School of Population Health

Research projects
2016

Topics for Honours, Masters and PhD research projects
Research projects now available at SPH

As a world-class research university, UWA offers you research opportunities of the highest calibre. You’ll work closely with an expert supervisor on a specific research topic to produce a thesis of significant academic scholarship and originality.

Research training at the School of Population Health can lead to the award of undergraduate Honours or a postgraduate coursework Master of Public Health (MPH) degree with 12 point project or 24 point dissertation degree. Our postgraduate research degrees can lead to the award of a Master or Doctor of Philosophy (MPhil or PhD).

Our research students will draft, under supervision, a paper for publication in a scientific journal - this is the first step in your research career!

How does research training at SPH work?

You’ll work with both academic and clinical personnel to investigate an important and topical area of health care. Responsible, conscientious students with well-developed interpersonal and written communication skills are sought for these projects.

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?

If you are interested in Honours and Honours projects...
Contact our Honours Coordinator:
• Tel: 6488 1295
• Email: ian.li@uwa.edu.au

BHSc Honours:
sph.uwa.edu.au/courses/honours

BSc Population Health major Honours:
sph.uwa.edu.au/courses/ph-major-honours

If you are interested in MPH 12 point projects, MPH 24 point dissertation projects or MPhil or PhD research projects...
Contact our Graduate Research Coordinator
• Tel: +61 8 6488 1299
• Email: grc-sph@uwa.edu.au

Research and Coursework PG courses
sph.uwa.edu.au/courses/postgraduate
Research projects in this book

A wide range of potential projects are available, some of which are listed in the following pages. Many of these can be tailored to a scope suitable to your course: just look for the */**/***/****

* denotes a projects that can be tailored to Honours, 12 point Masters Project, 24 point Masters dissertation or PhD scope - this includes most of the projects in this booklet.

** projects suitable for 24 point research dissertation, MPhil (previously MPH by Research) thesis or PhD

*** Honours/12 point Masters projects

**** Honours projects

***** 24 point Masters projects

If you’re interested in a particular project and have specific questions, you may also wish to contact the main supervisor directly. The contact supervisor for each project is named in italics. All supervisors are from SPH unless specified otherwise, and can be contacted by email via firstname.lastname@uwa.edu.au. Further contact details are at the end of this booklet.

Project collaborators and abbreviations

- ARC - Australian Research Council
- ARP - Asbestos Review Program
- BHS - Busselton Health Study
- CBEH - Centre for Built Environment and Health, SSEH UWA
- GOHaD - Centre for Genetic Origins of Health and Disease
- CHSR - Centre for Health Services Research, SPH UWA
- COVS - Centre for Opthamology & Visual Science
- CSI - Centre for Social Impact, Business School UWA
- Curtin - Curtin University
- DO RPH - Dept of Opthamology, RPH
- HWA - Health Workforce Australia
- LEI - Lion’s Eye Institute
- ORE - Occupational Respiratory Epidemiology, SPH UWA
- PaLM - School of Pathology and Laboratory Medicine UWA
- PYMS - Peel Youth Medical Service
- RPH - Royal Perth Hospital
- SCGH - Sir Charles Gairdner Hospital
- SEE - School of Earth and Environment UWA
- SMP - School of Medicine and Pharmacology UWA
- SPH - School of Population Health UWA
- SSEH - School of Sport Science, Exercise & Health UWA
- TKI - Telethon Kids Institute
- WPWA - Nature Play WA

Supervisor title abbreviations

Asst/Prof - Assistant Professor
Assoc/Prof - Associate Professor
Prof - Professor
W/Prof - Winthrop Professor
Clin/Prof - Clinical Professor
Adj/Prof - Adjunct Professor
Promoting Physical Activity in Developing Countries *
Supervisors: Asst/Prof Julie Saunders, Prof Jane Heyworth

Background: Non-communicable diseases, including type II diabetes, are increasing in developing countries. Similarly, physical inactivity, one of the key risk factors for conditions such as obesity and diabetes, is emerging as a significant issue in these countries, particularly among girls. While interventions to promote physical activity are common in developed countries, they are less so in developing countries, partly due to limitations in evidence and resources.

Outline: This project involves a literature review of physical activity prevalence, correlates and interventions conducted in developing countries, with an emphasis on those targeting girls and women. Evidence-based guidelines for the promotion of physical activity to girls and women will be developed.

What Influences the Choice to Practice Medicine in Remote Areas: A Discrete Choice Experiment ***
Supervisors: Dr Ian Li; Dr Richard Norman (Curtin)

Background: The shortage of medical doctors in rural/remote Australia remains a standing issue, despite a number of policy tools having been developed to address this. For example, general practitioners are incentivised to practice in rural/remote areas through the General Practitioner Rural Incentive Program, where monetary incentives are offered, with higher payments designated for more remote practice. Yet the number of medical practitioners in remote areas is still insufficient.

Outline: This project aims to build on the literature and explore which factors are likely to influence practice in rural or remote regions in Australia. This can be done through a Discrete Choice Experiment study design, where medical students are asked to choose between career pathways. These career “states” will vary based on factors established in the literature that impact on medical practitioner’s career choices, such as earnings, work-life balance, career or professional development. In particular, it would be useful to explore the amount of trade-offs or incentives that are required to encourage practice in rural/remote regions.
Associations Between Psycho-Social Factors & Physical Activity Among Girls *
Supervisor: Asst/Professor Julie Saunders

Background: Physical inactivity is a growing problem in Australia, with girls more likely to be physically inactive than their male counterparts. Despite numerous interventions targeting girls, few have been successful; indicating that physical inactivity among girls is poorly understood. To further develop effective interventions for this important target group, it is necessary to have a better understanding of the influences on physical activity, including psychological and social environmental factors.

Outline: The student will be responsible for conducting a brief literature review and analysing data on physical activity self-efficacy, attitudes and peer support collected from adolescent girls in 2012-2013. An elementary understanding of biostatistical techniques will be required, as will a basic working knowledge of SPSS.

