Gurvich, C. Insights to the schizophrenia continuum: A breakdown of cued eye movements in schizotypy and biological relatives of schizophrenia patients. Neurology and Biomedical Reviews. 2016.
Monash Alfred Psychiatry research centre (MAPrc)
RESEARCH PROJECTS

Cognitive and neurophysiologic effects of transcranial direct current stimulation: Assessing the impact of concurrent task performance
Mr Aron Hill Current

Cortical Inhibition and working memory in Schizophrenia
Ms Karyn Richardson Completed

Enhancing neuroplasticity in the dorsolateral prefrontal cortex using non-invasive brain stimulation
Mr Aron Hill Current

Enhancing working memory with transcranial direct current stimulation: The impact of combined prefrontal and parietal stimulation
Mr Aron Hill Current

Optimising the use of Theta Burst TMS
Mr Sung Wook Chung Current

COGNITIVE NEUROPSYCHIATRY TEAM STUDENTS RESEARCH PROJECTS

A brain imaging study of auditory verbal hallucinations and inhibition in patients with schizophrenia
Toni Pikkaos, Honours Current

A phenomenological study of auditory verbal hallucinations in a non-clinical adult population
Michelle Robertson, Honours Current

Auditory verbal hallucinations in relation to mood in bipolar disorder and major depressive disorder
Wei Lin Teh, Postdoc Current

Development and application of trauma-focused intervention for auditory verbal hallucinations
Rachel Brand, PhD Current

Does visual processing training enhance cognitive remediation therapy outcomes in people with schizophrenia?
Natalia Contrañas, PhD Current

Ecological momentary assessment and intervention to enhance self-management of persistant auditory verbal hallucinations
Imogen Bell, PhD Current

Examining the benefits of cognitive remediation on neurocognitive and functional outcomes in schizophrenia relative to an active control
Shayden Bryce, D.Neuropsych Current

Genetic variations and dopaminergic contributions to prefrontal cognitive systems in schizophrenia
Caroline Gurvich, Fellow Current

Investigating factors that influence the efficacy of cognitive remediation therapy in people with schizophrenia
Manee Rezer, D.Psych Current

Neuroimaging correlates of dysfunctional semantic processes in schizophrenic formal thought disorder
Phil Summer, PhD Current

Self, attachment and trauma in relation to voices
Monique Scott, PhD Current

The impact of a mindfulness-based intervention for auditory hallucinations on localised brain activity, attention and perceived symptoms with schizophrenia patients
Stephanie Louise, PhD Current

The influence of the glutamatergic system on cognition across the schizotypy/schizophrenia continuum
Lizzie Thomas, PhD Current

The muscarinic cholinergic system and cognition in schizophrenia
Sean Carruthers, PhD Current

MENTAL HEALTH SERVICE STUDENTS RESEARCH PROJECTS

A General practitioner survey on youth mental health services in south east Melbourne
Toby Winton-Brown (MAPrc staff: Liza Hopkins) Current

A Randomised Controlled Trial to Evaluate the Effects of a Self-Help Manual Intervention on Psychological Distress and Quality of Life for Patients Undergoing a Haemopoietic Stem Cell Transplant (SCT)
Sue De Bono (MAPrc staff: Stuart Lee) Current

Client and referrer feedback following contact with the State-wide Problem Gambling and Mental Health Program
Vicky Northa (MAPrc staff: Stuart Lee) Current

Cognitive Functioning in Patients with Advanced Lung Disease and following Lung Transplantation
Jane Harris (MAPrc staff: Stuart Lee) Current

Discovery College Evaluation
Liza Hopkins Current

Housing instability and the reason for attending The Alfred Emergency & Trauma Centre
Simon Starace Current

Peer education and resources to empower women distressed by a trauma history to ask for help
Pam Hellmam (MAPrc staff: Stuart Lee) Completed

Problem Gambling in People Seeking Treatment for mental illness
Dan Lubman (MAPrc staff: Stuart Lee) Completed

Prospective assessment of the experience and impact of Reall an 8-week social skill training group for people with a psychotic illness
Bronwyn Wauchop (MAPrc staff: Stuart Lee) Current

Retrospective audit of Patients Attending Alfred Emergency and Trauma Centre Post Suicide or Self-harm
Evan Symons (MAPrc staff: Stuart Lee) Current

Retrospective audit of people treated with Long-Acting Injectable Treatments (LAIs): Usage Patterns and Outcomes
Anthony da Castella Completed
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<tr>
<td>PhD</td>
<td>Amity Green</td>
<td>Monash University</td>
<td>Schizophrenia Glycine Study</td>
<td>Paul Fitzgerald, R Croft</td>
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<tr>
<td>PhD</td>
<td>Jacqueline Riddford</td>
<td>Deakin University</td>
<td>Investigating ocular-motor correlates of abnormal mirror system functioning in autism</td>
<td>Caroline Gurvich, Pieter Enticott, Joanne Fielding</td>
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<tr>
<td>PhD</td>
<td>Ross Anderson</td>
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<td>Psychological wellbeing from the perspective of adolescents with vision impairment</td>
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Special thanks to the large team of dedicated, intelligent and wonderfully good humoured people that have contributed to putting this report together.

IMAGES
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Designed by Deborah Gilkes at zeborahdesign@gmail.com