MONASH University

MONASH PSYCHOLOGICAL SCIENCES

PHD (CLINICAL PSYCHOLOGY) AND PhD (CLINICAL NEUROPSYCHOLOGY) PROJECTS

A SAMPLE OF PROJECTS ON OFFER FOR 2021

Researchers from the School of Psychological Sciences are offering a range of clinical research projects in 2021 that may be suitable for either PhD (Clinical Psychology) or PhD (Clinical Neuropsychology) (unless otherwise specified). Particular projects or areas of research for candidates applying for the program commencing 2021 are listed below.

Researcher	Project Area
Dr Lucy Albertella	What are the cognitive correlates of adaptive coping and could lifestyle interventions help to boost adaptive coping during times of adversity?
Prof Peter Anderson	1) Brain development throughout childhood in individuals born very preterm. We are about to embark on a 20-yr follow-up of a cohort of individuals born very preterm who have had MRI brain scans shortly after birth, and at 7 and 13 years of age. Extensive neuropsychological assessments have also been conducted throughout childhood. At the 20-yr follow-up we will again be conducting advanced MRI brain scans and neurobehavioural assessments. I am seeking a PhD student who is interested in doing a MRI based project examining brain development over a 20-yr period. *Clin Neuro preferred* 2) Prenatal alcohol exposure and brain structure. We are studying the long-term effects of prenatal alcohol exposure during pregnancy, with a specific focus on low to moderate levels of drinking. Low levels of drinking is common during pregnancy, but the effects on the brain are unknown. I am seeking a PhD student who is interested in do a MRI based project studying brain structure in children exposed to varying levels of alcohol prenatally. *Clin Neuro preferred* 3) Social functioning/competence in 20-year old survivors born very preterm. While it is well established that individuals born very preterm are at risk of cognitive, educational, motor and emotional difficulties, less is know about long-term social functioning. This study will compare social functioning in a large cohort of 20-year-olds born VP to individuals born full-term, and investigate infant and childhood factors that predict social deficits using extensive data collected on these individuals over the past 20 years. *Clin Psych preferred*

Dr Bei Bei	Our group harmonises strengths and knowledge from clinical psychology and sleep and circadian rhythm fields. Topics for HDR projects are worked out collaboratively with the candidate. We work extensively with the adult and adolescent populations, as well as specific populations (e.g., individuals with sleep difficulties such as insomnia, perinatal women and new parents). Projects broadly related to sleep and mental health, and improving sleep and wellbeing through cognitive-behavioural interventions. For example, (1) The psychological and behavioural regulations of sleep. (2) The relationship between sleep and mental health (e.g., mood, anxiety, and other psychiatric symptoms/disorders). (3) Cognitive behavioural therapy for insomnia.
Dr Michelle Byrne	Projects in psychoneuroimmunology from a developmental (puberty) perspective: 1. Mental health outcomes associated with trajectories of immune-endocrine markers over time in adolescent girls; 2. Immune markers associated with functional connectivity of visceromotor and default mode networks during rest and social processing/evaluative tasks in adolescent girls; 3. Pilot study on individual differences in reactivity to social evaluative stress, and associations with health disparities among gender and sexual minority adolescents
A/Prof Adrian Carter	1. Responsible Innovation of Digital Mental Health. The 21st century has witnessed an explosion of digital devices (e.g. smartphones, health apps, wearables, digital pills, e-Health records, portable brain recording devices) that are able to track large amounts of personal data that can be used to inform clinical treatment, diagnose disease, monitor our health and well-being, and potentially predict the onset of disease, such as Parkinson's disease years before the development of observable symptoms. This is referred to as digital mental health. With 6 billion phone subscriptions reaching 87% of the world's population, smartphones will transform our ability obtain clinical data from users and provide personalised healthcare. These developments promise to transform how medicine is performed, and provide unprecedented health benefits. Digital mental health also raises unprecedented ethical (e.g. privacy, surveillance) and regulatory issues (e.g. they are currently under-regulated) that need to be addressed. These technologies may also be used for non-therapeutic purposes by third parties, such as employers (e.g. wellness programs), educators, governments, the courts and insurers (with a number of companies already providing reduced premiums for allowing them to track your personal data). It is also not clear who owns or can access this data. This project will examine the technological, ethical, governance and economic challenges raised by digital mental health, including a qualitative and quantitative study of stakeholders' views on the use of digital mental health technologies. 2. The ethics of neurological innovation The clinical trial of invasive neurotechnological interventions, such as deep brain stimulation and other sophisticated brain computer interfaces, raise complex ethical challenges that must balance the desire to develop effective treatments for otherwise intractable disorders and the need to avoid preventable harm to patients and their families. These issues include: the

