Topics for Honours, Masters and PhD research

Research Projects 2012

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Responsible, conscientious students with well-developed interpersonal and written communication skills are sought for these projects.

It is expected that candidates will draft, under supervision, a paper for publication in a scientific journal. This is the first step in your research career!

Research projects

A wide range of potential projects are available, some of which are listed in the following pages.

Most projects can be tailored to Honours, 12 point Masters Project, 24 point Masters dissertation or PhD scope, indicated by *.

Projects of specific lengths are indicated **.

Although some projects use linked data and require a high degree of analytical aptitude, there are many other projects that require different skills.

Given the scope of projects available, a great project can be found to match your own interests and skills.

Want to know more?

Contact Graduate Research Coordinator:
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Weight Loss and Health Outcomes Following Obesity Surgery*
Supervisor: Assoc/Prof David Preen, Centre for Health Services Research (CHSR)

Background: Surgical procedures such as gastric bypass, laparoscopic sleeve gastrectomy and laparoscopic gastric banding are becoming increasingly popular for obesity treatment. It is suggested that there is insufficient screening of potentially unsuitable patients for these procedures, such as those with compulsive eating disorders or reduced satiety. If bariatric surgery is the favoured model of care for morbidly obese patients, who have exhausted all other options, more research is needed on the benefits and risks.

Outline: A range of discrete projects are available, investigating the impact of different forms of obesity surgery on a variety of health outcomes. Some of the options include:

- A comparison of different bariatric surgery procedures in terms of body composition changes, complications and quality of life.
- The effect of bariatric surgery on hormonal regulation, blood pressure and blood biochemistry.
- The impact of bariatric surgery and weight loss on libido and sexual health.

Reasons and Implications for Regional Differences in Colonoscopy in WA*
Supervisor: Assoc/Prof David Preen, CHSR

Background: Colonoscopy is used to investigate gastrointestinal symptoms. In WA, colonoscopy is one of the most commonly performed invasive procedures in hospital. Anecdotal observation suggests that colonoscopy is commonly used for screening and may result in lower mortality from colorectal cancer. Earlier work has shown that the use of colonoscopy for rural Western Australians is lower than for their metropolitan counterparts.

Outline: Linked hospital admission data will be used to determine regional differences in colonoscopy in WA between 1991 and 2002. The aim is to identify factors that may account for this trend of lower procedure rates in rural WA for specialised interventional procedures, which has also been shown for cataract surgery, prostate surgery and treatment of kidney stones.
Uptake of treatment for sleep apnea in a community-based screening study of sleep disordered breathing **
Supervisors: Clin/Assoc/Prof Alan James, West Australian Sleep Disorders Research Institute SCGH, W/Prof Matthew Knuiman & Dr Michael Hunter, Busselton Health Study

Background: Obstructive sleep apnea (OSA) is characterised by recurrent episodes of partial or complete occlusion of the upper airway which can result in hypoxemia and frequent arousals from sleep. OSA is associated with impaired cognitive and psychomotor functioning, reduced quality of life measures, increased risk of injury and of hypertension, stroke, cardiovascular disease and insulin resistance.

Outline: This project will investigate the factors influencing the uptake of therapy or intervention for OSA in a semi-rural community cohort, identified from studies undertaken as part of the Busselton Health Study. The study will aim to:
- investigate whether in-home screening promotes treatment or lifestyle changes
- describe successful OSA therapy factors and the health and quality of life effects
- identify barriers to treatment

**Suitable for MPH 24 point dissertation.

Environmental exposures and children’s health study*
Supervisor: Asst/Prof Peter Franklin, Occupational Respiratory Epidemiology (ORE)

Background: The Peel children’s health study investigates psychosocial, biological and environmental factors that may impact on child health and wellbeing. Central to the study is the recruitment of a large birth cohort of up to 1000 children and pregnant women. This provides an ideal opportunity to investigate very early (pre- and early post-natal) influences on child health.

For environmental exposures this study will focus on pollutants in and around the home. Environmental data that will be collected includes house dust, air pollutants and various biomarkers of environmental exposures. House dust will be analysed for metals, allergens and endotoxin. Air pollutants will be measured both inside and outside the home. Finally, maternal and infant blood and/or urine will be analysed for biomarkers of exposure to cigarette smoke and heavy traffic. There are a number of opportunities within the Peel study for postgraduate or honours research projects.
Environmental Contributors to Disease Progression in Adults with Chronic Obstructive Pulmonary Disease*
Supervisors: Asst/Prof Peter Franklin & Clin/Prof Bill Musk, ORE & Prof Grant Waterer, School of Medicine and Pharmacology RPH Unit

Background: Air pollution may be an important trigger for exacerbations of disease in patients with chronic obstructive pulmonary disease (COPD). Two of the most important contributors to poor air quality are traffic (outdoor air pollution) and unflued gas heaters (indoor air pollution).

Outline: The COPD-linkage program is a community based, chronic disease management program with over 500 patients involved. All patients have full lung function testing, walk testing, quality of life assessment and medical review at entry into the program, and repeat spirometry and walk testing at three-monthly intervals. The aim of the study is to determine potential exposure to indoor and outdoor air pollution and the extent that these exposures can contribute to disease progression in these patients.