Food Environments Within Tertiary Education Settings: Are they supportive of healthy eating? ***
Supervisors: Dr Georgina Trapp (TKI); Assoc/Prof Gina Ambrosini, Asst/Prof Hayley Christian

Background: Poor eating habits are a major health concern among young people transitioning from adolescence into early adulthood. Common unhealthy eating patterns among this group include meal skipping, eating away from home, frequent snacking, high consumption of sugary drinks and fast food and low fruit and vegetable intakes. Universities and technical and further education institutions (TAFEs) have the potential to play a significant role in shaping the food choices of young adults who spend much of their time exposed to this setting and are an ideal target for interventions aimed at improving dietary behaviours.

Outline: This study aims to assess the “food environment” of universities and TAFEs in the Perth metropolitan area, to gain insight into what young adults are exposed to on-campus and to identify factors in the food environment that require intervention. An established audit tool will be used to analyse all food outlets and vending machines on these campuses. Information will be collated on the availability, accessibility and promotion of foods and beverages and a composite ‘healthiness’ total score calculated.
Using Social Media & New Technologies for Physical Activity Promotion Among Adolescents *
Supervisor: Asst/Professor Julie Saunders

**Background:** Adolescent girls are an important target group for physical activity research for a variety of reasons. Despite the numerous benefits of physical activity, they are typically less active than their male counterparts at all ages, and the transition from childhood to adolescence is a period of marked decline in physical activity among girls. Recent studies have utilised social media and emerging technologies as means of engaging adolescent girls around various health issues, including physical activity.

**Outline:** This project involves a literature review of physical activity interventions using social media and emerging technologies, particularly those targeting adolescent girls. It may also involve the development of a suite of tools to engage adolescent girls in physical activity promotion.

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Quantitative Assessment of Occupational Exposures in WA Mines *
Supervisors: Dr Susan Peters, Prof Nick de Klerk (ORE)

**Background:** Assigning quantitative, accurate levels is the ultimate goal in occupational exposure assessment for epidemiological studies. Quantitative exposure assessment (QEA) enables epidemiologists to express risks of a disease per unit of exposure and hence to derive exposure limits. To accurately estimate risks arising from hazard exposure in the workplace, exposures need to be properly quantified. To perform QEA, measurement data are needed, together with information on how, why, when and where they were collected. Access to and accurate use of such measurements is limited in occupational epidemiology. Routine measurements from mines will be modelled to describe the determinants of exposure to dusts to assign QEA levels to mine workers.

**Outline:** Levels of exposure to (potentially) hazardous dusts and chemicals in Australian mines have been monitored by the industry for many years, but have as yet never been used for exposure assessment in occupational epidemiological studies. The electronic database CONTAM contains the results from exposure monitoring from WA mines since 1986. This data will be modelled to describe the levels, determinants and variability of exposure to dusts, specific carcinogens and other hazards in the mining industry. Individual mine workers can then be assigned QEA levels based on their work histories, which will assist future epidemiological studies.
Discrete Choice Experiments & Valuation of Health States

Supervisors: Dr Ian Li; Dr Richard Norman (Curtin)

Background: In order to compare different healthcare interventions against one another, one needs to be able to put a value on different health states; to quantify the benefit of moving from one health state to another. A discrete choice experiment design allows the valuation on a health state. In these, an individual is offered a choice of two or more health states, and is asked to select the best one. By asking someone to respond to a series of these, we can use regression analysis to identify the dimensions that matter most to respondents. For instance, is pain more or less important than depression? Is poor mobility more tolerable than an inability to see friends and family? A range of datasets are available that explore these issues using different instruments for describing health and in different countries.

Outline: This project would involve exploring one of these datasets to identify which aspects of health matter most. A useful extension would be to combine the raw data with demographics of the respondents, potentially identifying if different types of people are likely to respond differently to these questions.

Crime & Prison as a ‘Rite of Passage’: Attitudes of youth with an incarcerated parent towards crime & incarceration

Supervisor: Asst/Prof Karen Martin

Background: With 50% of Australian prisoners being parents and ~ 4.3% of Australian children being affected by parental incarceration, it is likely that the family culture as well as home environment is compromised for many youth. Research has highlighted the potential impact of incarcerated parents on children and adolescents in relation to their health and wellbeing, but little is known about the perspectives towards crime and prison of children with an incarcerated parent or close relative. There are increasing anecdotal reports that some socially disadvantaged teenagers see prison as a ‘rite of passage’ or a place where they may ‘fit in’.

Outline: Using in-depth interviews with adolescents attending community services in targeted local areas (Midland, Armadale), this exploratory project will examine the attitudes of teenagers who have a parent/close relative incarcerated (or recently released) towards crime and incarceration. In identifying factors influencing attitudes towards crime and incarceration, this project will also ascertain potential mechanisms for promoting appropriate and healthy attitudes to criminal activities and prison. The project could be extended with additional components eg. qualitative research with police, justice system representatives and other stakeholders.
Dust Diseases and Tuberculosis in Western Australia ***

Supervisors: Dr Susan Peters, Prof Bill Musk (ORE); Dr Fraser Brims (SCGH)

Background: Hard rock mining has been a major industry in WA since the discovery of gold and the goldrushes of the 1890s. In 2011/12 nearly 100,000 individuals were employed at mine operating sites in WA and this figure is rising. Hard rock mining is characterized by high exposures to silica dust. Tuberculosis (TB) rates are also rising in WA from 4.8 per 100,000 in 2009 to 7.1 per 100,000 in 2012. There is an established epidemiological link between silicosis (dust-related lung disease) and TB in other populations, but this has never been studied in WA. In particular, the association between silicosis from mining and the TB incidence in the state is not known. Silicosis has been recognized in miners since the early 1900s and compulsory chest X-ray examinations for TB were instigated in 1926 and continued until 1995. The final X-ray of every miner was saved. At the time of their surveillance X-rays, miners were interviewed and their job and health histories recorded or updated on a “miner’s card”.

