



BRAIN AND MIND CENTRE
Postgraduate Program

2017





“In the 21st century, to progress scientific enquiry, clinical practice or public policy, those interested in the brain and mind sciences need a solid background in the new evidence that informs this field. Studying at the Brain and Mind Centre provides a unique opportunity for active interaction with those scientific and clinical leaders who are at the forefront of modern science, technology and clinical services.”

Professor Ian Hickie AM

Co-Director, Health and Policy of the Brain and Mind Centre at the University of Sydney and Senior Principal Research Fellow of the NHMRC (2013–2017). Professor Hickie’s research, clinical and health services development work focuses on expansion of population-based mental health research and development of international mental health strategies. He is a Commissioner in the National Health Commission to oversee enhanced accountability for mental health reform in Australia.

Contents

Postgraduate program in Brain and Mind Sciences	2
Master of Brain and Mind Sciences – Coursework	3
Master of Medicine (Psychiatry) – Coursework	17
Research degrees	26
How to apply	28

POSTGRADUATE PROGRAM in BRAIN and MIND SCIENCES

Program overview

The Brain and Mind Centre is a centre for discovery, innovation and integrative research strategies, clinical delivery and translating research into improved treatment and disease prevention strategies.

The Postgraduate Program in Brain and Mind Sciences builds on existing undergraduate offerings of the University of Sydney with units of study that cut across boundaries between traditional subject areas.

The Postgraduate Program is currently open to applications for the following coursework options:

- Graduate Certificate in Brain and Mind Sciences
- Graduate Diploma in Brain and Mind Sciences
- Master of Brain and Mind Sciences
- Graduate Certificate in Medicine (Psychiatry)
- Graduate Diploma in Medicine (Psychiatry)
- Master of Medicine (Psychiatry)
- Master of Medicine (Advanced) (Psychiatry)

and the following research degrees:

- Master of Philosophy
- Doctor of Philosophy.

The courses provide focused education and training for the next generation of science, medical, nursing, psychiatry, psychology and allied health workforces to better meet the needs of those suffering from disorders of the brain and mind.

Who should apply?

- Psychologists, nurses, general practitioners and allied health staff for postgraduate education and professional development.
- Graduate scientists working in industry and those who wish to update their neuroscience skills and knowledge before undertaking a higher research degree in the area of brain and mind sciences.
- Psychiatry trainees, for whom this will form the Formal Education Course (FEC) component of training under the Royal Australian and New Zealand College of Psychiatrists (RANZCP) Fellowship requirements, can undertake the Master of Medicine (Psychiatry) programme, as can psychiatrists and other doctors working in the field of psychiatry (eg Career Medical Officers).

Why choose the University of Sydney?

The University of Sydney was founded in 1850 and was the first university in Australia. For over 150 years we have maintained a national and international reputation for academic excellence. We strive constantly for excellence in intellectual inquiry, academic freedom and integrity, and ethical practice in academic endeavours. At the heart of all of this is an exciting and stimulating student-centred learning and teaching environment. Our award courses are administered by Sydney Medical

School, respected as not only a provider of quality teaching, but also as a leader in research, with funding from state, national and international bodies. Covering 19 disciplines and with over 40 specialist research units, Sydney Medical School is conducting cutting-edge education and research in the full spectrum of health and medical knowledge, from the medical sciences through to clinical medicine, public health, health service delivery and medical education.

Master of Brain and Mind Sciences – Coursework

Overview

This postgraduate program strongly promotes the philosophy of interdisciplinary research that underpins the Brain and Mind Centre. Diseases of mental health are explored from both the basic sciences and clinical research rather than as disparate scientific disciplines.

The **core units** of the program give students a foundation in fundamental neuroscience and its translational and clinical applications. Critical appraisal of the biomedical literature is developed, as is the ability to use this to inform further research or clinical applications.

The **elective units** of the program approach disorders of the brain and mind from the perspective of clinical staging: how they emerge during development from early childhood, adolescence and into old age.

Other areas of focus at the Brain and Mind Centre and in the postgraduate program are genetic aetiology of brain and mind disorders, neuroimaging, practice of therapeutic strategies from pharmacology to cognitive behaviour therapy, and principles of neuropsychological assessment. Workshops in clinical leadership and in suicide prevention will give students an understanding of the broader provision of support in the mental health field.

Capstone units of study are designed to allow students to delve into an area of brain and mind sciences and produce an original work of scholarship. Those students accepted into the Research Activity unit will have an opportunity to work with a research group at the Brain and Mind Centre, culminating in a mini thesis.

The postgraduate program in brain and mind sciences brings together lecturers from the cutting edge of their respective fields. Students will emerge with an understanding of the very latest in interdisciplinary research and the skills to use this in professional settings in the laboratory, clinic or allied mental health care fields.

Coursework options

Graduate Certificate in Brain and Mind Sciences
(24 credit points)

Students must complete 2 core subjects BMRI5002 and BMRI5004 and 2 electives. Students can complete requirements in a minimum of 1 semester and a maximum of 2 years from initial enrollment.

Graduate Diploma in Brain and Mind Sciences
(36 credit points)

Students must complete 2 core subjects BMRI5002 and BMRI5004 and 4 electives. Students can complete requirements in a minimum of 1 year and a maximum of 4 years from initial enrollment.

Master of Brain and Mind Sciences
(48 credit points)

Students must complete 3 core subjects BMRI5002, BMRI5004 and BMRI5020 and 5 electives, including at least 1 capstone unit of study. Students can complete requirements in a minimum of 1 year and a maximum of 6 years from initial enrolment.

Course outcomes

Graduates of the Master of Brain and Mind Sciences will be able to demonstrate:

- mastery of the knowledge, principles and methods of the brain and mind sciences
- training in the skills required to apply the basic knowledge, principles and methods to problems of professional practice (research and/or clinical)
- acquisition of specific skills in the use of relevant procedures, technologies and techniques in relation to research investigation, assessment, diagnosis and management of brain and mind disorders
- development of the skills and attitudes to exhibit initiative and self-reliance in critically evaluating and synthesizing ideas & information related to the units
- development of the skills and attitudes to work effectively and collaboratively within teams from different disciplinary, professional and cultural backgrounds.

Entry requirements

For Master of Brain and Mind Sciences and embedded degrees:

Bachelor degree in a relevant discipline. Examples of relevant degrees are Bachelor of Science, Medical Science, Nursing, Medicine, Psychology, Health Science and Pharmacy.

Students may be asked to attend an interview to discuss suitability for entry into the course. This will be determined after applications close.

Student pathway

The options of enrolment for a full-time Masters candidate are laid out below.

Semester 1, 2017		Page
BMRI5002	Fundamental Neuroscience	5
BMRI5004	Translational and Clinical Neuroscience	6
BMRI5020	Research Inquiry	7
Electives – choose from the following units of study		
BMRI5010	Brain and Mind Disorders (Child/Youth)	8
BMRI5013	Neuropsychopharmacology	9
Semester 2, 2017		Page
BMRI5001	History, Philosophy & Ethics of Brain & Mind Sciences (<i>capstone</i>)	10
BMRI5006	Cognitive Behaviour Therapy	11
BMRI5007	Neuropsychology	12
BMRI5012	Brain Ageing	13
BMRI5017	Genetics of Brain and Mind Disorders (<i>capstone</i>)	14
BMRI5023/5024	Research Activity (<i>capstone</i>)	15
BMRI5027	Leadership and Policy in Mental Health (<i>capstone</i>)	16

- Part-time students should undertake core BMRI5002 and BMRI5004 before attempting electives.
- You can enrol as a non-award student for any of the units of study listed. You can count the credit obtained from the successful completion of these units of study towards one of our university degrees, as long as it is claimed within two years of completing the unit of study and you have approval from your degree coordinator.
- For some units, there is a short course or continuing medical education option that does not require the formal assessment process. Students do not enrol as university students in the degree pathway, and these units can not be claimed for degree progression. However, they may be claimed for Continuing Medical Education. Reduced fees apply. For further details, contact medicine.postgradbmri@sydney.edu.au

Fundamental Neuroscience

BMRI5002 Semester 1 CORE

This core unit of study will introduce the main concepts of neurobiology starting with neural cell structure and physiology, neurodevelopment and synaptic plasticity. The modularity of the brain and connective pathways will then be examined with a focus on the functional anatomy of sensory processing, the basal ganglia and the limbic

system. Immunology and neuropathology will also be studied with insights into how genetics and interaction with glial cells underlie these processes. Examples will be given of how brain disorders emerge from disruption to these fundamental processes.

Week	Proposed topic / presenter
1	Overview on neuroscience research – <i>Prof Max Bennett</i> Neuroanatomical pathways – <i>Dr Eryn Werry</i>
2	Neural development and axonal guidance <i>Dr Claire Goldsbury</i>
3	Neurotransmission I – <i>Dr Mic Cavazzini</i>
4	Neurotransmission II – <i>Dr Mic Cavazzini</i>
5	Synaptic plasticity and learning – <i>Dr Mic Cavazzini</i>
6	Sensory processing – <i>Dr Daniel Brown</i>
7	The basal ganglia in habit behaviour – <i>Prof Bernard Balleine</i>
8	The limbic system and emotions <i>Dr Ian Johnston, School of Psychology</i>
9	Sensory perception – <i>Dr Daniel Brown</i>
10	Neuroimmunology and auto-immune disorders <i>Dr Emily Mathey,</i>
11	Glia – neuronal interactions and pathology <i>Prof Manuel Graeber</i>
12	Cell death and neurotoxicity <i>Dr Susanna Park</i>
13	Genetic epidemiology and expression of neuropsychiatric disorders – <i>A/Prof Marina Kennerson</i>

Credit points: 6

Teacher/Coordinator: Dr Daniel Brown

Session: Semester 1

Classes:

1x 2-hr lecture/week, 3 tutorials

Assumed knowledge:

Cell biology up to 1st year level

Assessment: test (30%),
extended response questions (30%),
short answer questions (40%)

Campus: Mallett Street

Delivery Mode: Normal (lecture/lab/
tutorial) Evening

Learning outcomes

At the conclusion of this unit of study,
students should be able to:

- Explain the basis of neuronal excitability and synaptic transmission.
- Describe learning and memory from a behavioural and cellular perspective.
- Describe the main stages of neural development and axonal wiring.
- Evaluate how network behaviour contributes to function sensory processing, the basal ganglia and the limbic system.
- Discuss major concepts in genomics and the genetic epidemiology of brain and mind disorders.
- Interpret neuropathological microimages and the role of glia in neuronal development and support.