	challenge in obtaining informed consent from patients desperate for a cure, managing patient's expectation of therapeutic benefit from the trial, and the responsibility of the research team to provide ongoing care and device management over the lifetime of the device in the context of short-term project funding. This study will employ various qualitative methodologies in order to provide ethical guidance to researchers and clinical teams in conducting trials of invasive neurological interventions.
Dr Yann Chye (with Prof Murat Yucel)	Cannabis is increasingly being viewed as relatively harmless, with advocates for legalisation of cannabis for medical and scientific purposes. While compounds within cannabis may hold therapeutic potential, prolonged and heavy recreational use has been associated with adverse effects on cognition and mental health. Emerging evidence suggests that the extent of harms and benefits depends on the interaction between the two primary constituents of the cannabis plant matter: delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD). This project aims to uncover and model the links between prolonged exposure to these various compounds within cannabis, and cognitive and psychological factors, in regular cannabis users. The successful candidate will gain valuable experience and skills in participant recruitment, cognitive assessment, and data analysis.
Prof Sean P.A. Drummond	My students are heavily involved in shaping their own projects. Generally, we start with some of the ongoing work in the lab, and the student has the opportunity to develop their interests, building from the foundation of those projects. This could involve utilising already collected data, ongoing data collection, and/or new data collection. Given current activities in the lab, the areas in which it would make most sense for a student to work include: 1) insomnia (e.g., the role of adherence in CBT for Insomnia; influence of insomnia on the bed partner); 2) interaction of sleep with PTSD and anxiety disorders (e.g., mechanistic role of sleep in fear; the interaction of PTSD and obstructive sleep apnea); and/or 3) impact of sleep loss and circadian disruption on decision making. I am open to other ideas outside these areas, assuming we can develop manageable theses around them.
Prof Leonardo Fontenelle	1. Compulsivity, Impulsivity and Anxiety as Transdiagnostic Traits I am interested in the reasons why people consciously engage on behaviors that end up being counterproductive in the long term. This includes a number of experiences and traits that are often mentioned in the literature but yet remain poorly understood, such as compulsivity, impulsivity and anxiety/panic. I understand that compulsive, impulsive and anxious traits can vary along a spectrum of severity and that the line that separates normal from pathological traits can be blurred. Thus, the natural history of subthreshold forms of distress is a major topic of interest of our group. Yet, based on their levels of distress, we aim to answer questions that are relevant for clinical populations with a range of conditions including obsessive-compulsive and related disorders; disorders due to addictive behaviors; anxiety and related disorders; and a range of under reported compulsive, addictive and anxious phenotypes. *Clin Psych preferred* 2. Environmental Factors as Precipitants of Compulsive, Impulsive and Anxiety Disorders We are also interested in events and situations that may contribute to the