Lung Function Decline in Asbestos Exposed Individuals; Relationship with radiological abnormalities*
Supervisors: Asst/Prof Peter Franklin & Clin/Prof Bill Musk, ORE

Background: Exposure to asbestos is a cause of asbestosis and of a number of benign radiographic pleural abnormalities such as pleural plaques, thickening and effusions. Asbestosis is associated with impaired pulmonary function but the effect of the other abnormalities on pulmonary physiology has not been fully established. The aim of the proposed study is to assess the relationship between radiographic abnormalities, with and without disease, and pulmonary function in asbestos exposed cohorts.

Outline: This study is based on analyses of over 20 years of existing data from the ongoing Asbestos Review Program (ARP) participants. Analyses will focus on lung function changes prior to and after the development of radiographic abnormalities. Based on chest x-rays, individuals will be categorised into four groups: asbestosis, diffuse pleural thickening, pleural plaques or no radiographic abnormalities. Both cross-sectional and longitudinal analyses will be conducted.
**Dog Ownership and Children’s Physical Activity**

*Supervisor: Asst/Prof Hayley Christian, Centre for the Built Environment and Health (CBEH)*

**Background:** Physical inactivity and rising levels of overweight and obesity are a public health concern. Dog ownership is associated with higher levels of physical activity in adults but few studies have examined the physical, social and emotional health benefits associated with pet ownership in children.

**Outline:** The study aim is to examine the association between dog ownership and physical activity in children using data from the Travel, Environment and Kids (TREK) Project, which compares the active transport habits of schoolchildren and is examining children’s and parents’ concerns for traffic safety and the neighbourhood environment. Physical activity behaviour, socio-demographic, social and physical environmental data will be examined in association with dog ownership. There is scope for qualitative research to be conducted with parents and children on motivators and barriers to dog walking and dog-centred play.

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**The Social and Community Health Benefits of Dog Ownership**

*Supervisors: Asst/Prof Hayley Christian & Assoc/Prof Lisa Wood, CBEH*

**Background:** Pet ownership is associated with higher self esteem and decreased loneliness, social isolation, stress and depression. Pet benefits are seen at individual, family and community levels. Further study of the links between dog ownership and social and community health is needed, as is an understanding of how they are mediated.

**Outline:** The project aim is to examine the association between dog ownership, change in dog ownership over time, dog walking and measures of community health and social capital and cohesion. RESIDential Environments (RESIDE) and Dogs And Physical Activity (DAPA) project data will be used. RESIDE aims to evaluate urban design impact on health, particularly with respect to walking, cycling, public transport use and sense of community. DAPA considers the physical activity people share with their dog and the environmental and individual factors affecting this. There is scope to conduct qualitative community research.
Public Risks From and Management of Fire damaged Asbestos Structures*
Supervisors: Assoc/Prof Alison Reid, WAIMR, Assoc/Prof Jane Heyworth, SPH & Mr John Howell, Environmental Health Directorate, Department of Health

Background: Asbestos was extensively used in building until the mid-1980s. Most houses of this period contain asbestos. The release of asbestos fibres when such buildings are disturbed poses a potential risk to the public. Fire damage to asbestos differs from other forms of physical damage in that explosive breakage occurs during fires as well as powerful air movements and physical changes to the mineralogical form of the asbestos. There is a need to better assess the risks for proper management strategies to be developed including dealing with community perceptions of the risks.

Outline: A thorough literature review will be undertaken including accessing records and reports and there will be an opportunity to conduct interviews and seek expert information. Analysis of held samples of fire damaged asbestos will be managed and surveys conducted of the asbestos contamination from any fires that occur during the lifespan of the project. Outcomes would include conclusions as to the qualitative risks to the public as the result of a range of typical fire events and recommendations on how these risks would be best managed. Ideally, guidelines for the management of these risks would be developed with a view to them being implemented in the State. Some background in physical sciences such as chemistry may be an advantage.

Topics in Health Economics**
Supervisor: Prof Elizabeth Geelhoed

There is the opportunity to undertake honours in the area of health economics. Please make an appointment to see Professor Elizabeth Geelhoed to discuss potential projects in this area.

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**Suitable for Honours project
Measles Elimination in Europe and Western Pacific Regions; Prospects and challenges*
Supervisor: Prof Niyi Awofeso

Background: Measles is a highly contagious viral disease, preventable by immunization and affecting mostly children. Most people recover in 2–3 weeks. However, serious complications can occur including blindness, encephalitis, severe diarrhoea and pneumonia, particularly in those malnourished or with reduced immunity. In 2005, the World Health Organization (WHO) set a target date of 2012 for regional measles elimination, recently reset to 2015. Key strategies include very high (≥95%) vaccination coverage, high-quality case-based measles surveillance, and access to an accredited measles laboratory network for case testing and genotype identification. While some remarkable gains have been made, challenges and outbreaks persist.

Outline: Designed for students interested in adopting Systems Thinking approaches to public health issues, the study entails developing an evidence base for measles immunization progress and obstacles. Practical strategies will be formulated for nations in the two WHO regions for achieving (or getting closer to) their respective measles elimination targets.

Assessment of Community Noise Concerns in Suburbs of Perth*
Supervisors: Assoc/Prof Jane Heyworth, Environmental Epidemiology (EE) & Assoc/Prof Alison Reid, Centre for Medical Research/ORE

Background: Noise is a health issue that is increasingly becoming one of community concern. Unwanted noise impacts on quality of life by disrupting individual activities including concentration, relaxation and sleep. However there are limited recent data on the extent to which people are concerned about noise and whether this varies by source.