Translational and Clinical Neuroscience

BMRI5004 Semester 1 CORE

This unit of study introduces the principal disorders of mental health and current methods for diagnosing and understanding them. Disorders of development, mood, personality and cognitive decline will be introduced from the perspective of the clinical staging model. This model attempts to identify the risks of such disorders emerging and progressing in individuals when all biopsychosocial variables are considered. In this way,

windows for therapeutic intervention that would prevent or delay progression from earlier to later stages of a disorder can be defined. The unit will also describe fundamental principles of clinicopathology and some of the latest understanding of early diagnostic biomarkers for disease and novel applications of neuroimaging and spectroscopy will be discussed in this context.

Week	Proposed topic / presenter
1	Advantages-disadvantages of DSM / ICD & development of clinical staging models for brain and mind disorders <i>Dr Daniel Hermens, Youth Mental Health Program</i>
2	Q & A session – Clinical staging model vs DSM / ICD <i>Moderator: Dr Daniel Hermens</i>
3	Brain and mind disorders emerging in childhood and youth <i>TBA</i>
4	Emerging disorders in adulthood <i>Moran Gilat, Parkinson's Disease Research Group</i>
5	Clinical assessments of brain and mind disorders & introduction to cognitive therapies <i>Dr Loren Mowszowski, Healthy Brain Ageing</i>
6	Introduction to therapeutic interventions <i>A/Prof Loyola McLean, Brain and Mind Centre Prof Alan Rosen, NSW Deputy Mental Health Commissioner</i>
7	Suicide Prevention <i>Adj Assoc Prof John Mendoza, Connetcita Consulting</i>
8	Transcranial magnetic stimulation: clinical applications - <i>TBA</i>
9	Diffusion tensor imaging & Functional MRI <i>Dr Shantel Duffy, Healthy Brain Ageing</i>
10	MRI and Spectroscopy: biomarkers of neurodegenerative disorders <i>Dr Kathryn Broadhouse, Regenerative Neuroscience Group</i>
11	Electrophysiological biomarkers of early episode psychosis <i>Dr Daniel Hermens</i>
12	Q & A session – Imaging biomarkers – why do we need them? <i>Moderator: Dr Daniel Hermens</i>
13	A translational model of Neuro-regeneration <i>Dr Thomas Duncan and Dr Amit Lampit, Regenerative Neuroscience Group</i>

Credit points: 6 **Teacher/Coordinator:** Dr Daniel Hermens

Session: Semester 1

Classes: 1x 2-hr lecture/week

Assessment: essay (30%), case study analysis (30%), literature review (40%)

Campus: Mallett Street **Delivery Mode:** Normal (lecture/lab/tutorial) Evening

Learning outcomes

At the conclusion of this unit of study students should be able to:

- Assess the relevance and importance of developing clinical staging models for the diagnosis and management of a variety of brain and mind disorders.
- Compare and contrast a range of risk factors during a spectrum covering childhood, adolescence and old age that manifest in clinical symptoms of various brain and mind disorders.
- Evaluate a case study by interpreting various assessment techniques and understand the range of potential interventions suitable to various clinical stages.
- Evaluate and appraise neuroimaging techniques, and how these can be used to identify preclinical markers of brain and mind disorders.

Research Inquiry

BMRI5020 Semester 1 CORE

Doctors and researchers depend on the latest scientific literature published week by week in countless different journals, but not every study can be trusted. Scientific studies are fraught with complications that can threaten their reliability, or the extent to which their results can be applied very widely. This unit will help students develop the skills necessary to critically appraise the research literature and identify sources of bias and confounding. Students will learn how cross-sectional studies, case-control studies, cohort studies and clinical trials are more or less vulnerable to these problems.

Similarly, students will look at the basic design of laboratory research and the different types of questions that can be asked from studies on humans, rats or brain tissue.

All classes will be based on published examples of research literature and students will learn how to navigate different methods and data types.

This unit will give students the confidence to read widely across the mental health field, and judge which findings can be relied upon to inform future research or medical practice.

Credit points: 6 **Teacher/Coordinator:** Dr Eryn Werry

Session: Semester 1 **Classes:** 1 x 2-hr lecture/week, 3 tutorials

Assumed knowledge: some basic statistical concepts essential, with 1st year university statistics desirable

Assessment: journal club (10%), short answer questions (20%), extended response questions (30%), 2hr exam (40%) **Campus:** Mallett Street **Delivery Mode:** Normal (lecture/tutorial) Evening

Week	Proposed topic / presenter
1	Levels of evidence <i>Assoc Prof Loyola McLean, Brain and Mind Centre</i>
2	Introductory biostatistics <i>Dr Tim Schlub, School of Public Health</i>
3	Qualitative research <i>Assoc Prof Loyola McLean, Brain and Mind Centre</i>
4	Case control studies <i>Dr Yu Sun Bin, Northern Clinical School</i>
5	Cross-sectional surveys <i>Dr Isabella Choi, Brain and Mind Centre</i>
6	Cohort studies <i>Dr Brian O'Toole, Vietnam Veterans Family Health Study</i>
7	Clinical and Controlled trials <i>Prof. Val Gelski, NHMRC Clinical Trials Centre</i>
8	Systematic reviews and meta-analysis <i>Dr. Amit Lampit, Regenerative Neuroscience Group</i>
9	Ethics – Margaret Faedo and Greg Smith, Research Integrity and Ethics Administration
10	Lab publications: Animal behaviour <i>Dr Laura Bradfield, UNSW</i>
11	Lab publications: Human neurophysiology <i>Dr Richard Morris, UNSW</i>
12	Lab publications: Localisation and genetic manipulation <i>Dr Eryn Werry, Drug Discovery Research Unit</i>
13	Lab publications: Electrophysiology & pharmacology <i>Dr Jane Carland, Discipline of Pharmacology</i>

Learning outcomes

- Evaluate the merit of different clinical study designs in the 'levels of evidence' hierarchy and understand the differences and respective merits and applications of qualitative versus quantitative methodologies.
- Understand the ethical context and requirements of research.
- Identify sources of selection bias and information bias in a research study and the potential effects on data and understand the concepts of trustworthiness of data in qualitative research.
- Assess the statistical tests used in a given study, the power of the study and factors that influence this.
- Ascertain confounding variables in research & ways to address them.
- Recognise different levels of laboratory research and navigate papers presenting a range of complex data and experiments.
- Critically appraise and compare publications from clinical and basic research.

Brain and Mind Disorders (Child/Youth)

BMRI5010 Semester 1 ELECTIVE

This unit of study will address key neurobiological, psychological and environmental contributions and their interactions on child and adolescent brain development from a clinical perspective. Students will be introduced to neurodevelopmental disorders affecting infants, children and youth, including intellectual disability, autism spectrum disorders, attention deficit hyperactivity disorder, and a range of emergent mental disorders such as anxiety disorders, mood disorders,

psychotic disorders, sleep disorders and somatic symptom disorders. The aetiology, phenomenology and treatment of these mental disorders are considered in the context of developmental continuities and brain maturational processes throughout infancy, childhood and adolescence. Finally, students will understand the principles of pharmacological, psychological and family management of these disorders, including models of service delivery in child and youth mental health.

Credit points: 6 Teacher/Coordinator: Dr Raphael Chan Session: Semester 1 Classes: 1 x 2-hr lecture/week

Assessment: short answer questions (30%) extended response questions (30%), essay (40%) Campus: Mallett Street Delivery Mode: Normal (lecture/lab/tutorial) Evening

	Proposed topic / presenter
1	Introduction & Mental health assessment of children and youth <i>Dr Raphael Chan, Brain and Mind Centre</i>
2	Principles of attachment in infancy and childhood <i>Dr Margaret Goldfinch, Senior Clinical Psychologist</i>
3	Language and cognitive development in childhood Dr Antoinette Hodge & Rebecca Sutherland, Children's Hosp Westmead
4	Brain development in adolescence - Prof Peter McGeorge, St Vincent's Hospital Imaging the adolescent brain - Prof Rhoshel Lenroot, UNSW
5	Intellectual disability and autism spectrum disorder Prof Stewart Einfeld, Brain and Mind Centre
6	Attention-deficit / hyperactivity disorder (ADHD) Dr Raphael Chan Disruptive behaviour disorders Dr Daniel Hermens, Braina nd Mind Centre
7	Anxiety disorders in children and youth Dr Lauren McLellan, Macquarie University
8	Mood disorders in children and youth - Dr Raphael Chan
9	Psychotic disorders in children and youth Dr Anthony Harris, Sydney Medical School
10	Psychosomatic disorders in children and youth Sleep disorders in children and youth Prof Nick Glozier, Sydney Medical School
11	Mental disorders in children and youth: Principles of treatment Dr Raphael Chan
12	Introduction to family therapy Dr Glenn Larner, Northern Sydney Local Health District
13	Service delivery for youth mental health Dr Blake Hamilton, Headspace Camperdown

Learning outcomes

At the conclusion of this unit of study students should be able to:

- Characterise normal child development from infancy to adolescence.
- Assess the influence of genetics on child and youth development and learning.
- Evaluate how environmental and societal factors influence child and youth development.
- Compare and contrast common developmental, learning and cognitive disorders.
- Assess the effectiveness of different therapeutic and management options for children and youth with brain and mind disorders.