Outline: The miners’ health record cards (n~200,000) have been entered into a database containing demography, mining occupation, dates and duration of mining, and smoking history for each miner. The data will be linked to the newly consolidated TB Register. Incidence rates of TB in the miners will be calculated and compared with the (non-mining) general population of WA to demonstrate the changing contribution of mining exposures to TB incidence over the past century. Chest X-rays of miners with TB will be read for the presence of silicosis and compared with chest X-rays of miners without TB. These will be adjusted for known confounders such as age, country of birth, calendar period of employment, tobacco smoking and dust exposure to determine if radiographic silicosis is a predisposing factor for the development of TB using multivariate logistic regression and the calculation of adjusted odds ratios.
Background: There is growing interest in environmental interventions targeted at increasing children’s physical activity because of their potential reach and impact on the health and well-being of future generations. In the last decade there has been a 20% increase in the number of 0-4 year olds in WA with 63% of WA 2-3 year olds attending some type of child care. The child care setting is where children spend a considerable portion of their time, thus it is an important setting in which children should have the opportunity to accumulate physical activity and other forms of unstructured physical play to facilitate their health and development.

Outline: The PLAYCE (Places Spaces & Environments for Children’s Physical Activity) research program investigates the influence of the physical, social and policy environment on young children’s physical activity, sedentary behaviour, eating behaviour, weight status, sun exposure and development across different behaviour settings (childcare, home and the neighbourhood). PLAYCE aims to provide information on how best to create healthy environments for young children and families to enable them to lead healthy and fulfilling lives. A range of PLAYCE research projects are available, including:

- Using GPS to understand where and how young children move around their home and neighbourhood;
- Qualitative research with children, parents, staff and key stake holders in the childcare setting;
- Interventions to improve physical activity levels and health of children attending childcare.

Students are encouraged to arrange a time to meet and discuss potential topics.
Health Assessment and Pilot Health Project for Cross-Border Migrants and Border Communities in Timor-Leste *

Supervisors: Bruno Maltoni (International Organization for Migration Timor-Leste); Prof Jane Heyworth; Dr Alison Reid (Curtin); Asst/Prof Julie Saunders

Background: The circumstances surrounding the migration process can increase an individual’s vulnerability and can expose host communities to various health risks, including HIV, TB and other communicable diseases. Little is known about the specific health status, knowledge, attitudes or practices of cross-border migrants and border communities in Timor-Leste, nor their impact on the health of the nation. What is known, however, is that the border areas in Timor-Leste continue to be marked by a lack of health infrastructure; border communities in the districts of Covalima, Bobonaro and in the Oecussi enclave, for instance, experience some of the lowest levels of hospital access in the country. More generally, the shared border zones between Indonesia and Timor-Leste are characterised by limited infrastructure and resources to support effective border management. This is further consolidated by a lack of coordination regarding cross-border health management rendering both nations vulnerable and hindering national responses to global pandemics, regional epidemics, and emerging health and health-related issues.

The porosity of the 228 km border between Timor-Leste and Indonesia also facilitates irregular migration, including human smuggling and trafficking, alongside other forms of organized transnational crime. Irregular migrants are particularly vulnerable given their lack of legal protection and access to health services in destination countries. Lack of access to adequate healthcare facilities, heightened vulnerability to health risks, as well as limited knowledge of signs and symptoms of serious health issues, can not only lead to the perpetuation of illness in individuals but can also facilitate the spread of communicable diseases such as TB, malaria and HIV within and between communities.

Outline: In response to these challenges, IOM Timor-Leste proposes to conduct a rapid health assessment of cross-border migration and border communities in Timor-Leste. This study would be conducted in the three Timorese districts which share land borders with Indonesia, namely: Bobonaro; Covalima; and Oecussi. This study would be an ex ante evaluation of on-going, recurrent, and emerging public health issues affecting border communities and relating to the process of cross-border migration. It is hoped that through this assessment a base of information and data
will be created which would be used to inform two pilot border health initiatives aimed at strengthening existing health systems, improving multi-sectoral planning and coordination, and increasing the provision of health services for cross-border migrants and border communities in Timor-Leste.

The project will be a collaboration with IOM Timor-Leste and might include:

- A desk review of existing data on the health of cross-border migrants and border communities in Timor-Leste;
- Information garnered from multiple stakeholder consultations (focus groups, in-depth interviews);
- GIS (Geographical Information Systems) mapping of mobility patterns and trends; accessibility and coverage of health services in the border areas;
- AKAPs (Knowledge, Attitudes and Practices) Survey of border communities in Bobonaro, Covalima and Oecussi, particularly relating to TB, HIV and malaria;
- Analysis of the existing services and gaps in services to cross-border migrants and border communities.

Please note funding would need to be clarified at the time of uptake of this project. There may also be other projects available.

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Influence of the Built Environment on Child Health & Development *

Supervisors: Asst/Prof Hayley Christian; Prof Steve Zubrick, Dr Sally Brinkman (TKI)

**Background:** Developmental delays in physical health and wellbeing, social competence, emotional maturity, language, cognitive and communication skills have significant health, social and economic consequences for later life. Across Australian suburbs there are inequalities in the proportion of children developmentally at risk. A significant amount of this inequality is unexplained. The project will examine the influence of the neighbourhood and home physical environment on early child health and development (ECH&D), providing evidence to inform the design of urban areas that are supportive of child health and development. The built environment (BE) incorporates land use patterns, building design, transportation systems, access to shops and services and social infrastructure, and creates conditions that are optimal (or detrimental) for ECH&D.