Outline: This project will include a review of the health effects of noise and collation of existing data on noise levels across Perth and noise annoyance in Australia. In addition, a noise questionnaire will be developed and used to survey residents in selected suburbs across Perth. The survey will address main sources of noise in the community and the extent to which these impact on annoyance, quality of life or self-reported health effects.
Australian Aboriginal Pharmacopoiea - *Duboisia myoporoides*
Supervisor: Prof Niyi Awofeso

Background: Commonly known as Soft Corkwood, *Duboisia myoporoides* is an alkaloid-rich Indigenous Australian herbal medicine whose leaves have been harvested commercially for the extraction of scopolamine, often used for motion sickness. Scopolamine is a highly toxic drug and is usually prescribed in very small dosages. Prior to colonialism, Indigenous Australians applied corkwood-derived scopolamine’s neurological effects for hunting animals. It was also reportedly used in the treatment of gastric ulcers. *D. myoporoides* is probably the most important of the Australian native medicinal plants.

Outline: This study is designed for students interested in Australian Indigenous herbal medicine as well as the processes for transforming traditional therapies and herbs into mainstream chemotherapy. Topics to be covered include Indigenous medicine in Australia, pharmacology, events which led to the ‘discovery’ of *D. myoporoides* by European scientists during World War 2, and current uses of corkwood in modern medicines.

Evaluation of Rottnest Island’s Sustainable Development Projects*
Supervisor: Prof Niyi Awofeso

Background: Rottnest Island (RI) is one of the top 10 tourism destinations in WA. The 2009-2014 management plan places high priority on sustainable development which “meets the needs of the present without compromising the ability of future generations to meet their own needs.” The Development Planning Guidelines state “all proposals for development on Rottnest Island must demonstrate how the development is environmentally, socially and economically sustainable.” Over the past decade major development projects have been introduced but are yet to be evaluated.

Outline: This project aims to evaluate three sustainable projects on RI; (1) wind-powered electricity generation; (2) water desalination and recycling; (3) forestry regeneration. Evaluation will entail documenting progress on specified sustainable development projects in the three areas, estimating efficiency and national and international benchmarking. Authorisation to conduct this study must be secured from the Rottnest Island Authority prior to commencement.
Perceived Playgrounds Risks – What is the Evidence?*
Supervisors: Rsch/Assoc/Prof Lisa Wood & Rsch/Asst/Prof Karen Martin, CBEH

Background: Restrictions in children’s independence to attend local playspaces have arisen due to concerns that children are at undue risk of injury or abduction. Evidence suggests that risk and injury perceptions far exceed reality and that children are disadvantaged in leading an increasingly “cottonwool childhood”. Preliminary research indicates that playground injury rates are low and that abduction is almost always from a relative (custody issues) or known perpetrators.

Outline: This project will involve a literature review on children’s injury from playgrounds, pedestrian, cycling and other causes. Safety, injury and playground-related litigation data will be analysed, including any detected socio-economic differences. An information brochure will be developed giving evidence-based information for parents and other stakeholders to make informed decisions on real vs perceived risk and strategies to address safety issues.

Factors Influencing Survival From Colorectal Cancer*
Supervisors: Mr Terry Boyle, WAIMR/SPH, Prof Lin Fritschi, WAIMR & Assoc/Prof Jane Heyworth, EE

Background: In WA around 200 males and 200 females died of colorectal cancer in 2006: the third highest cancer deaths in both males and females. Treatment and tumour stage are the main predictors of death from colorectal cancer. In recent years lifestyle factors (such as physical activity and diet) effects on prognosis have received some attention, but research in this area is limited.

Outline: The WA Bowel Health Study (WABOHS) was a case control study in which 918 colorectal cancer cases and 1021 age- and sex-matched controls participated, with data collected on demographic factors, diet, smoking, physical activity, occupation, alcohol and medication. The case participants were linked for follow up at the end of 2010. Treatment information will be collected where possible (about 50% of the cases). A range of factors, other than physical activity, and their impact on survival may be chosen for study.
Dexamethasone Use in Palliative Care Patients: A prospective study*
Supervisors: Assoc/Prof Rhonda Clifford, School of Biomolecular, Biomedical and Chemical Sciences (SBBCS) & Prof Elizabeth Geelhoed, SPH

Background: Dexamethasone is widely used to relieve suffering in palliative care patients, but evidence-based guidelines for its use do not exist. Dexamethasone can cause a significant increase in blood glucose levels, leading to adverse effects of hyperglycaemia such as confusion, polyuria, malaise or dizziness, indicating that blood glucose monitoring may be required in symptomatic patients.

Outline: The aim is to determine if blood glucose levels are significant increased by dexamethasone, with a view to making recommendations on whether it should be best practice to monitor blood glucose levels in patients on this medication. Blood glucose levels in palliative care patients on dexamethasone therapy and experiencing hyperglycaemia will be measured and demographic data collected including medications and medical conditions to determine if there are other factors affecting blood glucose levels. Ethics approval has been granted and field work is at Bethesda Hospital and SJOG Murdoch.