Neuropsychopharmacology

BMRI5013 Semester 1 ELECTIVE

This elective unit will focus on neuropsychopharmacology as a tool for characterising brain pathways and as a treatment for brain disorders. Students will be introduced to basic principles of pharmacology governing drug binding and metabolism that underlie the rationale for drug design. Links between brain circuitry and phenomenology of mood disorders, psychosis and addiction will be examined to provide

a rationale for chosen drug targets. Students will also examine the relationship between dosage, specificity and negative side effects of such drugs and how to evaluate costs and benefits of drug treatment in model scenarios. There will be opportunity to examine current directions in neuropharmacology research, the role of the pharmaceutical industry and potential new pathways for future drug design.

Credit points: 6 Teacher/Coordinator: Dr Eryn Werry Session: Semester 1

Classes: 9am–5pm on a weekday in weeks 3, 6 and 11 Assessment: Online test (30%), report (30%), presentation (40%)

Campus: Mallett Street Delivery Mode: Block Mode

Learning outcomes

At the conclusion of this unit of study, students should be able to:

- Understand the biological substrates underlying human central nervous system (CNS) – mediated function and behaviour.
- Apply principles of pharmacokinetic and pharmacodynamics to commonly used agents targeting the central nervous system.
- Explain the mechanisms of action of drugs used to modulate neurological function and behaviour, including drugs used to treat neuroinflammation, movement disorders, anxiety, depression, schizophrenia, dementia and epilepsy.
- Construct an evidence-based rationale for the use of pharmaceutical drugs to treat neuropsychological conditions based on up-to-date understanding of the underlying circuitary and phenomenology.
- Understand the neurobiology of addiction, mechanism of common drugs of abuse and describe pharmacological interventions to combat addiction.

Workshop	Proposed topic / presenter
1	Basic principles of pharmacology Neurotransmitter systems <i>A/Prof Jonathon Arnold,</i> Drug absorption and metabolism Dosage and non-specific targets Principles of drug discovery <i>Dr Eryn Werry</i>
2	Modelling behaviour – cellular and animal laboratory and their use <i>Dr Wendy Imlach</i> Lab Tour Anxiety and Dementia <i>Dr Briony Winters</i>
3	Drugs of abuse – mechanisms Neuroadaptation and addiction <i>Dr Kirsten Morely</i> Neuropharmacology of Overdose Prof Paul Pilowsky Anti-glioblastoma data analysis <i>Dr Eryn Werry</i>



History, Philosophy and Ethics in Brain and Mind Sciences BMRI5001 Semester 2 CAPSTONE ELECTIVE

This unit of study uses a neuroethics lens to examine the impacts of modern neurotechnology on our understanding of brain function and its relation to concepts of mind. Neuroethics is sub-field of bioethics that is concerned with the ethical, legal and social impact of the neurosciences. Throughout this unit, students will critically assess current applications of neurotechnology and engage with the issues that arise as these neurotechnologies influence how we conduct research, treat clinical conditions, make individual and collective decisions, and live together as a

society. The unit is divided into four three-week modules that progressively deepen the analysis of the impact of modern neurotechnology on the brain and mind sciences. Module 1:- Historical overview - the mind, consciousness and the self. Module 2: Introduction - modern neurotechnologies and the general ethical challenges they pose. Module 3: Analysis of specific examples of how modern neurotechnologies have changed clinical diagnosis and treatment Module 4: Analysis of specific examples of how modern neurotechnologies have changed legal and social practices.

Week	Proposed topic / presenter
1	Introduction to neuroethics: An overview of the definitions, goals and underlying principles of neuroethics scholarship and practice - <i>Dr Cynthia Forlini</i>
2	History I: Aristotle, the soul, Ventricular doctrine - <i>Prof Max Bennett</i> <i>Discussion: "Neurorealism" - what does neurotechnology actually tell us about our brain function? - Dr Cynthia Forlini</i>
3	<i>History II: The mind, consciousness and the cortex - Prof Max Bennett</i> <i>Discussion: "Neuroessentialism"- does our brain function define who we are? - Dr Cynthia Forlini</i>
4	History III: Animal electricity, the Neuron Doctrine and the emergence of clinicopathology - <i>Prof Max Bennett</i> <i>Discussion: "Neuropolicy"- using knowledge about brain function to justify health and social policy - Dr Cynthia Forlini</i>
5	The "neuroscience of ethics": What has neurotechnology shown us about the neural basis of behavior, personality, and consciousness? - <i>Dr Cynthia Forlini</i>
6	Discussion: Round table discussion of open peer commentaries & preparation of position papers - <i>Dr Cynthia Forlini</i>
7	Intervening in the self: Do clinical interventions in the brain or mind change our sense of self and identity? – <i>Prof Ian Kerridge</i>
8	Illness of the mind?: Ethical implications of the way we classify mental ill health - <i>Dr Jennifer Smith-Merry</i>
9	Ontology of the body: Ethical issues in settling disputes between the brain and mind - <i>Dr Chris Ryan</i>
10	Disorders of consciousness and brain death - <i>Prof Max Bennett & Dr Cynthia Forlini</i>
11	<i>"Better than well": Ethical and social issues of improving the cognitive performance of healthy individuals - Dr Cynthia Forlini</i>
12	<i>Neurolaw: Does neuroscience have a place in the courtroom? - Dr Sascha Callaghan</i>
13	<i>Public understanding of neuroscience - Dr Cynthia Forlini</i>

Credit points: 6 **Teacher/Coordinator:**

Dr Cynthia Forlini , Prof Max Bennett

Session: Semester 2

Classes: 1x 2-hr lecture/week

Assessment: class discussion (5%), open peer commentary (10%), Abstract (5%), position paper I (40%), position paper II (40%) **Campus:** Mallett Street

Delivery Mode:

Normal (lecture/lab/tutorial) Evening

Learning outcomes

At the conclusion of this unit of study, students should be able to:

- Discuss brain and mind function within an historical, philosophical and ethical context.
- Explain the impacts of key neurotechnologies of the last century on concepts of brain and mind function.
- Critique claims regarding the benefits and harms of neurotechnology for understanding brain and mind function
- Determine ethical issues that arise from the use of neurotechnology in research and clinical contexts.
- Analyze broader implications of neurotechnology in social and legal contexts.
- Debate appropriate uses of neurotechnology in clinical, social and legal contexts.

Cognitive Behaviour Therapy

BMRI5006 Semester 2 ELECTIVE

Cognitive Behaviour Therapy (CBT) is an evidence-based psychotherapy for a range of psychological disorders, with strong foundations in cognitive science and now increasingly in neuroscience. This unit provides a solid foundation in the theoretical and clinical underpinnings of the therapy, with a specific focus on the

neuroscience of CBT as applied to various conditions. It demonstrates techniques of CBT, including case assessment, formulation, and therapy components. Students will develop a neurobiological understanding of CBT interventions and examine practice through case examination and group exercises.

Credit points: 6 **Teacher/Coordinator:** Assoc Prof Adam Guastella **Session:** Semester 2 **Classes:** 12pm-2pm in week 2, 9am-5pm on a weekday in weeks 4, 8 and 11 **Assessment:** online test (20%), case study analysis (40%), extended response questions (40%)
Campus: Mallett Street **Delivery Mode:** Block Mode

Workshop	Proposed topic / presenter
Introduction (2 hours)	Overview of themes and reading materials to be covered by students in preparation for Workshop 1 <i>Assoc Prof Adam Guastella, Brain and Mind Centre</i>
1 Full day	Novel cognitive approaches to the assessment and treatment of fear circuitry disorders: the neurobiological underpinnings of CBT intervention; causal and maintenance processes according to dominant CBT models of anxiety; identifying critical targets for change in therapy for anxiety <i>Assoc Prof Adam Guastella, Brain and Mind Centre</i>
2 Full day	CBT in treatment of mood disorders: depression in young adults; active case management <i>Assoc Prof Adam Guastella</i>
3 Full day	CBT, family therapy, and exploring the neuroscience of externalising problems: theoretical models and pathways for externalising disorders; assessment of subjects and treatment formulation; evidence-based practice of externalising problems <i>Dr Tracy Rhodes, Clinical Psychologist, Brighter Pathways</i>

Learning outcomes

At the conclusion of this unit of study students should be able to:

- Explain the theoretical and neurobiological underpinnings of CBT.
- Assess recent advances in the understanding CBT that may improve methods of assessment and intervention.
- Examine case scenarios of anxiety, depression and externalising problems and identify critical targets for change in therapy.
- Discuss the process of assessment and case formulation and evaluate best practice CBT skills.



Neuropsychology

BMRI5007 Semester 2 ELECTIVE

This unit of study will enable students to understand the basic principles of brain behaviour relationships that underpin assessment of brain disorders across the age span. A wide range of neuropsychological syndromes and neuropsychiatric and neurological disorders will be examined. The unit of study will outline procedures for

integrating medical, psychological and social information into neuropsychological assessment through case based learning. At the end of the unit of study, students will have an awareness of the 'state of the art' in neuropsychological intervention/rehabilitation strategies for people with acquired brain impairment.

