Research Degree Completions

Professional Doctorate of Psychology (Counselling Psychology)

Julie Fricker *Predicting Infidelity: The Role of Attachment Styles, Lovestyles and the Investment Model.*

Coordinating Supervisor: Professor Susan Moore
Associate Supervisor: Dr Bruce Findlay

Julie's study was to clarify the concept of infidelity among a large sample of Australians aged between18 and 60 years. She examined beliefs and behaviours associated with unfaithfulness and investigated the association between infidelity and several individual, relationship, and environmental variables. Results confirmed the prevalence of infidelity, with reports of the behaviour ranging from 20% in current relationships to 42% in previous relationships. The study also emphasised the multifaceted nature of motivations towards infidelity. Findings are intended to inform therapeutic practice in the hope that a greater understanding of the factors associated with infidelity may assist individuals and couples to take the course that best suits their psychological wellbeing.

Kaileen Pearson *Healthy and Harmful Adolescent Attachment, Conflict, and Anger*

Coordinating Supervisor: Dr Roslyn Galligan
Associate Supervisor: Associate Professor Glen Bates

This study investigated adolescent attachment styles, parent-adolescent conflict-anger patterns and adolescent depression. Adolescents with secure attachment styles reported healthy conflict and anger; they experience negative emotions, but they have good emotional regulation and expect conflict to be resolved well for everyone. One harmful conflict-anger pattern, associated with preoccupied and fearful attachment styles included, higher levels of family conflict involving poor conflict endings and even low levels of violence. The other harmful conflict-anger pattern was associated with a dismissive attachment style and involved conflict with coolness and alienation in the family, as well as lower levels of reported problem solving strategies and good conflict endings.

Monica Thielking *An investigation of attitudes towards the practice of school-based psychological services.*

Coordinating Supervisor: Professor Susan Moore

Monica provided a much needed Australian contribution to the research pertaining to school psychology. Victorian School psychologists, principals and teachers were surveyed and the results highlighted the complex nature of school psychologists' roles and a number of issues that are in need of improvement, particularly the unsatisfactory physical resources allocated to some school psychologists and the reported lack of understanding amongst some teachers and principals of the ethical responsibilities of school psychologists. Monica has published a number of manuscripts both nationally and internationally and is now working for the Australian Psychological Society in a role dedicated to implementing some of the recommendations of her thesis, as well as supporting School psychologists nationally.

Suzanne Warner *Holiday and School Term Sleep Patterns of Australian Adolescents*

Coordinating Supervisor: Dr Greg Murray
Associate Supervisor: Professor Susan Moore

Suzanne's study examined the differences between holiday and school term sleep patterns in adolescents, as well as investigating the complex interrelationships between sleep patterns, sleep quality, circadian preference, substance use, mood, daytime functioning, and grades in a longitudinal study. Three hundred and ten senior secondary school students, aged between 16 – 18 years of age, completed both holiday and school time self-report surveys.

Consistent with trends reported in other countries, the study found that students adopted a later sleep/wake phase over the holidays, with the majority reporting that they obtained adequate sleep. During school term however, the majority of students were dissatisfied with the amount of sleep they were able to obtain due the imposition of the school schedule, accumulating considerable sleep debts over the week. Lower sleep times and poorer quality of sleep were associated with decrements in mood and daytime functioning. Evening typed students who had a circadian preference for the later timing of daily activities and later sleep/wake cycles were the most vulnerable to sleep debt, lower mood, and poorer functioning throughout the day, as well as reporting higher use of substances such as caffeine, nicotine and alcohol. They also tended to report lower academic achievement. Suzanne's study demonstrated that sleep patterns and circadian preference significantly affected the day to day functioning and well-being of adolescents, and the findings have implications for school/life balance in the teenage years.

Professional Doctorate of Psychology (Health Psychology)

Jo-Anne Abbott *The Influence of the Quality of Childhood Sports Participation Experiences on Adult Motivation to be Physically Active*

Coordinating Supervisor: Dr Elfriede Ihsen
Associate Supervisor: Dr Judith Charlton

Jo-Anne Abbott's doctoral thesis comprised two questionnaire studies to examine whether adult motivation to be physically active, is influenced by the quality of childhood and adolescent sports participation experiences. Jo found that adolescent sports experiences indirectly influenced adult level of activity through influencing adult perceptions of competence and control over physical activity behaviour, the tendency to set activity goals and the intrinsic enjoyment of activity. Jo also found that adolescent sports experiences influenced the type of physical activity engaged in during adulthood, with more negative memories of sports participation being associated with currently taking part in non-sport related activities.