**Outline:** The main aim is to identify BE aspects that are important for child health and development. This research will use data from the Australian Early Development Census (AEDC) to examine neighbourhood attributes (e.g. access to child education and health services) associated with ECH&D outcomes. It will provide evidence to determine child-friendly environments in the context of neighbourhoods and what are optimal levels of BE features for ECH&D.
**Are Young People More Susceptible to the Effects of Neighbourhood Food Environments in WA?**

Supervisors: Dr Georgina Trapp (TKI); Assoc/Prof Gina Ambrosini

**Background:** There is increasing interest in whether the neighbourhood in which people live plays a role in determining food choices, particularly in the context of obesity prevention. Most studies examining the influence of neighbourhood food environments (i.e. the geographical location of food outlets) have focused on adults, with less attention given to other age groups. There is some evidence that young people may be more sensitive to effects of neighbourhood food environments than older adults.

**Outline:** The aim of this project is to analyse and compare the influence of neighbourhood food environment attributes on dietary intake in people from different lifestages, i.e. children, young adults, adults and older adults. Data from the Healthway-funded Lifecourse study will be used, which includes data from 15,538 Western Australians, including children aged 0-15 years (n=2,823), young adults aged 16-24 years (n=1,515), adults aged 25-64 years (n=7,630) and older adults aged 65+ years (n=3,570). Objective individual-level measures of food access (e.g., food store density, proximity and types) will be generated and associations with self-reported fruit, vegetable and fast food intakes will be examined. Findings will inform public health policy and interventions aimed at increasing access to healthy foods.

**Food Environments in the Home, at School and in the Neighbourhood: Which is most important for children?**

Supervisors: Assoc/Prof Gina Ambrosini; Dr Georgina Trapp (TKI); Dr Esther van Sluijs (University of Cambridge); Prof Andy Jones (University of East Anglia)

**Background:** Dietary intake is shaped by myriad complex social and environmental influences, which underpin individual choice. A population level approach recognises the importance not only of the home nutrition environment, but also access to and availability of healthy food outside the home. Better understanding of the relative contributions of different food environments is needed to highlight priority areas for action and focus policy efforts to prevent obesity in young people.

**Outline:** This project will use data from the SPEEDY (Sport, Physical activity and Eating behaviour: Environmental Determinants in Young people) study, a cohort study of 3,619 children recruited at 9 to 10 years of age (Year 5) through 92 schools in Norwich, England. It will analyse the relative contributions of different food environments (home, school and residential neighbourhood) on dietary intakes (4 day food diaries) and weight status, using an ecological model approach.
Absolute Cardiovascular Risk Estimation **
Supervisors: Prof Matthew Knuiman, Assoc/Prof Tom Briffa; Prof Joseph Hung (SMP)

Background: Absolute risk of cardiovascular disease (CVD) is the probability of a cardiovascular event or death within a fixed period of time (e.g. next 10 years). Absolute risk estimates are used for a variety of purposes. They are used to inform guidelines for the management of risk of cardiovascular events in people with and without risk factors, to communicate risk to patients and thereby motivate them to modify behaviour, and sometimes to assess eligibility for government-subsidised medications (e.g. lipid-lowering medications). There are a number of CVD risk estimation models in use but they can provide quite different risk estimates for the same individual.

Outline: This project will explore the development and assessment of new absolute CVD risk estimation models using the rich variety of data available in the Busselton Health Study (BHS). Approaches to produce better models include:
(1) expanding the list of risk factors and medical history variables used in the prediction;
(2) using past as well as current values of risk factors;
(3) considering competing risks of death;
(4) considering shorter term (e.g. 5 years) and longer term (e.g. 20 year) risk separately; and
(5) developing methods for calibrating the models for use in populations different from the population from which they were derived.

Approaches to assessing the performance and accuracy of models will include the commonly used C-statistic as well as other measures such as NRI (Net Reclassification Improvement) and IDI (Integrated Discrimination Improvement).

This project will require you to:
• Review literature on absolute CVD risk estimation and its methods, uses and limitations;
• Become familiar with the Busselton Health Study and its accumulated data and liaise with BHS investigators;
• Develop, prepare and submit Research Proposal and application for ethics approval; and
• Analyse data, compile results, and prepare manuscripts for publication.

Suitability: This project is suitable for a MPhil or PhD candidate with good biostatistical knowledge and skills. The MPhil candidate should complete at least 2 peer-reviewed publications and a PhD candidate at least 4 peer-reviewed publications.
No Pets Allowed? Social and health benefits of enabling pets to live with people vulnerable to social isolation

Supervisors: Assoc/Prof Lisa Wood, Asst/Prof Karen Martin

Background: Research has shown the mental health, social and physical health benefits of pet ownership, but for some people changes to their housing or life circumstances make it hard to keep a pet.

Outlines: There is scope for three student projects looking at current policy and practice in this area:

1. Retirement villages and aged care facilities often have a default ‘no pets allowed’ policy, yet we know that pets provide an important antidote to social isolation and can facilitate connectedness with other people. Given 63% of Australians own a pet, and we have an aging population profile, this is a relevant public health and social issue. This project could include a survey of retirement and aged care facilities to assess current pet policies and/or qualitative research with people for whom ‘no pet’ rules are a barrier to downsizing or moving into a retirement village.

2. Women and children escaping domestic violence situations are another population group who face challenges if they own a pet – most shelters and refuges are communal and can’t accommodate pets, and evidence indicates that between 20-40% of women delay leaving a violent home environment for fear of the pet being harmed if left behind. It also exacerbates the trauma for women and children if they have to leave a much loved pet. A growing number of initiatives overseas and in Australia are seeking to address this issue – this includes foster programs for pets that cannot be taken into a refuge, and a small number of refuges that will accommodate some types of pets. This project could include a review of services/programs in Australia to address this issue e.g. desktop and literature review plus a survey or interviews with services regarding demand for the service, barriers and enablers to program effectiveness etc.