Week	Proposed topic / presenter
1	Introduction to neuropsychology <i>Dr Haley La Monica, Healthy Brain Ageing Program, Brain and Mind Centre</i>
2	Neuropsychological assessment <i>Dr Sara Lucas, Neuropsychologist</i>
3	Behavioural neurology and apraxia <i>Dr Simon Lewis, Parkinson's Research Clinic, Brain and Mind Centre</i>
4	Neuropsychological syndromes: Agnosia <i>TBA</i>
5	Neuropsychological profiles in stroke and brain tumours <i>Dr Zoe Thayer, RPAH</i>
6	Neuropsychological profiles in schizophrenia and affective disorders – <i>Mr Rico (Sze') Lee Youth Mental Health Group, Brain and Mind Centre</i>
7	Paediatric neuropsychology <i>Dr Antoinette Hodge, Children's Hospital Westmead</i>
8	Neuropsychological profiles associated with multiple sclerosis <i>Dr Wendy Longley, Sydney Medical School</i>
9	Mild cognitive impairment, Alzheimer's disease and vascular dementia <i>A/Prof Sharon Naismith, Brain and Mind Centre</i>
10	Parkinsons disease and fronto-temporal dementia <i>Dr Zoe Terpening</i>
11	Cognitive rehabilitation <i>Dr Antoinette Hodge, Children's Hospital Westmead</i>
12	Student case presentations <i>A/Prof Sharon Naismith</i>
13	Student case presentations <i>A/Prof Sharon Naismith</i>

Credit points: 6 **Teacher/Coordinator:** Prof Sharon Naismith **Session:** Semester 2
Classes: 1x 2-hr lecture/week **Assessment:** essay (40%), clinic visit and case presentation (15%), client report (45%) **Campus:** Mallett Street **Delivery Mode:** Normal (lecture/lab/tutorial) Evening

Learning outcomes

At the conclusion of this unit of study students should:

- Analyse the theoretical frameworks underpinning the study of brain behaviour relationships.
- Understand and differentiate core neuropsychological syndromes arising from brain disorders.
- Apply knowledge and skills in the interpretation of neuropsychological tests and questionnaires used in the assessment of brain disorders.
- Examine the pathological changes that occur in brain disorders across the age spectrum.
- Compare and contrast social, psychological, medical, neurological and rehabilitation factors associated with neuropsychological syndromes.

Brain Ageing

BMRI5012 Semester 2 ELECTIVE

This unit of study provides an introduction to two important aspects of brain and mind ageing science – neurodegenerative disorders and opportunities for neuroplasticity and human flourishing. Students will learn about the clinical presentation and pathophysiology of neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, vascular dementia and frontotemporal dementia.

Psychogeriatrics and late-life depression will also

be covered, and counterbalanced with new insights about what determines successful ageing and how we can use lifestyle interventions to keep people's brains and minds fit and well throughout late life. This unit will use case studies to reinforce learning, focusing on common neuropsychological assessment methods and research methods. Students will also be introduced to the social and ethical aspects of brain and mind ageing.

Week	Proposed topic / presenter
1	Mild cognitive impairment, dementia and Alzheimer's disease – <i>Dr Haley LaMonica, Healthy Brain Ageing</i>
2	Current directions in the basic science of Alzheimer's disease – <i>Dr Claire Goldsbury, Alzheimer's Disease Cell Biology Laboratory</i>
3	Parkinson's disease and Lewy body dementia <i>A/Prof Simon Lewis, Parkinson's Research Clinic</i>
4	Vascular dementia <i>Dr Louisa Norrie, Consultant Psychiatrist</i>
5	Frontotemporal dementia <i>A/Prof Olivier Piguet, Neuroscience Research Australia</i>
6	Successful ageing: what have we learnt from Aussie centenarians? – <i>Dr Charlene Levitan, UNSW</i>
7	Brain imaging across neurodegenerative diseases <i>Dr Kathryn Broadhouse, Regenerative Neuroscience Group</i>
8	Late-life depression and psychogeriatrics <i>Dr Louisa Norrie, Consultant Psychiatrist</i>
9	Case discussion conference <i>Dr Haley LaMonica, Dr Loren Mowszowski and A/Prof Simon Lewis</i>
10	Using neuroplasticity: computerised cognitive training <i>Dr Amit Lampit, Regenerative Neuroscience Group</i>
11	Guardianship, testamentary capacity, informed consent <i>Ms Rachel Chua</i>
12	Neurodegeneration in a dish? Power and pitfalls of stem cell models of brain disease <i>Dr Thomas Duncan, Regenerative Neuroscience Group</i>
13	Prevention and lifestyle modifications for healthy brain ageing – <i>A/Prof Michael Valenzuela, Regenerative Neuroscience Group</i>

Credit points: 6

Teacher/Coordinator:

Assoc Prof Michael Valeunzuela **Session:**

Semester 2

Classes: 1 x 2-hr lecture/week **Assessment:** extended response questions (40%), case study analysis (40%), group presentation (20%) **Campus:** Mallett Street

Delivery Mode: Normal (lecture/ lab/tutorial) Evening

Learning outcomes

At the conclusion of this unit of study students should be able to:

- Analyse the contribution of environment and pathophysiology to various neurodegenerative disorders.
- Compare assessment and imaging techniques used in differentiating diagnoses.
- Explain how risk factors for brain and mind disorders are related to ageing and psychiatric symptoms such as late-life depression.
- Describe some of the determinants of successful ageing.
- Understand capacity in a medico-legal sense and discuss issues associated with informed consent.
- Critically evaluate strategies for healthy brain ageing.

Genetics of Brain and Mind Disorders

BMRI5017 Semester 2 CAPSTONE ELECTIVE

This unit of study provides a comprehensive introduction to the research methods involved in identification and characterisation of genetic variants underlying neuropsychiatric disorders. The first part of the unit will focus on the statistical methods to quantify the contribution of genetic factors to disorders in the population. Heredity and epidemiology of neuropsychiatric and neurodevelopmental disorders will be discussed. The course will then discuss concepts of genetic architecture and linkage and students will learn to use bioinformatics tools.

Methods used to examine and control gene expression in animal models will also be explored. This is a capstone unit of study that will require students to develop over the semester an original piece of scholarship on one of the issues raised by the lecturers. Through the course, students use bioinformatics tools to study gene regions inherited with a disorder of interest and validate candidate gene. The research report will be carried out in two parts over the semester and will require significant research and critique of the relevant literature.

Credit points: 6 Teacher/Coordinator: A/Prof Marina Kennerson Session: Semester 2

Classes: 3pm-5pm WSaturday in Week 2, 9am-5pm Wednesday in Weeks 4, 9 and 11 Assessment: lab report (40%), Journal Article (60%) Campus: Mallett Street Delivery Mode: Block Mode

Workshop	Proposed topic / presenter
Introduction (2 hours)	Introduction to gene mapping causal and susceptibility loci in families and populations <i>A/Prof Marina Kennerson, ANZAC Research Institute</i>
1 Full day	Quantification of genetic epidemiology <i>Dr Jake Gratten & Dr Anna Vinkhuyzen, Queensland Brain Institute, University of Queensland</i>
2 Full day	Understanding linkage analysis and next generation sequencing (NGS) tools to map genes for Mendelian diseases <i>A/Prof Marina Kennerson, ANZAC Research Institute</i>
3 Full day	Bioinformatics to explore the genome and DNA variants <i>Dr Megan Brewer, Postdoctoral Research Fellow, ANZAC Research Institute</i> Animal models in studying genetic functions <i>Dr Angela Laird, Developmental Biology Laboratory</i>

Learning outcomes

At the conclusion of this unit of study students should be able to:

- Interpret measures for genetic epidemiology in brain and mind disorders.
- Demonstrate a practical understanding of genome-wide association studies (GWAS) & their limitations.
- Explain how changes to genetic architecture contribute to disordered gene function & expression.
- Use bioinformatics resources to apply what is known about a gene's expression pattern, protein outcomes and evolutionary history.
- Assess the central role of animal models in the understanding of genetic contribution to disease phenotypes.

Foundations of Leadership and Policy in Mental Health BMRI5027 Semester 2 CAPSTONE ELECTIVE

This capstone unit examines the key constructs of leadership, leadership development and change management with specific reference to mental health reform in Australia. Students will gain an understanding of leadership, leadership development, their own leadership attributes and developmental needs. Students will also gain an insight into the development of strategy, organizational level policy and governance for achieving

change. These elements will provide the foundations for self-development as a leader and the development of service level change/reform initiatives. Under supervision, students are assessed on the application of theoretical constructs and models, and will produce a significant scholarly project of change management and implementation in their own work setting or context.

Credit points: 6 **Teacher/Coordinator:** Adj Assoc Prof John Mendoza **Session:** Semester 2

Classes: 9am–5pm Friday and 9am–12.30pm Saturday in weeks 2 and 7, 9am–5pm Friday in week 13

Assessment: leadership assessment and self development plan (30%), scenario analysis (20%), change management and implementation plan (35%), participation (15%) **Campus:** Mallett Street **Delivery Mode:** Block Mode

Workshop	Proposed topic / presenter
1 Full day Friday + half day Saturday	<p>Introduction to the unit of study, ethics, course materials, assessments. Topics covered include: leadership, leadership development and change management; why leadership matters to mental health reform in Australia; introduction to leadership; the core of leadership – personal effectiveness, communication and influence.</p> <p><i>Facilitated by Adj Assoc Professor John Mendoza</i></p>
2 Full day Friday + half day Saturday	<p>Major topics include: leadership and strategy; leadership and people; leadership and organisational culture; and leadership and change management. Suicide prevention as a case study in leadership in policy.</p> <p><i>Facilitated by Adj Assoc Professor John Mendoza</i></p>
3 Friday	<p>Application of leadership theory and practice to leading change in mental health. Student presentations. Summary and close of unit.</p> <p><i>Facilitated by Adj Assoc Professor John Mendoza</i></p>

The workshops are part didactic, part interactive. The didactic sessions are short with opportunities to apply learning in workplaces and other contexts.