Kellie Karantzas *An investigation of obesity and binge eating behaviour in preadolescent Australian school children*

Coordinating Supervisor: Dr Naomi Crafti
Associate Supervisor: Professor Susan Moore

Kellie investigated associations between childhood obesity, social messages, depression, and eating behaviours. Twenty-five percent of over 500 children aged between nine and thirteen years old were

overweight and six percent were binge eating which involved overeating with little control. Children were more likely to be depressed and to binge eat if they were teased or were influenced by media messages about ideal male and female bodies. Depression and eating behaviour were more influenced by teasing for boys but by media messages for girls. Programs need to help children handle negative social messages and their psychological responses as part of reducing childhood obesity.

Andrew Sinclair *The Primary Health Care Experiences of Gay Men in Australia*

Coordinating Supervisor: Dr Simone Buzwell
Associate Supervisor: Professor Susan Moore

The present research was designed to examine the primary health care experiences of gay men in Australia and assess doctors' attitudes and training with regard to gay men and their health care. Almost 200 gay men and 25 GPs took part. The most important health concerns of gay men were stress and depression followed by HIV/AIDS, body image disorder and other sexually transmissible infections. Including those participants who were unsure, approximately one-half reported experiencing homophobia and almost one–quarter reported experiencing discrimination in the provision of health care. Of the doctors involved, non-gay specialist GPs were less comfortable treating gay men and reported poorer communication than their gay specialist counterparts. Further, doctors perceived their medical education regarding gay men's health has been inadequate. Together, the results suggest that disclosure of sexuality is an important issue for both gay men and doctors, and has the potential to impact on the quality of health care that gay men receive. In order to improve the level of disclosure, the pervasiveness of homophobia and discrimination in primary health care must be reduced. Failure to address these issues will condemn gay men to continued health inequality.

Sandra Walker *Prostate Cancer Support Groups: An Evaluation*

Coordinating Supervisor: Dr Elizabeth Hardie
Associate Supervisor: Associate Professor Ann Knowles

This thesis explored the attitudes and perceptions of 188 men with prostate cancer, some 107 of whom had joined support groups and 81 who had not. Support group members reported high levels of satisfaction with their groups. They also reported greater knowledge about the disease, but more physical and emotional symptoms, when compared with non-members. The most frequently reported benefits of group membership were gaining information, sharing experiences and assisting other men with prostate cancer. Half of the men who were not members of prostate cancer support groups said they were unaware that such groups were available to them. This finding supported the views of group members who noted that greater medical and government recognition of prostate cancer support groups was needed.

Master of Applied Science

Michael Thomsen *Immunomodulatory Effects of Traditional Chinese Herbal Formulation. Ginseng and Dang Gui Ten Combination (PS10)*

Coordinating Supervisor: Professor Avni Sali
Associate Supervisor: Dr Luis Vitetta

Doctor of Philosophy

Paul Allsopp *Measuring team performance and modelling home advantage in cricket*

Coordinating Supervisor: Professor Stephen Clarke
Associate Supervisor: Dr Basil Mark De Silva

Using statistical modelling techniques the thesis quantifies the extent to which team quality effects and a range of associated factors such as home advantage, batting order and winning the toss have shaped team performance in cricket. The thesis proposes a method to produce consistent margins of victory in One-day International cricket by projecting the score for the team batting second, and computes team ratings and home advantages in all forms of cricket. It was determined that the team ratings provide a robust measure of team quality which is not sensitive to the extraneous effects that may disproportionately affect team performance.

Julie Angerosa *The Role of Adsorption in the Adsorbing Colloid Flotation of Anions*

Coordinating Supervisor: Associate Professor Ian Harding
Associate Supervisor: Professor David Mainwaring

Flotation is one of Australia's most important technologies, resulting in our ability to separate high value minerals from low grade ore. It can also be used as a contaminant remediation technology to purify water. Mercury, sulphate, phosphate and nitrate are four aqueous contaminants which Julie has specialised in, and she has performed a fundamental analysis of the adsorption of these waste products onto colloidal material. She has then shown that this is the first, and most important step, in water treatment using flotation. Optimising this first step has enabled her to undertake practical, cost effective and efficient removal of contaminants using adsorbing colloid flotation.

Donna Athan *Topographic Distribution of Human Brain Activity Associated with Cognitive Processing in Anxiety Disorders*

Coordinating Supervisor: Professor Richard Silberstein
Associate Supervisor: Professor Graham Burrows

Anxiety disorders are the most frequently diagnosed psychiatric condition affecting some 29% of the population. Donna used brain imaging to investigate brain electrical activity in normal women and women diagnosed with Panic Disorder. Donna showed for the first time, that viewing anxiety-provoking words activated a region in the right posterior part of the brain while viewing neutral words had no such effect in normal women. In panic patients, both anxiety-provoking and neutral words powerfully activated this brain region, suggesting that patients processed all words as if they were

anxiety-provoking. Donna's work not only contributes to our understanding of this disorder but also to better diagnosis and treatment.