Particulate Matter in al fresco Dining Areas and Beer Gardens Before and After the Implementation of the Tobacco Products Control Amendment Bill**
Supervisor: Asst/Prof Peter Franklin, ORE

Background: In September 2009 WA Parliament passed the Tobacco Products Control Amendment Bill 2008 (TPCAB) prohibiting smoking in all al fresco dining areas and in 50% of outdoor beer gardens attached to pubs. Airborne concentrations of particulate matter were measured in al fresco dining areas, cafes and beer gardens in the Perth Metropolitan area both before and after implementation of the TPCAB to determine if there was a reduction in exposure to particulate matter.

Outline: Monitoring for airborne particulate matter was conducted on 3 occasions in a sample of 27 venues that originally permitted smoking in outdoor areas. Measurements were collected 6 months and 1 month prior and 6 months after the implementation of the TPCAB. Global and comparative analysis of the data over the three time periods will be undertaken, with variables and covariate factors analysed.

**Suitable for 12 point project.
Reproductive Hazards of the Workplace*
Supervisors: Dr Adeleh Shirangi & Prof Carol Bower, Centre for Child Health Research (CCH), UWA & Prof Lin Fritschi, WA Institute for Medical Research (WAIMR)

Background: Workplace reproductive hazards can be chemicals, drugs, alcohol, conditions (heat, vibration, noise, radiation, long work hours, physical and psychological stress) or biological hazards. Hazards may affect female or male reproductive systems (reproductive toxicity) and/or the fetus (developmental toxicity). The causes for much of this are unknown. Short term exposures during a critical period can result in long term health effects. Thus early risk recognition and intervention are important.

Outline: Students will use a Job Exposure Matrix to assess occupational exposures in relation to specific reproductive outcomes such as birth defects, weight, gestational length, preterm birth, complications and loss, as well as to selected cancers. This information about reproductive outcomes, cancers and other information including confounding factors will be requested from the WA Data Linkage Unit. Application of this JEM in a linkage study will provide preliminary evidence for further studies taking into account more detailed parental occupational exposures.

Water Contaminants and Pregnancy: An exposure assessment and biomarker validation study*
Supervisors: Assoc/Prof Angus Cook & Res/Asst/Prof Kimberley McAuley, Ecology and Health (E&H)

Background: Trihalomethanes (THMs) are common disinfection by-products (DBPs) produced during the disinfection of water supplies, particularly in Perth due to the high organic molecule levels in groundwater. THMs are potential risk factors for adverse pregnancy outcomes including birth defects. Exposure occurs through water ingestion, inhalation or dermal absorption through showering and swimming.

Outline: The study aims to test whether THM exposure in Perth can be modelled in view of water supply variations and uses and to evaluate the blood folate/THM exposure relationship using an interactive model. Pregnant women from two Perth regions with different THM concentrations will be studied. Absorption will be estimated via a water use diary, a questionnaire and swimming pool, tap and urine sample analyses plus blood folate levels. The analyses will inform a major NHMRC cohort study and assist development of a DBP exposure matrix superior to any currently existing for maternal populations.
Maternal Occupational Exposures in Relation to Birth Weight and Gestational Age in Veterinary Practice*
Supervisors: Dr Adeleh Shirangi & Prof Carol Bower, CCH

Background: Birth weight is an indicator of perinatal and infant health: low birth weight is associated with increased infant morbidity/mortality and risk of various diseases in later life plus adverse outcomes such as behavioural, developmental and intellectual disabilities. Occupational exposures may be associated with low birth weight but evidence is inconclusive. Veterinarians have potential exposure to known hazards such as physical hazards (eg radiation, stress); chemicals (gases, pesticides, drugs); and biological hazards (zoonotic diseases). Some are listed as teratogenic and mutagenic or suspected carcinogens. All these exposures may result in low birth weight/intra uterine growth.

Outline: A literature review examining the association of occupational hazards in relation to birth weight and gestational age in veterinary practice will be carried out. Data from a reproductive health study among Australian female veterinarians (n=1100) is available for analysis to determine whether occupational hazards are associated with low birthweight.

Reproductive Related Attitudes and Behaviors in Australian Female Veterinarians*
Supervisors: Dr Adeleh Shirangi & Prof Carol Bower, CCH. Advisor: Prof Neville Bruce, UWA

Background: We have conducted a reproductive health study among a cohort of Australian female veterinarians (1100 female veterinarians) to establish baseline demographic characteristics and to determine reproductive related attitudes and behaviours in female veterinarians. We would also like to investigate whether there is an association between reproductive-related behaviour and infertility or sub-fertility in female veterinarians.

Outline: The aim of this project will be to investigate what veterinarians think about having children, to report menstrual cycle characteristics and prevalence of fertility and sub-fertility among this group. The student who undertakes this project will review the literature in this area, analyse the data already collected from this project and write a paper for publication.
Eye and vision disorders are a major cause of morbidity, with almost half a million Australians visually impaired in both eyes and over 50,000 blind. The major causes of blindness in Australians aged 40+ are glaucoma, macular degeneration, diabetic eye disease and cataract. In Australia, the total cost of vision disorders to the community was estimated in 2004 at $9.8 billion.

As a major problem in the community, eye and vision epidemiological research has the potential to significantly contribute to improving health and well-being by providing the evidence for clinical decision making and creating better policy by informing policy makers on the effectiveness of current programmes.

Interested students will play a major role by undertaking one of the many projects available and it is envisaged that students would take a primary role in preparing their work for publication.
**Fitness to Drive Knowledge in Eye Clinic**
This project would be of interest to a student seeking survey methodology experience. It will involve the design, administration and analysis of a suitable survey to gauge current knowledge amongst eye clinic patients about fitness to drive with visual impairment and advice provided by health care professionals.