3. Homeless people face some unique challenges relating to pets. Not wanting to be separated from their pet can mean that they can’t stay at emergency, crisis or shelter accommodation, as these places typically do not allow pets. Yet a pet can be a vital source of companionship for a homeless person, and caring for the needs of a pet has a positive flow-on to self-care. As rental properties often don’t allow pets, pets can also limit the housing options for people who are at risk of homelessness. This project could include a review of policies relating to pets in places that provide accommodation for homeless people and/or interviews with a sample of services to investigate barriers to altering ‘no pet’ policies and/or interviews with organisations such as the Mercy Foundation that have advocated on behalf of homeless people with pets.
**Closing the Gap in Aboriginal Communities**
Supervisors: Assoc/Prof Lisa Wood; Prof Paul Flatau (CSI)

**Background:** Enormous, unacceptable disparities still exist in the health and wellbeing of Aboriginal people in WA and nationally. While there has been considerable political rhetoric and government investment into ‘closing the gap’, the most recent national report found that progress has stalled on many indicators, and some are tracking in a downward direction. However, national indicators do not tell the full story as progress on closing the gap can vary significantly from community to community. Communities and towns with Aboriginal populations also vary in how they have responded to the challenges of closing the gap. A more accurate assessment of progress on closing the gap should also take into account the programs that have been implemented and how effective these have been.

**Outline:** There is a unique opportunity for a masters or PhD student to monitor a project initiated by local Aboriginal organisations in a regional WA community. The project will be jointly supervised between the School of Population Health and the UWA Centre for Social Impact. The project involves analysis of existing and secondary data and some original data collection in the community. There is scope for the student to identify specific health or social issues that they would be most interested in looking at (eg child health, adult health morbidity, education and health outcomes etc).

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**Barriers and Enablers to the “Art” of Being Healthy**
Supervisors: Dr Christina Davies, Prof Colleen Fisher

**Background:** With the endorsement of the National Arts and Health framework by the Australian Standing Council on Health, the arts are increasingly being integrated into public health policy, programs and services. In 2014, the “Art of Being Healthy” framework was developed and identified six health and wellbeing outcomes related to recreational arts engagement by members of the general population (i.e. mental, social and physical health; economic, knowledge, art and identity outcomes). Using the ‘Art of Being Healthy’ qualitative data set, this project will extend on the framework by assessing the barriers and enablers to health-enhancing arts engagement by the general population.

**Outline:** The aim of this project is to identify the barriers and enablers to health-enhancing arts engagement by members of the general population. The data for this project has already been collected (30 semi-structured interviews). The project will involve a review of the literature, qualitative analysis and reporting.
State-of-the-Art Cardiovascular Disease (CVD) Research *

Supervisors: W/Prof Matthew Knuiman, Assoc/Prof Tom Briffa, Asst/Prof Frank Sanfilippo, Asst/Prof Siobhan Hickling, Lee Nedkoff; Prof Joe Hung (SMP)

Background: CVD is costly and prevalent worldwide. Monitoring and reporting trends is a national priority health area and is a driver of health policy aimed at improving 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 topic areas include:

- Atherothrombotic disease across the vascular territories
- Monitoring coronary artery disease
- Busselton Health Study
- Management of CVD in the Indigenous population
- Diabetes and CVD
- Peripheral arterial disease
- Risk Factor Prevalence Study
- Coronary artery revascularisation
- Chronic kidney disease and CVD

Medications Following a Heart Attack in the Elderly **

There is compelling evidence for drug therapy following a heart attack. However, in very elderly patients (80+ years), the effectiveness of these drugs can be complicated by the total number of drugs being taken in this group. This project will investigate the number and types of drug groups taken by these patients, and whether they fall into the Beers’ list of high-risk drugs/drug groups. The project will use a linked dataset containing hospital, death, PBS and MBS. It is suitable for a Masters (Coursework), or with extensions, a MPhil thesis.

Secondary Prevention Medications for Atrial Fibrillation **

Atrial Fibrillation (AF) is an arrhythmia where the heart beats rapidly, leading to an increased risk of stroke and heart failure. Medications are used to control this condition. This project will use a unique linked PBS/hospital morbidity/mortality dataset to investigate epidemiological, clinical and health economics objectives. These include descriptive analyses of dispensing patterns, identifying clinical and socio-demographic factors influencing long-term drug use, and measuring the association between adherence to medications and outcomes in patients with AF. This project is suitable for an MPhil or PhD project, depending on the scope of objectives included.

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Non-cardiac Surgery Following Coronary Revascularisation **
This project will investigate rates of non-cardiac surgery following coronary procedures, to determine the risk of adverse outcomes including intracranial haemorrhage and gastrointestinal/retroperitoneal bleeding in these patients. The project will utilise linked hospital morbidity and mortality data, and electronic cardiac registry data. It is suitable for an MPH (Coursework) project.

Developing a Modified EuroScore Using Linked Data **
The EuroScore is an important risk score for risk adjustment in patients undergoing coronary artery bypass grafting surgery. It requires clinical data routinely collected in hospital prior to the procedure. This project aims to develop a modified version of the EuroScore using linked administrative data and validating it against a score derived from clinical data, with the aim of extending the utility of the score to a broader range of structural cardiac procedures. This project is suitable for a MPhil thesis.

Best Use of Clopidogrel in Acute Coronary Syndrome Patients **
Following coronary stent procedures, patients are put on dual antiplatelet therapy (aspirin and clopidogrel). However, doctors still don’t know the optimal length of time for this treatment due to competing risks of bleeding versus the risk of a further heart attack. The project will use linked datasets and clinical hospital data to investigate across 3 main areas: (i) how long to continue dual antiplatelet therapy, (ii) rates of acute coronary syndrome admission following cessation of clopidogrel, and (iii) rates of admission for bleeding while on versus off clopidogrel.