Tristan Barnett *Mathematical Modelling in Hierarchical Games with Specific Reference to Tennis*

Coordinating Supervisor: Professor Stephen Clarke
Associate Supervisor: Professor Alan Brown

This thesis investigates problems in hierarchical games such as tennis. A Markov chain model is used to estimate the probabilities of players winning and the expected remaining length of a match in progress, based on their playing statistics. The process can be implemented in real-time with the predictions providing commentators and spectators with an objective view on the likely match outcome. The models are also used to determine when players should alter their effort to optimize their available energy resources. By representing warfare as a hierarchical scoring system, the results obtained in tennis are used to solve defence strategy problems.

Bradley Carter *The Prediction of Both Short and Long Term Outcomes Following Severe Brain Injury using Somatosensory Evoked Potentials*

Coordinating Supervisor: Professor Dale Murphy
Associate Supervisor: Dr Warwick Butt

Somatosensory Evoked Potentials (known as SEPs), measure the response of the brain to certain stimuli. Bradley's thesis examines the relative ability of SEPs to predict outcome in patients who have suffered a severe brain injury. The predictive value of SEPs was examined directly and in comparison to alternative tests using both patient data and literature reviews. The outcome was also assessed at different times after injury using both functional and quality of life measures. SEPs were found to be outperformed by some standard clinical tests in specific areas, but were superior overall.

Mathew Dafilis *Computational Investigations of a Model of Neocortical Electrorhythmogenesis*

Coordinating Supervisor: Dr David Liley
Associate Supervisor: Dr Peter Cadusch

The work of Mathew Dafilis is in the area of neuroscience known as brain dynamics. Mathew investigated a mathematical model of brain electrical activity developed by David Liley and found that the model supported a special type of behaviour known as chaotic dynamics. This finding of chaos in a model of brain electrical activity was a first for scientists in this field. Mathew also investigated the dynamics of the model when the model's parameters were varied, and found that the mathematical model supported many different types of dynamics found in experiments. This work will have a lasting impact on brain dynamics.

Kathryn Ellis *The dopaminergic system and human spatial working memory: A behavioural, electrophysiological and cerebral blood flow investigation*

Coordinating Supervisor: Associate Professor Pradeep Nathan
Associate Supervisor: Professor Paul Grasby

Working memory is essential for many everyday tasks such as reading and decision-making. Deficits in working memory are observed in psychiatric disorders such as schizophrenia and Parkinson's disease, and are linked to dysregulation in a chemical system called the dopaminergic system. However the role of dopamine in working memory and its effects on associated brain circuits are poorly understood. This thesis used a number of brain imaging techniques to examine the brain circuits associated with working memory and how these are influenced by changes in dopamine, by using a pharmacological technique to temporarily deplete brain dopamine levels. The main findings indicate that a number of brain areas such as the frontal and parietal cortices are critical for various stages of working memory function, and that these brain circuits can be influenced by changes in dopamine neurotransmission. Findings also suggest that the brain can partly compensate for changes in dopamine levels, and that the degree dopamine depletion must be high to impair working memory function. The findings from this research have resulted in a number of key papers in international peer-reviewed journals.

Donald Forbes *Dynamic Prediction of Australian Rules Football using Real Time Performance Statistics*

Coordinating Supervisor: Professor Stephen Clarke
Associate Supervisor: Dr Denny Meyer

Using data from 1295 AFL matches as collected by the official information providers to the AFL, detailed analysis was performed in an attempt to develop a dynamic prediction model. Preliminary findings indicated that a Markov process would suit and two models were subsequently derived. The first model, consisting of 8 states, pays no regard to location on the ground, whilst the second model consisting of 16 states, is dependent on ball location. Output from the models was used this year by several AFL clubs in a weekly report format and commercialization of the process in the off-season will see it used by clubs 'in-game' next season.

Lisa Gardner *Emotional Intelligence and Occupational Stress*

Coordinating Supervisor: Professor Con Stough
Associate Supervisor: Professor Grant Devilly

Recent research has focused on the role of emotions in the workplace. This movement has largely been attributed to research around the construct of Emotional Intelligence (EI). This thesis examined the relationship between EI and the occupational stress process. The first study of this thesis involved the administration of a questionnaire. The results indicated that employees who reported using EI were less likely to report feelings of stress, ill-health and lowered satisfaction and commitment. The results of Study 1 provided a rationale for the development of an EI training program. Study 2 involved the development and implementation of an EI training program. The findings of Study 2 demonstrated the effectiveness of the training program in terms of improving EI, decreasing stress and strain and improving the outcomes of stress. This thesis provides support for the theory that EI can be learned and developed.