**Glaucoma Epidemiology**
Using newly available linked Commonwealth pharmaceutical data, it will be possible to conduct large studies into glaucoma on the entire WA population. Potential projects using these data include trends in glaucoma medication use, trends in glaucoma surgery, persistency with medication use, medication interactions and side effects.

**Systematic Review on the Risks for Postoperative Endophthalmitis**
Postoperative endophthalmitis is uncommon but one of the most serious and potentially sight-threatening complications of cataract surgery. Many studies on risk factors are small, resulting in inconsistent conclusions. This project would involve a literature review and synthesis of the risk related evidence using pooled data and meta-analysis.

**Seasonality and Retinal Detachment**
A number of reports suggest an increased risk of retinal detachment during winter. The WA Data Linkage System can be used to identify all cases of retinal detachment in WA since 1980. This would provide a large population-based cohort over an extended time period with which to test the hypothesis that retinal detachments have a seasonal basis, using time-series analysis.
Epidemiology of Blinding Eye Diseases
The major causes of blindness in Australia are glaucoma, age-related macular degeneration and diabetic eye disease. This is a major new project seeking first to validate the coverage and accuracy of the current blind registry data. It will then be possible to carry out a comprehensive epidemiological study into blindness in WA. It is also proposed to compare the utilisation level of health service to determine the economic cost of blindness in the health system.

Post-traumatic and Endogenous Endophthalmitis
Endophthalmitis is a serious infection of the internal ocular structures. Most cases occur after surgery but endophthalmitis can also occur after penetrating eye injuries or with systemic infection. This project involves the clinical epidemiology description of a cohort of patients with either post-traumatic or endogenous endophthalmitis, undertaking a review of patient records and performing descriptive and basic statistical analysis.

Community Approaches to the Conservation of Remnant Bush Areas in the Perth Metropolitan Area*
Supervisor: Dr Sue Bailey, Social Work and Social Policy (SWSP)

Background: Awareness is increasing on the importance of remnant bush areas for maintaining biodiversity as well as enhancing a sense of community. Trigonometric Park is a 2.2 hectare remnant bush area on a limestone outcrop in Duncraig and is the highest point within the City of Joondalup (CoJ). The site is classified by the WA Government as a priority to conserve. A community group “Friends of Trigonometric Park” (FOTP) has recently formed to tackle conservation work in concert with the CoJ.

Outline: This project is an exciting chance for a student to be involved in research with community members, the City of Joondalup, UWA and other external funding bodies. FOTP have offered suggestions for projects including; the development of a management plan; assessing community and health benefits of interaction in a Friends group; community education; flora and fauna surveys; seed collection, germination and planting; and a student’s own project of interest. This project will provide experience in community practice in the conservation context with an interested and engaged community group.
State-of-the-Art Cardiovascular Research*
Supervisors: W/Prof Matthew Knuiman, Assoc/Prof Tom Briffa, Asst/Prof Frank Sanfilippo & Asst/Prof Siobhan Hickling

Background: Cardiovascular disease (CVD) is costly and prevalent worldwide. Monitoring and reporting trends in CVD is a national priority health area and is a driver of health policy aimed at improving its healthcare delivery and outcomes.

Outline: Various projects in specific areas are offered. These will involve examining the trends and models of care in CVD prevention, treatment and management and may consider clinical epidemiology, health outcomes, pharmacotherapy, prevention, cost-effectiveness and community engagement. A range of areas include:
- Atherothrombotic disease across the vascular territories
- Monitoring coronary artery disease
- Busselton Health Study
- Management of coronary heart disease in the Indigenous population
- Diabetes and CVD
- Peripheral arterial disease
- Health in Men Study
- Risk Factor Prevalence Study
- Coronary artery revascularisation
- Chronic kidney disease progression and cardiovascular diseases

Topics in Health Promotion**
Supervisor: Assoc/Prof Colleen Fisher

There is the opportunity to undertake honours in the area of health promotion, particularly in the areas of prevention and early intervention in family and domestic violence.

Please make an appointment to see Associate Professor Colleen Fisher to discuss potential projects in this area.

Associate Professor Colleen Fisher
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Tel: 6488 2193

**Suitable for Honours project.
Physical Activity Minimal Intervention Targeting Dog Owners**
Supervisors: Asst/Prof Hayley Christian & Assoc/Prof Lisa Wood, CBEH & W/Prof Matthew Knuiman, SPH

Background: There is growing awareness about the importance of pet ownership to physical and emotional human health. Almost half of all Australian households own a dog.

Outline: There is a three-year PhD project with a full scholarship available, funded by the Petcare Information and Advisory Service and Healthway. This project will involve work with local vets to design and evaluate a minimal intervention dog walking program benefitting both owner and dog. The successful candidate will have the opportunity to work with a highly motivated industry partner, Petcare, and to develop valuable skills in intervention research. **Suitable for PhD project.

Mental Health Well-Being and Field Education*
Supervisors: Asst/Prof Katrina Stratton & Dr Susan Bailey, SWSP

Background: Field Education is a core part of professional education across a range of disciplines, including social work, medicine, nursing, dentistry, teaching, occupational therapy and business. Field Education presents a range of challenges and opportunities for students. The educational, role and time demands of placement mean students are at risk of experiencing stress and vulnerability. The Field Education Team, Discipline of Social Work and Social Policy, in 2011 ran a pilot project to develop mental health wellbeing seminars for students on placement.