Use of Statins in Coronary Heart Disease Patients **
Statins are a frequently used drugs in coronary heart disease patients to prevent heart attacks. This project will investigate a number of important areas of statin utilisation including identifying age- and sex-specific risk thresholds for use of statins and determining levels of risk in patients who cease statins. The project will use linked administrative datasets including hospital morbidity/mortality and PBS data. It is suitable for an MPH project or MPhil thesis.
How Does Contact With Nature Facilitate Young Children’s Health and Development? *
Supervisor: Asst/Prof Hayley Christian

Background: Contact with nature (plants and animals) is associated with children developing a sense of identity, autonomy, psychological resilience, self-regulation, gross motor skills and learning healthy behaviours. However, while the pathways through which contact with nature facilitates child health and development have been examined in older children, studies to date have not examined the effect of nature contact on young children’s health and development.

Outline: This project will involve collaboration with industry partner Nature Play WA (NPWA). The project will evaluate the impact of NPWA’s education program aimed at providing early childhood education and care staff with the knowledge and skills to create nature play spaces within the childcare setting. The student will conduct a literature review on the effects of nature contact on young children’s health and development. A follow-up survey of early childhood education and care staff will be undertaken to ask them about changes to their childcare centre (e.g., changes to the outdoor physical environment, program content, care and teaching practices) post-taking part in the NPWA program. Visits to childcare centres to objectively assess changes to the childcare environment and its effect on young children’s health and development can also be done.

Topics & Issues in the Health Workforce *
Supervisor: Asst/Prof Ian Li

Background: Workforce planning is a critical aspect of maintaining a healthy workforce. In Australia, the importance of planning for a healthy and sustainable workforce has been highlighted by the formation of Health Workforce Australia (HWA), a body dedicated to the development of workforce policy. A recent report by HWA projects a shortage of the Australian health workforce by 2025. The health workforce shortage can be attributed to a combination of demand-side factors, such as an ageing population and supply-side factors, such as the ageing health workforce and the trend of decreasing working hours of the health workforce (due to feminisation and work-life balance). These factors highlight the issues faced in health workforce planning and policy and mirror the challenges identified in the international literature.

Outline: Health workforce trends will be examined using a national cross-sectional dataset. Several issues relating to the health workforce may be explored. Labour market outcomes of university graduates in a health-related field of study may also be explored, as this will help direct workforce development and training.
Impact of Traffic on Children’s Respiratory Health Resulting from Time Spent at Day Care Centres *

Supervisors: Dr Peter Franklin, Dr Hayley Christian; Dr Amanda Wheeler (Curtin)

Background: There is good and increasing evidence that air pollution can affect the respiratory health of children. Furthermore, early life exposures to air pollution can affect lung health (lung function and respiratory symptoms/disease) in later life. In large urban centres traffic is a major contributor to air pollution and even in cities where air pollution concentrations are relatively low (rarely exceeding national standards) proximity to busy roads is still associated with poor respiratory health outcomes. Despite this, child-care centres in Perth continue to be built along busy roads. The aims of this study are to determine i) the indoor and outdoor air pollution concentrations at child-care centres both next to and distant from busy roads, and ii) the respiratory health of children who attend those child-care centres.

Outline: 50 childcare centres will be enrolled in the study, 25 centres with high traffic density at their location and 25 centres with low traffic density. Indoor and outdoor air monitoring of two traffic-related pollutants, nitrogen dioxide and particulate matter, will be conducted at each centre in both summer and winter. Consenting parents will complete a respiratory health questionnaire for their child/children and provide week-long symptom diaries for their child/children during the monitoring periods.

Physical Activity Interventions Targeting Dog Owners *

Supervisors: Asst/Prof Hayley Christian; Dr Westgarth (University of Liverpool, UK)

Background: There is growing awareness about the importance of dog ownership to physical and emotional human health. Almost half of all Australian households own a dog. Dog owners do more walking and are more physically active compared with non-owners. Importantly, dog walking has been shown to be a potentially viable strategy for increasing the proportion of the community who are sufficiently active for health benefit.

Outline: This project will involve intervention research to examine the potential of dog walking to contribute to owners’ overall level of physical activity and increase the proportion of people who meet the recommended level of physical activity. There is scope for interventions targeting adults and/or children. The project is likely to have significant implications for health promotion policy and practice and will involve working closely with industry partners.
The Western Australian Pregnancy Cohort (Raine) Study *

Enquiries: Jenny Mountain (Raine Study SPH)

Background: The Raine Study is a longitudinal pregnancy birth cohort and a rich resource for the study of genetic and environmental factors that affect health and development. 2,900 pregnant women were recruited between 1989 and 1991 and their offspring formed the Raine Study Cohort. Information was collected on the pregnant mother and subsequently both parents and the child. The cohort participants have been assessed at birth, and at 1, 2, 3, 5, 8, 10, 14, 17, 20 and 22 years of age. Information available includes questionnaire data (demographic, developmental, psychological), clinical assessment information (anthropometry, DXA, physical fitness), genetics (GWAS, EXOME, EWAS) and biological sample (blood) analysis.

Raine Study information collected over the past 26 years has been utilised to obtain an understanding of how events during pregnancy, childhood and adolescence affect health and development. The Raine Study information can be used to examine complex causal pathways associated with health outcomes. Information has been prospectively collected over the life course of the participants. The data provides a unique opportunity to examine data collected at more than 10 time points in the life of the participants to answer research questions. The data can also be utilised cross-sectionally at different time points.

Some findings from the Raine Study include:

- Foetal and infant exposures influence metabolic risk, behaviour, language and emotional development.
- Better mental health in teenagers is associated with healthy eating, less television and leisure computer use and less risk taking behaviour.
- Respiratory allergy is important to teenage asthma and exposure to environmental tobacco smoke increased the risk of wheeze.
- Back pain affects over a third of teenagers and impinges on their daily lives.
- Posture, obesity, drug use and mental health are related to back pain.
- Teenagers who had been bullied were more likely to have depression and emotional problems; those who had bullied others were more likely to have depression and to abuse alcohol.
- Raine Study GWAS data has contributed to the identification of new genetic loci influencing birth weight, age of menarche and lung function.

A range of research opportunities are available for utilising the Raine Study Dataset. Data are
available on research area including cardio-
metabolic, mental health, nutrition, sleep,
genetics, ophthalmology, stress, asthma,
risk taking behaviour, physical activity.