	conversion from subthreshold to clinical forms of compulsivity and impulsivity, including stressful life events, poor lifestyle (poor sleep, decreased physical activity, unhealthy diet, etc), and people's beliefs regarding self efficacy or free will. A greater understanding of these risk factors may help increasing "at risk" populations to develop resilience, a better life style and increased sense of control over their behaviors. *Clin Psych preferred* 3. Trans Diagnostic Therapeutic Approaches to Compulsivity, Impulsivity, and Anxious Traits We believe that the boundaries between different psychiatric disorders are imprecise, that these conditions often share biological mechanisms and that their treatments are frequently not disorder specific. For this reason, we are particularly interested on predictors for response to treatments that cut across different disorders, in clinical and subclinical forms. These treatments include both pharmacotherapeutic strategies (e.g. serotonin reuptake reuptake inhibitors) and so-called third wave cognitive behavioral therapies (e.g. acceptance and commitment therapy, mindfulness, etc) administered via the Internet. *Clin Psych preferred*
Dr Kate Gould	Understanding, preventing and treating cybercrime after acquired brain injury (ABI) https://supervisorconnect.med.monash.edu/projects/understanding-preventing-and-treating-cybercrime-after-acquired-brain-injury-abi
Dr Melinda Jackson	I have two broad research areas in which projects can be developed. The first is examining the efficacy of a digital mindfulness therapy to improve sleep and mental health outcomes in specific populations of interest (some ideas are adolescents, carers of persons with dementia, or those who do not respond to CBT-I). The second area is exploring biomarkers of cognitive impairment and neuropathology in individuals with obstructive sleep apnoea, a common sleep disorder associated with dementia risk.
Dr Laura Jobson	1) False Remembering in PTSD and Depression: Posttraumatic stress disorder (PTSD) and depression are characterised by distortions and deficits in autobiographical memory. While substantial research has investigated memory disruptions in these disorders, less research has focused on false memory (i.e., remembering things differently to the way in which they occurred) in PTSD and depression. There are two types of false memories; spontaneous false memories, which can occur without any external pressure, and suggestion-induced false memories, which are formed by suggestive pressure. Accumulating research has focused on spontaneous false memories in PTSD and depression. This research has demonstrated that PTSD and depression are associated with increased spontaneous false remembering when the information is emotional and related to the disorder. However, to date, research has not focused on suggestion-induced false memories in these disorders. The aim of the proposed research is examine suggestion-induced false memories in PTSD and depression. 2) Improving the Cultural Appropriateness of Psychological Treatments for PTSD Currently we have a very good understanding of the processes involved in the development, maintenance and treatment of posttraumatic stress disorder

	(PTSD). However, there is a significant limitation associated with this understanding, and thus our current PTSD treatment approaches. That is, they are based on research conducted with Western samples and virtually ignore culturally and linguistically diverse communities. Therefore, they are based on Western cultural norms, beliefs and values. This is problematic because PTSD rates have been found to be higher in migrant and refugee communities. Thus, the aim of this project is to further examine the influence of culture on the processes (e.g., memory, appraisals, emotion regulation, self) involved in PTSD in order to provide clinicians with clear direction regarding the assessment and tailoring of treatment for trauma survivors from culturally diverse communities.
Dr Kylie King	Testing the impact of the 'Breaking the Man Code' workshops – an upstream suicide prevention intervention for teenage boys. Men in Australia and globally account for three-quarters of deaths from suicide. It has been suggested that some traditional masculine norms are linked to heightened suicide risk, and that this may be because men who are self-reliant and avoid expressing emotions may resist seeking help for emotional problems. Tomorrow Man (tomorrowman.com.au) is a community-funded organisation that aims to challenge and transform these harmful masculinities with young males, with a view to ultimately reducing suicide risk, via their 'Breaking the Man Code' workshops with year 10, 11 and 12 male students. We are partnering with Tomorrow Man to evaluate these workshops via a cluster randomised control trial. An exciting opportunity exists for a PhD student to contribute to this evaluation starting in 2021. A dedicated scholarship is available as part of a larger NHMRC funded project about Suicide Prevention for Boys and Men. The successful candidate will be under the supervision of Dr Kylie King (and other supervisors to be determined with the candidate) and will be connected to a national, and international, network of researchers and PhD students specialising in suicide prevention for boys and men. *Clin Psych preferred*
Dr Rico Lee	Co-designing app-based assessment technologies for addiction Of the 165,000+ health apps currently in circulation only a handful are evidence-based, most of which demonstrate only small effects in utility. Using the BrainPark Assessment of Cognition (BrainPAC) app, this project will aim to improve the utility and scalability of a purpose-built assessment and monitoring tool for substance (eg, alcohol misuse) and behavioural addictions (eg, binge eating) by enhancing user uptake and engagement. It will use both qualitative and quantitative research methods, and involve engaging with consumers of health technologies in clinical (eg, alcohol rehabilitation) and community settings (eg, telephone counselling, primary healthcare), as well as relevant industry partners.
Dr Yen Ying Lim	The pathogenesis of Alzheimer's disease begins many years prior to diagnosis. Multiple large prospective studies now show that the accumulation of amyloid and tau begins many decades before clinical symptoms. To understand the genesis of Alzheimer's disease, I lead the Healthy Brain Project (healthybrainproject.org.au) which aims to study a large group of middle-aged Australians (n=10,000; aged 40-70 years) with a family history of dementia to determine the contribution of non-modifiable (genes, sex) and modifiable midlife factors (e.g., mood, vascular risk, sleep, diet, social engagement, cognitive activity) to cognitive decline and future risk of Alzheimer's disease.