Outline: Based on the success of the pilot project, opportunities exist for expanding the use of mental health wellbeing concepts and strategies across disciplines, and outward to other stakeholders in the teaching and learning community such as placement organisations and supervisors. There are also opportunities to expand these to industry. A range of evaluative and action research opportunities exist in developing these streams.
Evaluating Full Service Schools*
Supervisor: Dr Susan Young, SWSP

Background: Full Service Schools (FSS) provide a range of health and welfare related services in or linked with schools located in low Socio-Economic neighbourhoods to address some of the health and welfare needs of children and their families to enable them to take full advantage of their education. FSS are new to WA, having been adopted, in their contemporary form, in the US and the UK over the past two decades. In WA there are two fully functioning FSS with increasing interest being shown by the Education Department.

Outline: Over the past five years a number of programmes have been instituted in FSS which are now beginning to be evaluated. A range of opportunities exist for evaluation.

An Action Research Assessment of the Work of Remote Community Child Protection Workers*
Supervisor: Dr Susan Young, SWSP

Background: Remote Community Child Protection Workers (RCCPW) have been employed in remote locations of WA for eight years to work with communities and Police to help keep children and women in Indigenous communities safe. The Department for Child Protection instituted this programme following the Gordon Inquiry in 2001 which found a lack of coordination between service providers working with Indigenous Communities. One of the responses was to co-locate Police and RCCPWs in communities. An initial evaluation was conducted in 2006.

Outline: The DCP commissioned a research activity which would work with the RCCPWs to identify the micro practices they employed in their roles. The Action Research/Action Learning project has been running for a year to identify with the workers what they consider works with the communities to assist in protecting children. The project is expected to continue into 2012.
Developing an Understanding of Living Apart Together (LAT) Relationships*
Supervisor: Asst/Prof Karen Upton-Davis

Background: LAT relationships (where those in a romantic relationship keep separate addresses) are an increasing relationship form. According to national data there are over 1.1 million people Living Apart Together in Australia. This represents 24% of the supposedly single adult population. Among the reasons for making an active choice to LAT is the increase in autonomy, reduced risk of asset depletion if the relationship breaks down and enhanced ability to manage relationships with others such as children, parents and friends without the intrusion of introducing a new live-in person to the household.

Outline: Exploring the implications of LAT for the individuals involved, for their relationship with each other and for friends and family are possible research directions. LAT also has social policy implications in areas such as health, housing and the environment as care-giving arrangements alter and greater physical resources are required to sustain separate households. Study in any of these areas would make an important contribution to understanding a relationship form that has ramifications for society as well as for the individual.

Long Term Trends in Avoidable Harms and Injuries to Children and Responses to Them*
Supervisor: Assoc/Prof Maria Harries, SWSP

Background: Child protection data is collected routinely in all jurisdictions and began electronically in WA in 1989: a 50-field database was built on the differentiation of reports about ‘harm’ (Child Maltreatment Allegations) and about ‘concerns’ (Child Concern Reports) – a distinction that started to be applied in child protection policy and practice in WA in 1995. The database enabled the linking of reports, decisions, responses and events that followed including outcomes: it was an ‘international first’.

Outline: Using the comprehensive WA database from 1990-2005, the authors are analysing core elements of data about all 100,707 reports about 55,785 children in adversity that were made to the statutory authority during this time. The aim: to gain an overall picture of allegations, substantiations, harms and outcomes to provide a picture of changing practices in child protection, with particular attention to Indigenous children. The findings will be of relevance to child protection services in WA, nationally and internationally.
Male Victims of Intimate Partner Violence*
Supervisor: W/Prof Donna Chung, SWSP

Background: Gender symmetry amongst victims of intimate partner violence is much debated. Research generally shows that it is a gendered phenomenon where the vast majority of victims are female but this has been disputed on ideological grounds and using a range of measures. This study will critically review how the concept of ‘male victim’ has been defined and applied in various research contexts and qualitatively examine how similar or different the experiences and effects are for male victims of intimate partner violence compared to that documented for female victims of IPV.

Outline: This exploratory study funded by the British Academy examines two key aspects. It is a review of the various methodological approaches used in the study of IPV and how the definitions, measurements and sampling procedures used can lead to such wide ranging and contradictory findings. There will be data collected from professionals working with male victims and interviews with male victims to gather information about their experiences, help seeking and effects of IPV on their lives.

Primary Prevention of Violence Against Women through Workplace Health Promotion*
Supervisor: W/Prof Donna Chung, SWSP

People spend much of their adult life in the workplace. Social and cultural values are often reflected and transmitted there: they also provide a site to promote attitudinal change. This study examines how violence against women impacts on the workplace, from workplace sexual harassment, sexist attitudes and behaviour through to employees affected by violence in their personal lives, as perpetrators or victims. Individual employers are promoting domestic violence as unacceptable and providing support to employees but this tends to be piecemeal and it is unclear what works or is promising practice.

Outline: This VicHealth funded evidence review shows the importance in workplace culture of diversity and inclusion to begin to prevent such violence. Approaches trialled internationally by governments, employers, agencies and trade unions are reviewed and elements of good practice noted. This is an emerging field so consideration is given to prevention approaches from other fields and how corporate social responsibility could provide support for the prevention of violence against women.
Nature Contact and Children's Mental Health*
Supervisors: Asst/Prof Karen Martin & Assoc/Prof Lisa Wood, CBEH

Background: Evidence suggests that contact with nature is beneficial to adults’ health and, while more scarce, research is beginning to link nature contact and children’s physical and emotional wellbeing.