Detailed information on questionnaires and
data collections are available on the Raine
Study website rainestudy.uwa.edu.au. If
you are interested in utilising the Raine Study
for your research project, please contact the
Raine Study manager, Jenny Mountain.

Raine Study: Cardiovascular-
Metabolic PhD Projects **
Supervisors: Prof Trevor Mori (SMP);
joint Raine Study & SPH staff

Background:
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. It provides a unique source
of information regarding complex causal
pathways to health outcomes.

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
cardiometabolic 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 Professor Trevor
Mori (9224 0273) or W/Professor Lawrie Beilin
(9224 0258). This project would be performed
under joint supervision by academic staff
affiliated with the Raine Study and the School
of Population Health.
Evaluation of an Innovative, Holistic Health Service for At-risk Youth *
Supervisors: Asst/Prof Karen Martin, Assoc/Prof Lisa Wood

Background: Peel Youth Medical Service (PYMS) is based at the Billy Dower Youth centre and offers a comprehensive, multi-disciplinary health service to local young people aged between 12 and 25 years. Clients tend to be at-risk and marginalised youth. The service provides on-site access to General Practitioners, a Youth Case Manager, Sexual Health Nurse, Registered Nurse and a Psychologist as well as linkages to other youth health services in the region. PYMS aims to improve young people’s long term health outcomes. As such, staff work holistically and actively promote preventative medicine for optimal mental, emotional and physical health. The service offered by PYMS is valued by the community and the service works closely with a network of agencies in Mandurah to provide support for young people in times of need. Lead youth agencies in the region support and recognise PYMS as being integral to the support and care of local young people.

Outline: While it is perceived that the PYMS has a positive impact upon the youth who use the service, the actual impact and processes within the program have not yet been evaluated. An evaluation of this service provides the opportunity for a rewarding student project, with some flexibility regarding the core project components. These could include:

1. A review of existing service provision strategies against current ‘best practice’ literature;
2. A review of current opportunities and systems for increasing systematic data collection across the service;
3. Interviews with PYMS clients about their experience of the service and associated benefits / impacts / outcomes, and the most effective ways to involve them in ongoing evaluation of the service.

In addition to research experience, this project will provide a student with practical experience in client and stakeholder consultations and an understanding of program planning and development.

This project would require a student with good interpersonal and problem solving skills. Students will be supported by both experienced UWA SPH researchers and a clinical staff member at the PYMC.
**Perceived Child Injury Risks: What is the evidence?***
Supervisor: Assoc/Prof Lisa Wood

**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.

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**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.
**Inside Out: Evaluating a community radio intervention connecting prisoners and their families** * 
Supervisor: Asst/Prof Karen Martin

**Background:**
Due to the unique social conditions within a prison setting and removal of many support networks, social relationships between prisoners and their families and friends are often strained. Barriers to prison visits for family and friends work to destabilise relationships and connectedness at a time when these supports are important.

Inside Out is a unique radio program that broadcasts on the Indigenous community radio station Noongar Radio to Perth, Geraldton, Carnarvon, Meekatharra and Mullewa. Recognising the importance that family, community and culture has on the health and well-being of people, Inside Out aims to connect members of the community with those in prison. Whilst personal stories about how the program has helped individuals are often relayed to the Inside Out staff, there has not been any objective evaluation of the impact of the program on prisoners or their family, friends and other community members.

**Outline:**
This project at an honours level would incorporate interviews with family and friends of prisoners and program staff to ascertain if the aims of the radio program in enhancing communication and connectedness are being met.

Extension as a Masters or PhD degree would include additional components such as interviews with prison staff and prisoners. Interviews will ascertain the perception of the impact or benefits derived from the program, problems with the program and its implementation and strategies for maximising benefits of the program.
Fly In Fly Out (FIFO) Families With Young Children: Challenges, adaptations and connectedness in communities*
Supervisors: Cecily Strange, Assoc/Prof Lisa Wood

Background: Families nurtured in communities are associated with better health and education outcomes, whereas lack of social support and poor community engagement are related to poorer health outcomes. FIFO families with young children are a growing population in WA; part of the fastest growing state in Australia. FIFO families have challenges that include disruptions to family life, rosters that can result in lengthy absences and ‘lone’ parenting for extended periods of time, which may all reduce social support and community engagement. At the same time, adaptations to FIFO family life may have short- and long-term benefits.

Outline: There is scope to build on the Connected Families Project (CFP) to explore the challenges and adaptations experienced by FIFO families with young children. The CFP is currently surveying families with young children (at least one child under 5 years) in newer Perth residential areas. Variables of interest include social support, social capital, local community participation, digital communication, community experiences as a parent and wellbeing. Students interested in the topic area of FIFO families are encouraged to contact us to discuss possible qualitative and quantitative research projects.

The Economic Outcomes of Introducing Rapid PCR-Based Diagnosis of Serious Infection in a Regional Hospital *
Supervisors: Prof Elizabeth Geelhoed; Prof Tim Inglis (PaLM)

Background: Recent advances in laboratory medicine have enabled PathWest to precisely identify the cause of serious infection much faster than was previously possible. This improvement relies on skills and equipment currently concentrated in the largest teaching hospital pathology services. A lightweight version of this approach has recently been developed and the logistic support required is now in place to establish the rapid diagnostic capability in our larger regional hospitals.

Outline: We expect the impacts to be reduced time to diagnosis, earlier antibiotic intervention and reduced patient transfers to teaching hospitals. A comprehensive economic impact assessment will assess both the benefits of more rapid diagnosis and the costs of implementation.
Reducing Health Inequalities Among Vulnerable/Disadvantaged Populations *
Supervisors: Assoc/Prof Lisa Wood, Asst/Prof Karen Martin

Background: Huge inequalities in physical, mental and social health continue to exist between the most advantaged and disadvantaged population groups in many countries including Australia. There is substantial evidence that many underlying causes of poor health derive from social, environmental, economic and cultural factors that are embedded in the lives in which people live, work and play. Socially determined barriers can also impede the effectiveness of public health and other interventions with more disadvantaged population groups. This includes at-risk young people, Aboriginal people, homeless or socially isolated people, refugees and prison populations.