Denise Hamblin *The Effect of Mobile Phone Emitted Electromagnetic Fields on Human Brain Activity and Performance*

Coordinating Supervisor: Associate Professor Rodney Croft
Associate Supervisor: Associate Professor Andrew Wood

Denise's aim was to determine whether mobile phone exposure affects human brain activity, performance and behaviour. Results of the study indicated that 30 minutes of exposure to a mobile phone can alter brain activity and performance in various forms, for various sub-groups of the population and in a matter of minutes. Specifically, active exposure led to a reduction in psychological activation and increased alpha power, possibly representing a temporary change in integrative brain function. This study involved 120 human volunteers as part of the main experiment, and it provided the strongest demonstration of mobile phone-related effects on human brain activity and performance to date.

Benjamin Harrison *Functional Imaging Studies of Executive-Attention in Humans: Comparing Healthy Subjects & Patients with Neuropsychiatric Disorder*

Coordinating Supervisor: Associate Professor Pradeep Nathan
Associate Supervisor: Associate Professor Christos Pantelis

One of the major goals of cognitive neuroscience is to better understand the neural bases of human executive, or 'higher-order', attentional processes. Functional neuroimaging has become a gold standard for pursuing such work *in vivo*. The focus of this thesis concerns a novel application of the classic Stroop paradigm and a functional imaging methodology to examine executive-attention performance in healthy subjects and patients with schizophrenia and obsessive-compulsive disorder. These studies address current ideas on the nature of executive-control mechanisms and how they may be compromised in these two common psychiatric disorders. This work also examines important conceptual and interpretive issues associated with functional imaging approaches to the study of higher-cognition and cognitive psychopathology in humans.

Pajaree Rajatanavin *Solid-Stabilised Foams Produced Using a Mixed Surfactant System*

Coordinating Supervisor: Associate Professor Ian Harding
Associate Supervisor: Dr Ian Bowater

Foams are well known in a number of areas such as mineral flotation, fire-fighting, materials manufacture and cleaning products. It is less well known that foams can be used to treat industrial waste and remediate environmental pollution. Such foams are often stabilised by micro and nano sized particles composed of solid hydrous metal oxides. Ms Rajatanavin has shown that very stable foams can be formed using a specific mixture of surfactants and hydrous metal oxides, but only if the chemistry of the oxides is properly controlled. The foams can then be used to trap and remove problematic contaminants in water.

Andrea Sharam *Market Segmentation and Domestic Electricity Supply in Victoria*

Coordinating Supervisor: Professor David Hayward
Associate Supervisor: Dr Peter Love

Andrew Tucker *Visual Spatial Attention in Three-Dimensional Space*

Coordinating Supervisor: Associate Professor John Patterson
Associate Supervisor: Dr Geoffrey Stuart

Visual spatial attention is the ability to *select* a part of a visual scene and concentrate on it. While everyday life requires many shifts of attention within and between depths, current understanding of how spatial attention works is based on 2-dimensional space only. Therefore, the aim of this thesis was to determine if near-far information is as important in attracting attention as left-right information. The findings suggested that while attentional selection can be directed to locations in 3-dimensional space given the correct conditions, time and importance can determine when our brain selects the visual content.

Bachelor of Arts (Honours) in Psychology

Self-perceptions as a vulnerability to obsessive-compulsive disorder: Investigation into self-ambivalence and a self-worth contingent upon high moral standards
Claire Ahern

Core components of perfectionism: High personal standards, self-evaluative concerns, and self-worth contingent upon success
M Andreeta

The relationship between burnout and emotional intelligence in Australian surgeons and surgical trainees
Sara Benson

The interaction between proximal and distal factors in the prediction of cigarette smoking behaviour
Elizabeth Brown

An empirical investigation of mood regulation: Description, structure and mood correlates.
Sarah Buckingham

The hoarding symptoms of obsessive compulsive disorder: influences on the development and maintenance of hoarding behaviour
Judy Buitenhuis

Impulsivity, reward sensitivity and motivations to use Ecstasy: An integrative study
Sarah Egan

The construct validity of the Mayer-Salovey-Caruso emotional intelligence test (MSCEIT) in an Australian sample
Fiona Erskine-Fowler

Motivation to smoke: the role of personality, smoking outcome expectancies and nicotine dependence.
Ashleigh Fleming