Outline: This research could incorporate a cross-sectional survey about the relationship between children’s mental health and time in nature. A small intervention could be developed to assess the impact of introducing increased time in nature into children’s lives (using qualitative data collected from children and parents to assist with developing the intervention).

Is Higher Physical Activity During School Breaks Related to Bullying within the Primary School Setting?*
Supervisor: Asst/Prof Karen Martin

Background: The research questions to be explored include: does the physical activity environment (physical, social and policy e.g. sport culture, unlimited access to sports equipment etc) impact upon bullying behaviour at school? Does less bullying occur in schools in which there is higher physical activity during school breaks or does participation in competitive sports during school breaks support bullying behaviour?

Outline: This study would involve secondary analysis of The ACTIVE Schools Project data, which includes bullying questions within a project which explored the physical activity environment of 27 Perth primary schools and physical activity data from over 1000 students. This data is ready for analysis.
Children were asked questions to ascertain their frequency of bullying and being a victim of bullying. Children also wore accelerometers to ascertain their physical activity participation for seven days. Aspects of the schools environment were also measured.
Raine Study: Cardiovascular-Metabolic PhD Projects**
Supervisor: joint Raine Study and SPH staff

Background: Launched in 1989, the Raine Study examined ultrasound imaging of 2900 pregnant women recruited at King Edward Memorial Hospital Perth, WA. Women were assessed at 18 weeks of pregnancy and again at various time points until 38 weeks gestation. Information was collected on the parents including exercise, diet, work and health. The children were assessed at birth and followed up at 1, 2, 3, 5, 8, 10, 14, 17 and the current follow up at 20 years of age, measuring height, weight, development, lifestyle habits, cardiovascular measures, medical conditions and illnesses. At each follow-up information has also been collected from the parents or primary carer.

The Raine Study has amassed one of the most unique and important collections of data in the world and is one of the few where information has been collected on the pregnant mother and subsequently the child through to adolescence and adulthood. Information collected over 20 years ago has provided a better understanding of how events during pregnancy, as well as in childhood and adolescence, affect later health and development. The Raine Study has amalgamated an extensive database on demographic, developmental, psychological, physical and many other factors around the life of children and families. It provides a unique source of information regarding complex causal pathways to health outcomes. Scientific detail from the Raine Study has also been widely used by the media.

Outline: The Cardiovascular-Metabolic group at Royal Perth Hospital has a number of studies planned examining the influence of maternal, birth, anthropometric and lifestyle factors on cardiovascular and diabetes risk factors in the Raine participants, both cross-sectionally and longitudinally. If you interested in undertaking a PhD and would like to work with the Raine Study team please contact Winthrop Professor Lawrie Beilin (92240258), Professor Trevor Mori (92240273) or Assistant Professor Rae-Chi Huang (0402 131 555) for further information. This project would be performed under joint supervision by academic staff affiliated with the Raine Study and from the School of Population Health.

**Suitable for PhD project.
Compassion Fatigue in Lay Carers*
Supervisors: W/Prof Desley Hegney and Assoc/Prof Vicki Drury

Background: The poor physical and mental health of lay carers has been well documented in national and international literature. In all studies the cost of caring has been measured using quality of life scales (eg SF12) or carer burden scales. To date there have been no studies which have examined the concept of compassion fatigue (CF) in lay carers. CF is seen to be the opposite of compassion satisfaction and a pre-cursor to burnout.

Outline: The project will involve a systematic review of the concepts of depression, anxiety, burden and burnout in lay carers. A small number of lay carers will be asked to participate in a validation of the Professional Quality of Life Tool (ProQoL), used to measure compassion fatigue, compassion satisfaction and burnout in health professionals. The validation will involve data collection both quantitatively (via the tools) and qualitatively (focus groups/interviews). The data will feed into several other studies being conducted around lay and health professional carers with the view to the design of an intervention/s to prevent and/or manage CF.

Compassion Fatigue in Health Professionals
Supervisor: W/Prof Desley Hegney

Background: The concept of compassion fatigue (CF) emerged in the early 1990s to explain a phenomenon observed in emergency department nurses. Health professional work involves supporting and caring for the ill, traumatized and dying. For some, the emotional investment becomes over-taxing and they become less able to manage compassion and empathy. CF is a precursor to burnout, associated with emotional exhaustion, depersonalisation and an inability to work effectively. Linked to post-traumatic stress syndrome, CF develops over time resulting in changing behaviour and loss of capacity to interact and engage with others for whom they have responsibility.

CF symptoms are varied and include sadness, depression, anxiety, intrusive images, flashbacks, numbness, avoidance behaviours, cynicism, poor self-esteem and survivor guilt. CF reduces productivity, increases sick days and staff turnover and leads to patient dissatisfaction and risks to patient safety. Compassion is central to good nursing care but there are few studies on CF in nurses, none in Australian nurses.
Outline: The project will involve a systematic review of the interventions to prevent CF in health professionals, using the Joanna Briggs Institute for Evidence Based Practice systematic review tools. The review and protocol will be published on-line in the Joanna Briggs Institute Library and a paper published in a peer-reviewed journal. The review links to a larger study on CF in health professionals and other roles for students in this study are available on request.