Learning outcomes

At the conclusion of this unit of study students should be able to:

- Compare and contrast different models of leadership and change management strategies.
- Evaluate their own leadership strengths and learning priorities.
- Assess how policy and strategy are critical to the implementation of leadership vision.
- Evaluate effective personal influence strategies.
- Develop strategies to improve team performance, including recognising staff strengths and improving staff engagement.
- Analyse key strategies for successful organisational change initiatives.
- Apply leadership theory and practice and a change management framework to develop reform within a service setting.

Research Activity

BMRI5023/24 Semester 2 CAPSTONE ELECTIVE

This unit of study requires students to develop over the semester an original piece of research and provides a capstone experience for those wishing to go on to further postgraduate research. This practical project is based in a research group at the Brain and Mind Centre which deal variously in areas of clinical, epidemiological and fundamental neuroscience research. The 12 credit points combined of BMRI5023/BMRI5024 carry the expectation of around 3 days per week availability towards the given research project. Students will learn a variety of skills for acquisition, analysis and presentation of data. This is a capstone unit of study requiring a great deal of

independence and the production of an original piece of research scholarship. As part of the assessments for the units of study, students will present to their colleagues the rationale and design of their project in a seminar setting towards the beginning of semester and their final results and conclusions at the end of semester. Additionally students will submit a 4000-word thesis in the format of a research publication.

NB: This is a capstone unit of study.

Credit points: 6 **Teacher/Coordinator:** Dr Amit Lampit **Sessions:** Semester 2 **Classes:** 3 days per week **Corequisites:** BMRI5023/5024 **Assumed knowledge:** At discretion of particular supervisor **Assessment:** presentation (10%), thesis (40%), supervisor evaluation (40%) Final presentation (10%) **Campus:** Mallett Street **Delivery Mode:** Field Experience

Week	Proposed topic / presenter
3 days per week	Research topic to be discussed with supervisor
Throughout semester	Statistics Workshops

Learning outcomes

At the conclusion of this unit of study students should be able to:

- Analyse a broad scientific question and define specific research objectives.
- Explain how the techniques being employed in the project address specific research aims and the strengths and limitations of different approaches.
- Assess and carry out protocols for data acquisition within the project.
- Present data using appropriate figures and written language.
- Apply statistical tests to examine trends in the data.
- Interpret the project's research findings in the context of the broader field and discuss implications and limitations of the project.
- Produce a written summary of the research project in a thesis format appropriate for academic publication.

Note: Department permission is required for enrolment. Students will be accepted based on availability of places and suitability of academic background.



Master of Medicine (Psychiatry) – Coursework

Overview

The Master of Medicine (Psychiatry) programme has been developed specifically as a Formal Education Course (FEC) for basic trainees in Psychiatry. It enhances neuroscience and research training in psychiatry, facilitating collaboration between clinicians and researchers, thus optimising the translation of research findings into improved healthcare practice.

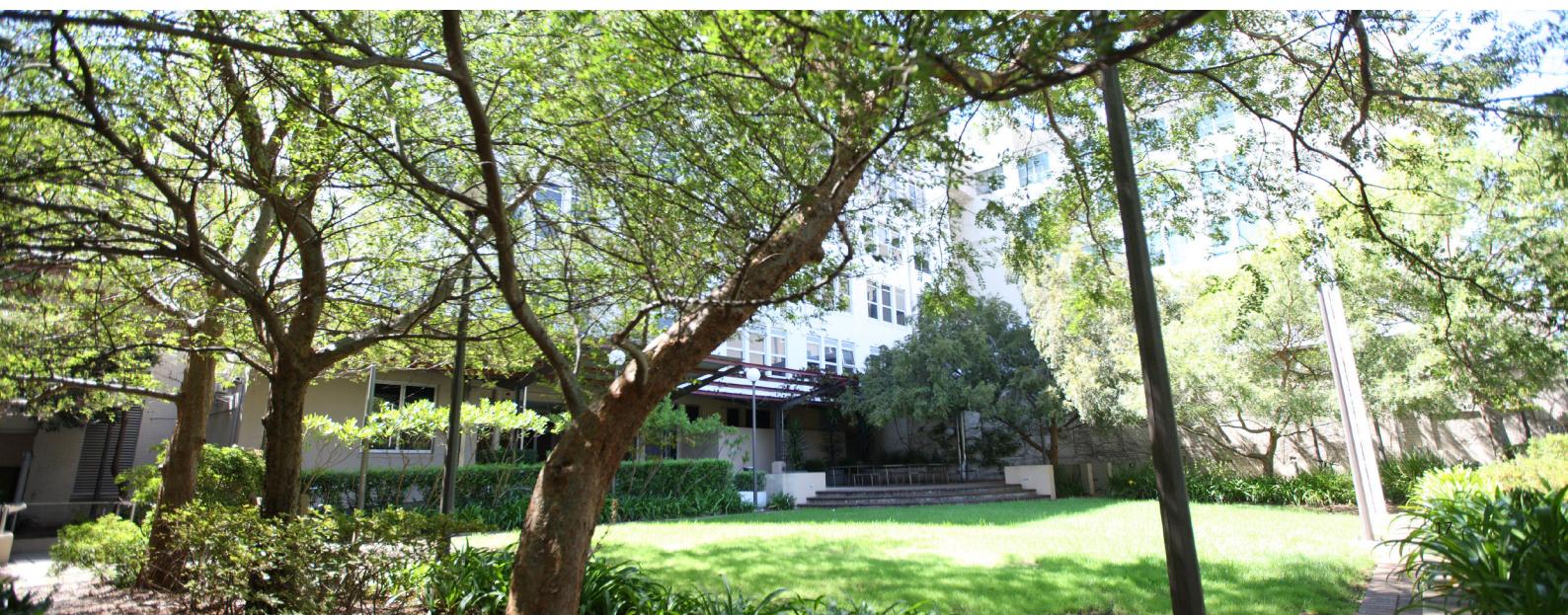
Capstone units of study require students to produce a work of scholarship that builds on learning throughout the course. The Research Project capstone provides an opportunity to work in the student's own clinical setting or with a research group at the Brain and Mind Centre. The other capstone electives are Genetics, Leadership and Neuroethics.

The postgraduate program in Medicine (Psychiatry) brings together academics and experts from the cutting edge of their respective fields. Students will emerge with an understanding of the latest in interdisciplinary research and develop critical appraisal skills to utilise the findings in clinical or research settings. The MMed (Psychiatry) offers a number of shared units with the Master of Brain and Mind Sciences, which will provide the opportunity for vital interdisciplinary collaboration in mental health research and clinical practice.

Course outcomes

Graduates of the Master of Medicine (Psychiatry) will:

- Acquire the knowledge, skills and attitudes of the Learning Outcomes for Basic Training (Stage 1 and 2) as outlined in the Royal Australian and New Zealand College of Psychiatrists Competency-Based Fellowship Program.
- Demonstrate the relevant competencies at the level of entry into advanced training in psychiatry in the seven key CanMeds roles of Medical Expert (ME), Communicator (Com), Collaborator (Coll), Health Advocate (HA), Manager (Man), Scholar (Sch) and Professional (Prof).
- Understand and apply the biopsychosociocultural model in psychiatry.
- Understand and apply relevant procedures, models, technologies and techniques in relation to clinical assessment, diagnosis, management and research of brain, mind and related general medical disorders.
- Critically evaluate the literature and make evidence-based decisions in clinical practice and research.
- Be aware of the consumer context of health delivery and have an understanding and application of recovery and trauma-informed models of care.
- Possess the University of Sydney graduate attributes including scholarship, lifelong learning and global citizenship.



Coursework options

Graduate Certificate in Medicine (Psychiatry)

requires the successful completion of 24 credit points of stream specific units of study.

Graduate Diploma in Medicine (Psychiatry)

requires the successful completion of 36 credit points of units of study comprising:

- 6 credit points of compulsory units of study (BMRI5020 Research Inquiry or equivalent)
- 30 credit points of stream specific units of study

Master of Medicine (Psychiatry)

requires the successful completion of 48 credit points of units of study comprising:

- 12 credit points of compulsory units of study made up of BMRI5020 Research Inquiry or online equivalent AND a capstone unit of study chosen from:
 - BMRI5055 Research Project in Psychiatry
 - BMRI5001 Neuroethics
 - BMRI5017 Genetics of Brain and Mind Disorders
 - BMRI5027 Leadership & Policy in Mental Health
- 36 credit points of psychiatry stream units of study

The Master of Medicine (Advanced) (Psychiatry) requires the successful completion of 60 credit points of units of study comprising:

- 48 credit points of the Master program and an additional 12 credit points of psychiatry stream units of study.

Continuing Medical Education (Short course option)

A Continuing Medical Education (CME) option is available for psychiatry trainees who wish to complete the Formal Education Course but who do not wish to progress towards a degree. Students undertaking this option will be required to attend teaching sessions and participate in online learning activities, but will not be required to submit assignments or examinations. Students in locations outside Sydney will be able to participate in classes online. All units required for completion of the FEC will be available as CME units. Please email medicine.postgradbmri@sydney.edu.au for further information or read the flyer on Psychiatry FEC pathway.

Units of study

Compulsory for the Master degree

- BMRI5020 Research Inquiry (or Introduction to Clinical Epidemiology)
- Capstone (choice listed below)

Brain and Mind Centre capstone electives

- BMRI5055 Research Project in Psychiatry
- BMRI5001 History, Philosophy and Ethics in Brain and Mind Sciences
- BMRI5017 Genetics of Brain and Mind Disorders
- BMRI5027 Leadership and Policy in Mental Health

Psychiatry stream units

- BMRI5003 Clinical Psychiatry I
- BMRI5050 Clinical Psychiatry II
- BMRI5053 Bodies, Brains and Minds in Connection
- BMRI5052 Child and Youth Mental Health
- BMRI5012 Brain Ageing
- BMRI5054 Psychotherapy and Psychosocial Care

Non-Brain and Mind Centre electives

Students are also able to choose other electives from other medical disciplines, including public health, paediatrics and critical care.