	Potential Projects include: 1. Development and validation of digital biomarkers for the assessment of cognitive function remotely (via web or smartphone), including experiments to understand factors that can influence participant engagement and retention 2. Role of genetic risk factors on cognitive decline, brain volume loss and risk of Alzheimer's disease 3. How does physical activity and the brain derived neurotrophic factor interact to influence cognitive function and brain volume? 4. BetterBrains: a person-centred, multi-domain, lifestyle intervention to prevent cognitive decline in individuals with a family history of dementia 5. Blood + digital biomarkers for the early detection of Alzheimer's disease
Dr Adam McKay	Improving the management of agitation following traumatic brain injury (TBI) Adam's team is looking to support a new PhD research project improving the treatment and management of agitation post TBI. The specific topic is up for discussion but will most likely focus on nonpharmacological management approaches to agitation. This project is most suited to PhD students in the neuropsychology program who have an interest in brain injury rehabilitation. The PhD student will be linked into the Brain Injury Rehabilitation Theme within the Turner Institute at Monash University, as well as the Monash Epworth Rehabilitation Research Centre (MERRC) based at Epworth Hospital. This will include regular professional development opportunities, peer support, and supervision. *Clin Neuro preferred*
Prof Jennie Ponsford	Addressing sexuality following brain injury. This study will continue existing work investigating the nature of sexual difficulties experienced after brain injury and trialing educational and psychological interventions *Clin Neuro preferred*
Prof Shantha Rajaratnam	Understanding sleep and mental health during the COVID-19 pandemic and beyond
Dr Rebecca Segrave	Harnessing the Power of a Healthy Lifestyle to Overcome Addiction: this project will focus on the growing use of lifestyle based interventions (such as physical exercise, sleep, diet, social connection, and meditation) to treat addictions and their associated brain harms. It will explore the appetite and attitudes of people living with addictions to these treatment approaches, the behaviours change techniques that are most useful in supporting people to engage in them, and the evidence regarding which lifestyle targets are most effective to beat addictions. Within these broad areas of investigation the student will have scope to shape the specific research questions to their interests. The How and the What of Mindfulness Meditation: that regular mindfulness meditation can enhance many aspects of cognitive performance and mental health is now well established. What is less known is how to best support people to embed regular meditation a core part of their lifestyle (i.e. what behaviour change techniques are most useful), what kind of meditation practices are most acceptable and effective (e.g. apps vs in person tuition, dose, type), and how meditation impacts the cognitive domains that support decision making (e.g. risk taking, impulsivity, reward sensitivity). This project