Background: Diabetes mellitus is a global health concern. A frequent complication is diabetic retinopathy (DR): up to 15% of newly diagnosed diabetics show some evidence. A common cause of vision loss, DR complications can be minimised via screening and education. Diabetes support and management in primary healthcare settings is through GPs and nurses.

Outline: This study will examine and describe staff knowledge, practices and attitudes about DR among nurses providing diabetic education in general practice.

A Palliative Approach to CFF Management
Supervisors A/Prof Vicki Drury, A/Prof Helene Metcalf

Background: In Australia, cardiovascular disease is the leading cause of death and second leading cause of disease burden. Congestive cardiac failure (CCF) is one of these diseases. Largely a disease of the elderly, it results in diminished functional capacity, psycho-social distress and increased health resource use. The CCF prognosis is worse than for most cancers yet patients are generally denied benefits of a palliative approach such as spirituality, quality of life, emotional issues and relationships. It is estimated that only one in five CCF patients receives focused CCF management post hospital discharge. Studies show that effective self-management is compromised in patients with CCF due to lack of knowledge about the disease, prognosis and management strategies.

Outline: A palliative approach to CCF has been recommended in the US and EU but remains relatively new in Australia. In WA a gap in palliative service provision has been identified. This project aims to develop, implement and evaluate a patient-centered self-management palliative care program for a pilot group of patients in the community.
Building Capacity in Palliative Care Clinical Training*
Supervisor: Assoc/Prof Rosemary Saunders

Outline: The project involves clinical placement of health professional students within an inpatient palliative care unit and a community palliative care service to provide them with an opportunity to work within a multidisciplinary team, participate in care delivery to a range of palliative patients, and experience assessment, symptom control and care in the terminal phase of life (in accordance with Australian National Palliative Care Guidelines).

Beyond the Teaching Nursing Home*
Outline: This Community Partnership of Learning and Care project involves development of an unoccupied nursing home, co-located with an existing residential aged care hostel and independent living units, to create a clinical learning environment for health professional students and aged care staff. This community of learning will have a focus on evidence based practice and care, by engaging people residing at the facility and the wider local community in health professional education.

Both projects are funded by Health Workforce Australia. There are several studies that could be linked to either project. Please contact Rosemary Saunders to discuss potential projects and supervisors: Phone: +61 8 6488 8108 Email: rosemary.saunders@uwa.edu.au

Knowledge, attitudes, perceptions and practices of RNs towards last offices*
Supervisor: Supervisors A/Prof Vicki Drury, W/Prof Desley Hegney

Background: Providing responsive, empathetic care to the deceased patient and their families is a challenging and complex aspect of nursing care. The last offices is the final act of caring that a nurse can provide to patients and their relatives. However there is little research available that explicates the best evidence for the complex multifaceted protocol of last offices. Indeed the practice, attitudes and perceptions of nurses performing this task remains cloaked in mystique and tradition. It appears that the preparation of the deceased patient involves activities based upon traditions and rituals that have been handed down from nurse to nurse rather than being evidence-based. As a leading university, UWA must ensure that the procedures taught to nursing students are based on evidence. A preliminary inquiry into current practices show discontinuities between institutions and countries in the way that last offices are performed. Additionally, there is nothing within the literature on the need (if any) for psychological support for nurses who perform the last offices.

Outline: The purpose of this study is to describe and compare the knowledge, attitudes, perceptions and clinical practices of Registered Nurses in WA in the provision of last offices.
Research Groups and Centres at SPH

Our research strengths include a strong evidence-based approach to services and health program evaluation. We have a proven record of achievement in preventative, clinical and occupational epidemiology and have been instrumental in setting world standards in population health databases through record linkage.

- Centre for Health Services Research: A leader in its field through its work with linked medical and health data and the evaluation of health services, patient safety, surgical care and pharmaco-epidemiology.

- Centre for the Built Environment and Health: A multi-disciplinary centre of policy-relevant research that builds capacity and influences planning and urban design policy and practice, to create healthy and sustainable communities.

- Occupational Respiratory Epidemiology: Investigates cancer and respiratory disease outcomes due to occupational and environmental exposures, in particular asbestos, silica and the aluminium industry.

- The Cardiovascular Research Group: Aims to reduce the burden of disease through research into trends and determinants of acute events, treatment, management and outcomes.

- Environmental Epidemiology: Investigates cancer causes and methods of prevention including protection from exposure to carcinogens.

- Busselton Health Study: Manages and maintains the Busselton Health Study database, one of the longest running epidemiological studies in the world.

- Ecology and Health: Investigates the relationship between ecosystem health and human health.

- Women’s Health: Has a particular focus on reproductive health, childbirth and chronic illness including cancer and the health impacts of caring.

- Aged Care Research and Evaluation: Evaluating the Commonwealth-funded Aged Care Assessment Program (ACAP) in WA.

- Nursing Research: Undertaking key research in maternal and child health, mental health, acute care nursing practice and nurse-sensitive outcomes.

- Social Work and Social Policy: Covering a broad range of issues including child and family welfare, community practice and child protection, early childhood trauma, adolescent suicides and Indigenous and cross-cultural issues.

There is the opportunity to undertake research in most fields in Population Health. Contact us and we'll put in you touch with the right supervisor for your interests: matthew.knuiman@uwa.edu.au