RANZCP Formal Education Course requirements

Psychiatry trainees who wish to meet the RANZCP requirements need to complete all of the following units of study:

- BMRI5003 Clinical Psychiatry I
- BMRI5050 Clinical Psychiatry II
- BMRI5020 Research Enquiry
- BMRI5053 Bodies, Brains and Minds in Connection
- BMRI5052 Child and Youth Mental Health
- BMRI5012 Brain Ageing
- BMRI5054 Psychotherapy and Psychosocial Care
- Substance Use & Addictions in Psychiatry (13 week course)
- Forensic Psychiatry (4 week short course)

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Entry requirements

Admission to the Master of Medicine (Psychiatry) or embedded degrees requires current medical registration in Australia and current employment in a RANZCP-accredited psychiatry training position or equivalent. Psychiatrists are also eligible to apply.

Student Pathway

The Master of Medicine (Psychiatry) can be completed on a part-time basis. The Formal Education Course units of study approved by the RANZCP are available over a three year pathway. The standard course progression over three years is shown below.

Stage 1 (same units every year)	
Semester 1	
BMRI5003	Clinical Psychiatry I
Semester 2	
BMRI5050	Clinical Psychiatry II
Stage 2 (some units only offered in alternate years)	
Semester 1, 2017	
BMRI5052	Child and Youth Mental Health
BMRI5020	Research Inquiry
Semester 2, 2017	
BMRI5053	Bodies, Brains and Minds in Connection
BMRI5012	Brain Ageing
	Capstone unit (BMRI5001, BMRI5017, BMRI5027 or BMRI5055*)
Stage 2	
Semester 1, 2018	
	Forensic Psychiatry short course (February) (required for FEC)
	Substance Use and Addictions in Psychiatry (required for FEC)
BMRI5020	Research Inquiry
Semester 2, 2018	
BMRI5054	Psychotherapy and Psychosocial Care
BMRI5012	Brain Ageing
	Capstone unit (BMRI5001, BMRI5017, BMRI5027 or BMRI5055*)

* Some units of study for Stages 2a and 2b will be offered in alternate years only; some units are offered every year

* BMRI5055 – possible to commence in semester 1 with departmental permission

Clinical Psychiatry I

BMRI5003 Semester 1

This unit of study provides psychiatry trainees with an opportunity to develop effective clinical skills including the psychiatric interview, mental state examination and biopsychosocial formulation. The relevance of diagnostic neuroimaging is explored as well as management of psychiatric emergencies, risk assessment and the use of mental health legislation. Students will acquire a deeper understanding of how genetic and environmental risk factors affect the developing individual to generate the

clinical symptoms of psychiatric disorders. This unit will cover all aspects of psychotic and mood disorders including aetiology, phenomenology and epidemiology. Students learn to develop management plans for these disorders according to a biopsychosocial framework incorporating psychosocial care and recovery principles. The principles of neuropsychopharmacology as applied to these disorders are covered.

Credit points: 6 **Coordinator:** Dr Sonia Kumar **Session:** Semester 1 **Classes:** Tuesday afternoons **Assessment:** weekly online assessments (30%), exam (35%), case study (35%) **Campus:** Mallett Street **Delivery Mode:** Normal (seminar)

Week	Seminar topic
1	Introductory to ECT – <i>Dr Bruce Boman, Dr Bill Lyndon</i>
2	Psychiatric assessment – <i>Dr Sonia Kumar</i>
3	Psychosis and schizophrenia – <i>Prof Antony Harris</i>
4	Antipsychotic medication – <i>Prof Antony Harrist</i>
5	Depressive disorders – <i>Dr Sonia Kumar</i>
6	Bipolar disorders – <i>Dr Sonia Kumar</i>
7	Bipolar disorders – <i>Dr Liz Scott</i>
8	Getting back to life: psychosocial management, love and work <i>Prof Antony Harris and Prof Alan Rosen</i>
9	Suicide prevention – <i>A/Prof John Mendoza</i>
10	Diagnostic classification in psychiatry – <i>Dr Daniel Hermens</i>
11	Introduction to substance abuse – <i>Dr Paul Haber</i> Introduction to delirium/dementia – <i>Dr Peter Kelly</i>
12	Neuroimaging – <i>Stefan Dimou</i> Risk assessment - <i>Dr Chris Ryan and Dr Nick O'Connor</i>
13	Extrapyramidal Side Effects - <i>Dr Lauren Taylor</i> Metabolic Effects and Medication Monitoring - <i>Dr Megan Kalucy</i>

Learning outcomes

At the conclusion of this unit of study students should be able to:

- Conduct a comprehensive psychiatric assessment.
- Critically discuss the literature regarding epidemiology, aetiology, clinical characteristics and management of psychotic and mood disorders.
- Identify and summarise biological, psychological, cultural and social contributors to the patient's illness and recovery and construct a differential diagnosis for patients presenting with psychotic and mood disorders.
- Construct and implement comprehensive management plans using evidence-based biological and psychosocial approaches in a recovery-oriented multidisciplinary context.
- Describe and apply the principles of mental health legislation, risk assessment and informed consent.
- Identify the impact of stigma of mental illness on patient, families and carers.

Clinical Psychiatry II

BMRI5050 Semester 2

This unit provides an in-depth study of anxiety, trauma and personality disorders including epidemiology, aetiology, phenomenology and management. This unit follows on from BMRI5003 Clinical Psychiatry I, and provides the psychiatry trainee with an opportunity to further develop their clinical skills with an emphasis on psychosocial care and working collaboratively with consumers and families in multidisciplinary and

community settings. This unit also provides psychiatry trainees with foundational knowledge and skills in psychotherapeutic techniques including supportive psychotherapy, building a therapeutic alliance and cognitive behavioural therapy. Principles of recovery-oriented practice and trauma-informed care, psychiatric ethics, history of psychiatry, rural and indigenous mental health will be studied.

Credit points: 6 **Coordinator:** Dr Sonia Kumar **Session:** Semester 2 **Classes:** Tuesday afternoons

Assessment: attachment formulation (40%), reflective journal essay (20%), presentation (40%)

Campus: Mallett Street **Delivery Mode:** Normal (seminar)

Week	Seminar topic
1	Introduction to CBT – <i>Dr Jason Fowler</i>
2	Anxiety disorders – <i>Dr Bill Brakoulias</i>
3	Attachment theory and normal development - <i>A/Prof Loyola McLean</i>
4	Trauma: Normal responses and associated disorders – <i>A/Prof Loyola McLean</i> Trauma informed care – <i>Ms Cathy Kezelman</i>
5	Personality disorders – <i>A/Prof Janine Stevenson</i>
6	Introduction to psychodynamic therapy <i>A/Prof Loyola McLean</i>
7	Supportive psychotherapy – <i>Sophia Parnas</i> <i>Exercise, lifestyle and mental health</i> <i>Jeanne Gehue</i>
8	Recovery philosophy and peer-led services <i>Ms Faye Jackson and Prof Alan Rosen</i> Family-centred care <i>Ms Jackie Crowe</i>
9	Rural psychiatry - <i>Dr Therese Grotowski</i> Professionalism – Teach the Teacher workshop <i>A/Prof Louise Nash and Dr Catherine Hickie</i>
10	Indigenous mental health – <i>Dr Ernest Hunter</i>
11	History of psychiatry – <i>A/Prof Hans Pols</i> Ethics seminar – <i>Dr Chris Ryan</i>
12	Supervision - <i>A/Prof Louise Nash</i> E-health – <i>A/Prof. Jane Burns</i>
13	Cultural diversity – <i>Dr Lea Crisante</i> Doctors' Health - <i>A/Prof Louise Nash</i>

Learning outcomes

At the conclusion of this unit of study students should be able to:

- Characterise the epidemiology, aetiology and clinical characteristics of anxiety, trauma, personality and dissociative disorders and conduct a comprehensive assessment, formulation and construct biopsychosocial management plans for patients with these disorders.
- Understand and apply psychodynamic principles to the development of therapeutic relationships with patients, carers and relevant others.
- Identify the major principles of supportive psychotherapy and cognitive-behaviour therapy and develop skills to apply these therapies in routine clinical practice.
- Demonstrate an understanding of the needs and characteristics of special populations within psychiatry (including Indigenous, refugee, victims of trauma, culturally diverse and rural populations) and adapt clinical approaches accordingly.
- Demonstrate an awareness of the principles of prevention, promotion, early intervention, recovery and ethics underpinning psychiatry and apply these to clinical practice.

Psychotherapy and Psychosocial Care

BMRI5054 Semester 2

This unit of study, aimed at Stage 2 psychiatry trainees, will foster development of knowledge, skills and attitudes necessary to understand, evaluate and apply a wide range of evidence-based psychotherapeutic and psychosocial interventions, including integrated service delivery systems for individuals with mental health disorders and their families. This unit will build on the psychosocial foundations and concepts of integrated formulation and care established in the first year courses to support trainees to understand the role of the major modalities of psychotherapy and psychosocial interventions that have been shown to significantly

contribute to recovery and improved outcomes in mental health. This unit offers an overview of assessment and the historical context of the development of theories of learning and personality. Participants will then examine a range of systemic functioning including psychodynamic approaches, DBT, structured brief therapies, more advanced applications of CBT and group, couples, family and systems of care interventions. Teaching methods will focus on research-enhanced and case-based learning with an integrative approach, supplemented by e-learning and audiovisual resources.