Narratives of living with Hepatitis C: Diagnosis, impact and adjustment
Margaret Fry

Public reactions and perceptions associated with three neuro-degenerative diseases: Parkinson's, Alzheimer's and Multiple Sclerosis
Angela Grouios

Parents' meta-emotion philosophy, emotional intelligence and relationship to adolescent emotional intelligence
Christiane Kehoe

Trauma response, worldview and resilience after media exposure to traumatic world events
Timothy Lambert

The role of self-objectification, gender role orientation, perfectionism, and reasons for exercise in male body dissatisfaction
Serafino Mancuso

Does emotional intelligence mediate the relationship between conflict and relationship satisfaction in romantic relationships?
Breeanna McCarthy

Classification of the autogenous-reactive model of obsessions: A multidimensional measurement approach
Claire McCarthy

Compartmentalization and vulnerability to Bipolar Disorder
Eamonn McCarthy

Impulsivity, reward sensitivity and eating patterns among nonclinical women
Cindy Melksham

Sensitivity to reward and rash impulsiveness predicting alcohol use: The mediating effect of drinking motives
Susanna Mullner

Surfing your way through exam stress: Internet use and its relationship to exam preparation
Hailey Platt

Cognitive determinants of testicular self-examination behaviour in a young Australian sample
Sujatta Rajendran

Vulnerability to Bipolar Disorder and the sleep-wake cycle
Sarah Sherwell

Giving wisdom back to the people: Laypeople and their laywisdom
Matthew Taylor

Body Image and weight concerns from childhood to motherhood: A qualitative study
Deborah Wilson

Using the Theory of Planned Behaviour to explore individual intentions and behaviours towards posthumous organ donation
Sally-Anne Woodhouse

Bachelor of Arts (Honours) in Social Science

An Evaluation of Transitional TAFE Courses for Young People with Disabilities in Victoria
Sarah Biggs

Is the Trauma in the Listing? Experiences of Stress and Trauma in Domestic Violence Work
Janene Evans

The Social Embeddedness and Collective Action of Yarraville Village Traders: A Small Business Case Study
Lee Glezos

Class, Crime and Capital: an Investigation into the Causes of Property Crime in Australia
Alexander Heathcote

Retirement Villages: an Exploration of Identity for Ageing Australians Living in an Age Homogenous Environment
Maureen Hindle

The Social Experience of Panic Disorder
Roslyn Le

Representations of DNA Paternity Testing in Australian Newspapers: Three Case Studies
Paula-Lea Wood

Bachelor of Science (Honours) Biochemistry/Chemistry

The antibacterial activity of traditional medicinal plants
David Cooper

Particle association effect on hydrochlorous acid inactivation of bacteria using Propidium Iodide
Nazile Kazemi

Development of biodegradable polyurethanes for dermal applications: the effect of Phosphocholine on mechanical properties, degradation and cell compatibility
Donna Menzies

Bachelor of Science (Honours) in Chemistry

Antibacterial activity and chemical composition of *Taxus baccata*
Jie Zhang

Investigating antibacterial activity and active compounds in medicinal plants
Tiekun Liu

Bachelor of Science (Honours) in Biotechnology/Biochemistry

The toxic effects of Rotavirus non-structural Protein 4 (NSP4) expression on *Escherichia coli* host cells
Abdi Hamid Moalin

Isolation and characterization of plasma membrane intrinsic proteins in wheat
Damian Cockfield

Bachelor of Science (Honours) Psychophysiology

Dissociation and handedness: a trans-cranial magnetic stimulation approach
Joel Ashworth

Exploring the relationship between eye movement desensitization and reprocessing (EMDR) and the creation of false memories
Lauren Brown

Treatment outcomes for juvenile sex offenders: a review of the literature
Chantelle Crossland

Age associated changes in working and episodic memory: a review of the elctrophysiological evidence
Helen MacPherson

The changing face of dyslexia: towards a multidimensional explanation of reading disability
Isobel McKinnon

Acknowledging obstructive sleep apnoea in post-traumatic stress disorder
Jennifer Moral

The cognitive changes associated with normal aging and mild cognitive impairment
Rebecca Neate

The relationship between emotional intelligence and social anxiety disorder: a review
Karen Nolidin

The role of hyperpathia in the diagnosis of central neuropathic pain following stroke
Emma Pitts

Hypnosis: dissociation or focused attention? A review of evidence
Kate Stone

Confounds in clinical depth of anesthesia monitoring with co-administration of nitrous oxide
Jeggan Tiego

On confirmation bias and the need for future neurophysiological research
Tom Zurek