	will delve into these questions and the student will have scope to shape the specific research questions to their interests. It will likely be conducted in collaboration with industry partner Smiling Mind or Headspace Inc.
Dr Tracey Sletten (with Prof Shantha Rajaratnam)	Digital health management of shift work Shift workers frequently experience misalignment between the circadian pacemaker and the timing of sleep and wake. This leads to sleep disruption and sleep loss, impaired alertness and performance, and adverse physical and health outcomes. Personalised interventions to minimise the deleterious effects of shift work are lacking. This research is developing a practical evidence-based digital technology that provides automated, personalised strategies to optimise sleep-wake behaviour and health during shift work schedules.
Dr Gershon Spitz	Brain network disruption following traumatic brain injury *Clin Neuro preferred*
A/Prof Rene Stolwyk	Optimising early detection and management of stroke-related cognitive impairment This multi-site project aims to validate a newly-developed cognitive screening tool specifically designed for stroke and investigate how implementation of this measure within clinical practice impacts on clinical management and patient outcomes. *Clin Neuro preferred*
Prof Julie Stout	1. Adaptation and testing of mindfulness and other therapies for progressive neurological disorders 2. Establishing clinical meaningfulness of cognitive decline in Huntington's disease via linking to performance-based functional measures and key life change events *Clin Neuro preferred* *3.* Gut microbiome changes in association with cognition in Huntington's disease *Clin Neuro preferred* 4. Phenomenology and treatment of depression in Huntington's disease-how does the experience of depression differ for HD compared to neurological healthy people 5. Overcoming developmental and social challenges of growing up in a family affected by HD-development of a program of parenting and/or adolescent-centred prevention to improve resilience and positive outcomes for young people *Clin Psych preferred* 6. Mental health interventions in relation to cognitive impairment in late-stage Huntington's disease
Prof Antonio Verdejo-Garcia	1. Novel mHealth interventions for emotional eating in binge eating disorder and food addiction This project will test novel ways to manage emotional eating in people with binge eating and food addiction problems. The project will test novel mHealth techniques using flexible SMART designs that enable development of personalised interventions. The mHealth tools will combine digital and immersive technologies and wearable sensors to identify drivers (i.e.

	antecedents) of emotional eating, and real-time interventions to prevent occurrence of binge eating bouts. 2. Boosting future-oriented thinking to manage impulsive behaviours in addictive disorders This project will examine the potential benefits of Episodic Future Thinking (EFT), namely, a cognitive intervention that stimulates future-oriented thinking to reduce impulsive behaviours, in addictive and eating disorders including substance and food addictions and binge eating. The project will specifically explore how EFT effects on impulsive behaviour and its potential clinical benefits can be improved through the use of immersive technologies and pharmacological cognitive enhancers. 3. Non-invasive brain stimulation to control food craving in obesity Non-invasive brain stimulation (NIBS) is a promising new avenue for the treatment of obesity. Food craving is a clinically significant therapeutic target in this context, as obese patients consistently report lingering cravings and urges as the cause of weight regain. Recent NIBS protocols have shown efficacy to reduce alcohol and drugs craving by inhibiting ventromedial prefrontal cortex (VMPFC) activity and connections between the VMPFC and the reward circuit. This project aims to test the safety/tolerability of NIBS of the VMPFC in patients with obesity, and to gather proof of concept evidence that this NIBS method can normalise frontostriatal connectivity and reduce craving.
Dr Joshua Wiley	SleepCare - A randomized, controlled trial of behavioral and bright light therapy for sleep and fatigue during chemotherapy for breast cancer. Working on this trial offers opportunities to conduct clinical interviews, deliver interventions, have an honorary appointment at local hospitals, and work with hospital-based psychologists and other health professionals as part of the trial. Depression and anxiety as well as general quality of life measures are available for investigation, as well as sleep and fatigue. Emotion Regulation Interventions - not a specific project but our group has worked on adapting and tailoring emotion regulation interventions in people with cancer and are partnering with engineering to examine creating digital versions including with digital avatars and social robots.
Dr Alex Wolkow (with Prof Sean P. A. Drummond)	The number of emergency personnel reporting sleep problems is high (due to shift work schedules, stress, etc.), so too is the proportion of personnel who report mental health conditions. In this longitudinal project, we are interested in examining how sleep disturbances could be related to the development of mental health outcomes in emergency service personnel.
A/Prof Marie Yap	We conduct research in parenting and child and youth mental health, branching across prevention (with community-based samples) into treatment/maintenance (with clinical samples) in mental disorders. I have 2-3 PhD projects commencing 2021 (see Supervisor Connect), but am happy to discuss other projects that fit broadly within parenting and child/youth mental health.

Check out Supervisor Connect and the School of Psychological Sciences website for more information about our researchers and their areas of interest

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