Credit points: 6 Coordinator: A/Prof Loyola McLean Session: Semester 2 Classes: Thursday afternoons Assessment: Case Study Part I (20%), presentation (40%), Case Study Part II (40%) Campus: Mallett Street Delivery Mode: Normal (seminar)

Week	Seminar topic
1	Overview of contemporary psychotherapy <i>Dr Sandy Kuiper</i> Psychometric assessment
2	Evidence based family and social system interventions <i>Prof Alan Rosen</i>
3	Psychology theories: history and overview; Assessment: principles and overview <i>Jeffrey Streimer</i>
4	Basic psychodynamic theory and formulation; <i>A/ Prof Loyola McLean</i> Psychodynamic approaches <i>Anne-Marie Swan</i>
5	Psychodynamic approaches II; Self psychology; <i>Jan Egan</i> Conversational model <i>Anthony Korner</i>
6	CBT advanced skills and applications
7	DBT overview <i>Denis Chu</i>
8	Structured brief therapies: IPT, ACT, Schema therapy, EMDR <i>Jason Fowler</i>
9	Group theory, dynamics and therapy <i>Michael Williamson</i>
10	Couples therapy <i>Lea Crisante</i>
11	Journal Club Session <i>A/Prof Loyola McLean</i>
12	Family therapy
13	Integrating care across time and systems: staged and multimodal approaches and cultural awareness <i>Mirijana Ascovic</i>

Learning outcomes

At the conclusion of this unit of study, students should be able to:

- Understand, evaluate and apply a wide range of evidence-based psychotherapeutic and psychosocial interventions to individuals and systems.
- Understand the historical context of the development of theories, basic principles and evidence in psychotherapy and psychosocial care.
- Conduct comprehensive biopsychosocio-cultural assessments and develop related formulations and tailored management plans including relevant psychosocial interventions for individuals and systems.
- Apply a nuanced, self-reflective understanding of the personal contribution to the therapeutic relationship and consider personal and professional development and self-care.
- Develop deeper understanding of the frameworks of human development across the life span and apply this to biopsychosocial formulation, management and reflective practice.
- Understand and apply theories of learning and personality to psychiatric assessment and treatment.
- Understand and participate in integrated service delivery systems with an awareness of concepts of prevention, early and assertive intervention, recovery, and trauma-informed care.

Child and Youth Mental Health

BMRI5052 Semester 1

This unit of study is designed for psychiatry trainees to develop their learning in the subspecialty of child and adolescent psychiatry. The key approach of the unit will be to provide students with the capacity to understand child and family psychopathology from the molecular level to the societal. This unit provides an understanding of child development from conception through adolescence, looking at key genetic and environmental factors that contribute to clinical disorder, particularly the role of the family environment. The different phases of brain development will be studied, from the formation of new connections in childhood to the pruning of connections in adolescence. Major psychopathologies

such as mood and anxiety disorders, attention deficit/hyperactivity disorder (ADHD) and autism spectrum disorder will be examined, as well as other forms of learning difficulty and cognitive impairment. The effects of puberty and gene development will be explored with respect to the development of emerging adolescent psychiatric disorders, such as mood disorders. Students will learn about psychological treatments and pharmacological management of mental disorders in children and adolescents, as well as the importance of working with families, carers and wider systems including multidisciplinary teams, education and welfare sectors.

Credit points: 6 **Coordinator:** Dr Raphael Chan **Session:** Semester 1 **Classes:** Thursday afternoons **Assessment:** research analysis (35%) oral presentation (30%) essay (35%) **Campus:** Mallett Street **Delivery Mode:** Normal (seminar)

Week	Seminar topic
1	Introduction to child and adolescent psychiatry <i>Dr Raphael Chan</i>
2	Interviewing and assessment – <i>Dr Raphael Chan</i>
3	Anxiety disorders in children and adolescents <i>Dr Raphael Chan</i>
4	Mood disorders in children and adolescents <i>Dr Raphael Chan</i>
5	Autism spectrum disorder – <i>Rebecca Sutherland</i>
6	ADHD – <i>Dr Raphael Chan</i>
7	Externalising disorders / Somatic disorders <i>Dr Raphael Chan</i>
8	Children of parents with mental disorders; Child protection; Responses to trauma <i>Dr Raphael Chan</i>
9	Intellectual disability; Neurodevelopmental disorders <i>Prof Stewart Einfeld and Dr Simone Arden-Holmes</i>
10	Psychosis in childhood – <i>Dr Jean Starling</i>
11	Psychopharmacology in children and adolescents – <i>Dr Raphael Chan</i>
12	Patients, families and carers and systematic issues – <i>Dr Raphael Chan</i>
13	Psychological treatments – <i>Dr Raphael Chan</i>

Learning outcomes

At the conclusion of this unit of study, students should be able to:

- Analyse the trajectory of normal and abnormal brain, cognitive and social development from infancy through to early adulthood.
- Evaluate the influence of genetics, environmental and social factors on child and youth development.
- Conduct a comprehensive psychiatric assessment on a child or young person and synthesise information from family interviews and other sources to generate a differential diagnosis and formulation.
- Evaluate the effectiveness of different therapeutic and management options. Develop comprehensive management plans incorporating psychological and pharmacological strategies in a multidisciplinary setting.
- Identify at-risk groups for developing mental health disorders and discuss the range of targeted interventions and service delivery models that will maximize outcomes for this group.
- Work collaboratively within a multi-disciplinary mental health team, other health professionals and agencies in achieving mental health outcomes for children and youth. Advocate for children and youth with a particular regard for child protection.

Bodies, Brains and Minds in Connection

BMRI5053 Semester 2

This unit of study provides Stage 2 psychiatry trainees with an opportunity to develop knowledge, skills and attitudes in biopsychosociocultural approaches, Consultation-Liaison (C-L) psychiatry and integrative medicine, by exploring psychiatry at the interface with medicine and society. The unit approach will emphasise the interconnectedness of body, brain and mind in individuals and the surrounding systems. What's different about C-L will be explored. This unit will be grounded in an understanding of the normal and dysregulated responses to stress, trauma and medical illness, including pain, expanding Stage 1 concepts of formulation, multimodal and tailor-made management. Principles of containment, stigma, models of care in

medical settings and disorders of basic regulation – sleep, eating and sexual disorders – will be studied. We will examine psychiatry in particular settings: the perinatal period; intellectual and developmental disability; pain; oncology; spinal; burns; neuropsychiatry. This unit will also deepen knowledge of ECT and introduce the newer biological treatments such as TMS. This unit aims to enrich the trainee psychiatrist's approaches to working collaboratively with consumers, families, treatment teams and care systems in multidisciplinary hospital and community settings. Seminars will emphasize an enquiring approach, based on evidence and engagement with the background medical and general communities.

Credit points: 6 **Coordinator:** A/Prof Loyola McLean **Session:** Semester 2 **Classes:** Thursday afternoons

Assessment: case study (20%), presentation (40%), essay (40%) **Campus:** Mallett Street **Delivery Mode:** Normal (seminar)

Week	Seminar topic
1	How is consultation-liaison different? The HIV case study – <i>Dr Melissa Corr</i>
2	Stress and its satellites – <i>Jeff Streimer</i>
3	Chicken and egg: psychiatric sequelae of medical conditions and vice versa – <i>Dr Chris Ryan</i>
4	The body talks: somatic symptoms and related disorders – <i>Kasia Kozlowska and Jeff Streimer</i>
5	Models of care and care modelled <i>Dr Rachael Kornhaber and Luis Salvador Carulla</i>
6	Putting it all together: C-L settings case studies 1 <i>Peter Kelly and Newman Harris</i>
7	Putting it all together: C-L settings case studies 2 <i>Dr Cathy Mason and Dr Ralf Ilchef</i>
8	Antenatal and perinatal – <i>Dr Marie-Paul Austin</i>
9	Got to eat! Eating disorders – <i>Lyn Chiem</i>
10	Sleep and sex <i>Prof Nick Glazier and Dr Kamala Touma</i>
11	Neuro-economics – <i>Agnieszka Tymula</i> MS: clinical trials/patients/ arers – <i>Marinda Taha</i>
12	Neuropsychiatry <i>Adith Mohan and Prof Dominic Rowe</i>
13	Intellectual & developmental disabilities <i>Dr Bruce Chenoweth and Prof Luis Salvador Carulla</i>
14	ECT/TMS/novel brain treatments – <i>Prof Colleen Loo</i>

Learning outcomes

At the conclusion of this unit of study, students should be able to:

- Understand the similarities and differences of working in Consultation and Liaison psychiatry and illustrate this through a closer knowledge of one or more C-L contexts.
- Demonstrate a developing knowledge of systems in healthcare systems
- Demonstrate an understanding of the particular medication needs of the medically ill or frail.
- Understand and apply concepts of stress, coping and stress dysregulation in individuals and systems including grief, loss, trauma and pain.
- Develop biopsychosocial formulations for C-L problems and develop a relevant integrated multimodal management plans.
- Demonstrate and apply an understanding of stigma, cultural competence and the role of containment and conflict resolution in C-L contexts.
- Understand and evaluate adjustment to illness and the sick role and the potential impact on normal development, comorbidity and health care presentations.
- Understand the impact of psychiatric illness on medical health and wellbeing.

Research Project in Psychiatry

BMRI5055 Semester 1 and/or 2 CAPSTONE ELECTIVE

This practically based elective unit of study aims to provide a capstone experience for those psychiatry trainees wishing to gain experience in empirical research (quantitative or qualitative). This unit is to be taken over one semester, 7 hours per week field placement, or may be extended over two semesters,

3½ hours per week field placement. Students will learn a variety of skills for acquisition, analysis and presentation of data particular to their field of interest and will write up their project as a draft research publication. Potential projects can be reviewed by students in the semester prior to commencement so that they can familiarise themselves with the research conducted at the Brain and Mind Centre,

including placements in clinical research groups and basic neuroscience laboratories, depending on student skills and supervisor availability. Students may consult their local training networks and propose a supervised project well prior to the commencement of the unit. Projects may contribute to the Scholarly Project for the RANZCP CBFP if approved by the RANZCP Branch Training Committee. Acceptance to a given project will be selective, requiring departmental permission.

NB: This is a capstone unit of study.

Credit points: 6 **Teacher/Coordinator:** A/Prof Loyola McLean **Sessions:** Semester 1 and 2 **Classes:** 1 day per week **Assessment:** Introductory presentation (10%), thesis (40%), supervisor evaluation (40%) Final presentation (10%) **Campus:** Mallett Street **Delivery Mode:** Field Experience

Week	Proposed topic / presenter
1 day per week	Research topic to be discussed with supervisor

Learning outcomes

At the conclusion of this unit of study students should be able to:

- Analyse a broad scientific question and define specific research objectives.
- Explain how the techniques being employed in the project address specific research aims and the strengths and limitations of different approaches.
- Assess and carry out protocols for data acquisition within the project.
- Present data using appropriate figures and written language.
- Apply statistical tests or qualitative analysis to the data as appropriate.
- Interpret the project's research findings in the context of the broader field and the discuss implications and limitations of the project.
- Produce a written summary of the research project in a thesis format appropriate for academic publication.

Note:

*Department permission required for enrolment.
Students will be accepted based on availability of places and suitability of academic background.*



Postgraduate Research Degrees in Brain and Mind Sciences

What is a research degree?

Research degrees are very different from coursework degrees in that the majority of work is self-directed study with supervision by a group of academics, working on a project that aims to make an original contribution to knowledge. Some degrees require a limited amount of coursework, but at least two thirds of the degree must be by research for the degree to be considered a higher degree by research.

Apart from any required coursework, the assessment of a research degree is through the examination of a thesis written by the student. The thesis is sent to a group of examiners and their recommendations form the basis for the outcome of the examination.

Postgraduate research degrees appeal to different people for different reasons. You may want to:

- investigate and explore in depth a specialised area of interest;
- demonstrate your capability to apply sustained effort and intellectual rigor to a complex problem;
- differentiate yourself from the masses and receive professional parity with clinical peers; and/or
- advance your career – a postgraduate research degree can help progress your career and obtain roles in government and industrial research and developmental organisations.

Master of Philosophy

1–2 years full-time

2–4 years part-time

The Master of Philosophy (MPhil) is aimed at those who intend to pursue careers in medical or health research or who wish to upgrade their qualifications to give them a competitive edge in their employment by demonstrating superior ability and some research experience. It may also be used as a stepping stone to commencing a Doctor of Philosophy (PhD).

The MPhil is a research degree in which students undertake supervised research leading to the production of a thesis. Admission normally requires a bachelor's degree with first or second class honours from the University of Sydney or another approved institution, or equivalent qualification. The faculty may admit an applicant who has obtained at least a credit in the

highest course available in the subject or subjects relevant to the proposed course of advanced study and research. Full-time MPhil students have a minimum of 1 year and maximum of 2 years to submit a thesis for examination. Part-time students have a minimum of 2 years and a maximum of 4 years to submit.

MPhil students are required to complete one 6-credit-point unit of study, MEDF5005 Research Methods and Ethics, early in their candidature to provide them with guidance on areas relating to research such as writing papers and theses, reading and critiquing technical papers and writing literature reviews. Otherwise, MPhil students are not normally required to attend classes or undertake coursework units of study, with the thesis being the major examinable assessment requirement for the degree.

Doctor of Philosophy

3½ years full-time

7 years part-time

The Doctor of Philosophy (PhD) is different from all the other degrees offered by the University as it is the only degree offered at the University level with the same regulations governing a PhD student whether the student is in fine arts, medicine or architecture.

The Doctor of Philosophy (PhD) is a thesis-based research degree that allows students to explore an area of research interest in depth. It takes a minimum of 3½ years' full-time or 7 years' part-time study to

complete. Applicants of the Doctor of Philosophy should normally hold a relevant master's degree or a bachelor's degree with first or second class honours. In addition to these academic requirements, the head of department must certify to the faculty that your proposed course of advanced study and research is appropriate and acceptable; that, in addition to the academic qualifications, you have the necessary training and ability to pursue the proposed course of study and research; and that there are sufficient supervisory and other resources and facilities available to enable your candidature to be completed successfully.

Steps to become a postgraduate research student at the Brain and Mind Centre

Are you academically qualified to apply for a higher degree by research?

In general, to be eligible for admission to a higher degree by research, you need to have undertaken a significant research project or thesis in your previous university level studies. For example, the equivalent of an Australian Honours degree or a Masters by research or a Masters by coursework with a thesis component.

Step 1: Choose a project

Browse the Brain and Mind Centre's research pages
<http://sydney.edu.au/brain-mind/>

Once you have identified an area of interest, contact the listed supervisor, provide your resume and arrange for a visit to discuss with them the possibility of studying with them at the Brain and Mind Centre.

Step 2: Seek approval

Discuss the project details with your potential supervisor and provide them with a draft project proposal. (You will need to upload the proposal with your application.)

Step 3: Apply for a scholarship

Apply for a scholarship with the University of Sydney or other funding body.

Please note that the cut-off date for scholarship applications may vary. Please check carefully.

Step 4: Apply at the University of Sydney

Submit your application online via Sydney Student
<http://sydney.edu.au/courses/master-of-philosophy-medicine>

<http://sydney.edu.au/courses/doctor-of-philosophy-medicine>

Click on the 'apply now' button. You will need to upload your Research Proposal along with other documents such as your academic transcript and your CV. Please also include any relevant scholarship information with your application.

Step 5: Start

If your application is approved, you will be sent an offer from the University of Sydney. After you have accepted your offer, please contact your supervisor and arrange a start date. You will also need to enrol as directed. Please contact the Postgraduate Program Student and Academic Coordinator two weeks prior to your start date at medicine.postgradbmri@sydney.edu.au

Research students are required by the University of Sydney to complete annual progress reviews. In addition, students are expected to participate in research meetings throughout their candidature. Students are required to present their work to their peers once a year.



How to apply

Postgraduate coursework applicants

Domestic applicants

If you are:

- an Australian or New Zealand citizen; OR
 - you hold dual citizenship with Australia or New Zealand and another country; OR
 - you are an Australian permanent resident
- then you are a “domestic applicant”.

For detailed information about application, admission and enrolment procedures, go to: <http://sydney.edu.au/study/admissions/apply/how-to-apply.html> All applications need to be completed and submitted online.

Closing dates for domestic applications

Brain and Mind Sciences degrees

30 November 2016* for Semester 1
(commencement in March 2017)

Master of Medicine (Psychiatry)

18 January 2017 for semester 1 commencement
30 June 2017 for semester 2 commencement

* Note that application closing dates for some scholarships may vary and therefore students should refer to the website: <http://sydney.edu.au/scholarships/> for specific application closing dates.

International applicants

If you do not meet the criteria listed above to be considered a domestic applicant, then you are an “international applicant”.

For detailed information about application, admission and enrolment procedures for international students, visit <http://sydney.edu.au/study/admissions/international-students-why-choose-sydney.html> All applications need to be completed and submitted online.

Closing dates for international applications

31 October 2016 for Semester 1
(commencement in March 2017)

Postgraduate research applicants

In postgraduate research courses, students undertake a supervised research project leading to the production of a thesis. For information on the research application process, refer to the website <http://sydney.edu.au/futurestudents/domestic/postgraduate/research>

Fees and scholarships

For detailed information about fees and scholarships for domestic students, <http://sydney.edu.au/scholarships/research/>

English language requirements

If English is not your first language, you must demonstrate English language proficiency by one of the following means before admission can be confirmed:

- Provide evidence of satisfactory achievement in tertiary studies in which the exclusive language of the institution and the exclusive language of instruction, examination and assessment was English. These studies must have been undertaken no more than five years before you submit your application.
- Achieve the required grades in “English for Academic Purposes” at the University’s Centre for English Teaching. The course must have been completed no more than two years before you submit your application.
- Achieve the required grades on an International English Language Testing System (IELTS) or Test of English as a Foreign Language (TOEFL) test.

For more information on these tests, visit the IELTS website: <http://www.ielts.org> or the TOEFL website: www.ets.org/toefl

Please refer to: <http://sydney.edu.au/study/admissions/apply/entry-requirements/english-language-requirements.html> for full details.

Dr John Hayman

Consultant Psychiatrist and Graduate of Master of Brain and Mind Sciences, 2013:

"The course has greatly enriched my clinical practice, adding huge depth of additional understanding and perspective to my previous clinical knowledge and experience.

"To me, the Masters course felt like doing medicine and psychiatry all over again, informed by the latest research in neuroscience, and exposed to teachers of a high calibre.

My clinical work now has a greater authority in its delivery and my patients are often fascinated by explanations that describe

the working of the brain in relation to their clinical problem.

*"I had been waiting many years for a course like that presented at the BMRI.**

"The course over-delivered in abundance. The scope of its content and clinical enrichment far exceeded what I had anticipated and hoped for. I am happy to personally recommend it to anyone considering further study whether they are contemplating a clinical or research career."

* The Brain and Mind Centre was formerly known as the BMRI until mid-2015.

For additional information, contact:

Postgraduate Program
Brain and Mind Centre

T +61 2 9114 4048

E medicine.postgradbmri@sydney.edu.au

OR <http://sydney.edu.au/brain-mind/>

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