Outline: There is scope for a range of projects focusing on disadvantaged populations and/or addressing underlying policy, social, economic and geographic drivers of health and wellbeing disparities. Such projects could be linked to existing studies we are undertaking, or students could discuss their own ideas.

Previous projects in this field include evaluating the impact of an intervention on the health of a disadvantaged population group; assessing the impact of broader public policies (eg housing, recreation) on health related behaviours or outcomes; investigating whether access to community amenities differs in more disadvantaged neighbourhoods; relationships between post-traumatic stress disorder, loneliness and connectedness in adolescent refugees; and socio-economic differences in the density of alcohol and tobacco retail outlets.

Methodologies can include qualitative and/or quantitative research, and we are particularly interested in research that has strong policy and practice implications.

Topics in Labour Economics *
Supervisor: Asst/Prof Ian Li

Studies in the exciting and dynamic area of labour economics deal with issues of skills utilisation, training and workforce development. The research projects in this area may be focused on the health sector, such as health workforce development, or look at health-related workforce issues. Please contact Ian Li to discuss potential projects or for more information.
The Economic and Health Costs of the Wittenoom Industrial Disaster *
Supervisors: Asst/Prof Ian Li; Assoc/Prof Alison Reid (ORE & Curtin)

**Background:** The blue asbestos mining and milling operation at Wittenoom operated over 1943-1966 and left WA with the legacy of having the greatest rate of malignant mesotheliomas in the world. In addition, former workers and residents have watched friends and family members die from and live themselves with the fear of developing an asbestos-related disease.

**Outline:** This project will undertake an evaluation of the health economic costs of Wittenoom. The estimation of costs will take place from a societal perspective; costs are estimated from the viewpoint of society and will be as inclusive as possible. This includes the following: i) Costs estimated for the number of preventable cancers that have occurred as a result of asbestos exposure at Wittenoom; ii) Costs estimated for treatment of asbestos-related diseases; iii) Disability adjusted life-years (DALYs) lost will also be estimated and costed. Data available include workers and residents of Wittenoom cohorts, followed up at cancer and death registries since the mid-1970s, as well as public records.

Issues and Trends in the Australian Nursing Graduate Workforce: Skills mismatches, migrant assimilation, gender imbalances and earnings *
Supervisors: Asst/Prof Ian Li, Assoc/Prof Rosemary Saunders

**Background:** This research project will examine the Australian nursing graduate workforce in general, with scope for potential focuses on several issues prevalent in the nursing workforce. The project has direct relevance to nursing workforce planning and policy making.

**Outline:** Labour market trends and outcomes of nursing graduates in Australia are explored in this research project. The scope of this project is diverse, with focuses on post-graduation destinations, earnings, gender imbalances, skills mismatches, migrant assimilation, and institution of graduation differences. The project is suitable for a PhD project, or can be split up into smaller projects for honours or masters dissertations.
Projects with the Centre for Genetic Origins of Health and Disease (GOHaD) *
Supervisors: W/Prof Eric Moses. Assoc/Prof Phillip Melton, Assoc/Prof Jennifer Stone, Dr Nina McCarthy, Dr Gemma Cadby, Dr Sarah Ward (GOHaD); Prof Jane Heyworth & other SPH academic staff.

A variety of projects are available, with joint supervision between the UWA Centre for Genetic Origins of Health and Disease (GOHaD) and the School of Population Health. Projects will investigate the genetics of common, complex diseases. These can include:

- Cardiovascular diseases
- Cancers
- Neuropsychiatric disorders
- Pregnancy disorders

Projects will use contemporary methods of genetic analysis, utilising bioinformatics and high throughput technologies, to unravel the genetic and environmental contributions to these diseases.

Housing Vulnerability and Homelessness and its Relationship to Mental Health ****
Supervisors: Assoc/Prof Lisa Wood; Asst/Prof Sarah Foster (CBEH)

Background: Housing is a recognised social determinant of health and housing vulnerability and homelessness can significantly impact on health inequalities. Mental illness and chronic disease risk factors are more prevalent among people in homeless or unstable housing circumstances, and transient housing reduces the likelihood of preventative behaviours or early help-seeking, resulting in greater use of costly emergency and tertiary health services.

Outline: We are involved in several projects relating to housing and homelessness that would lend themselves to a student honours project. These range from a study looking at how support programs for homeless people may influence mental and other health outcomes, through to an evaluation of some innovative accommodation and service delivery models for homelessness in Perth.

Students interested in this area are encouraged to contact us to discuss possible projects.
Feasibility of a Smartphone Application for Estimating Usual Dietary Intake in Pregnant Women ***
Supervisors: Assoc/Prof Gina Ambrosini; Dr Roslyn Giglia, Dr Georgina Trapp (TKI)

Background: Assessing usual dietary intake in epidemiological research is a major challenge, due to the complexity of the human diet and the varying degrees of accuracy and acceptability of available tools. Significant respondent burden can also lead to dietary under-reporting of food intake, which can in turn seriously bias observed diet-disease relationships. However, technological advances in smart phones and apps have created new opportunities to improve dietary assessment methods.

Outline: This pilot study will test the feasibility of using a commercially developed smartphone app to estimate usual dietary intake in pregnant women in the form of a 3-day diet diary, in the research setting. We will examine: 1) acceptability of the app based on qualitative feedback from respondents; and 2) a comparison of estimated dietary under-reporting in the app diet diary vs a traditional (paper-based) diet diary. This study will entail recruiting 20-30 pregnant women, the coordination of data collection (two diet diaries) and analysis of qualitative and quantitative data. Findings will be used to inform use of the app in planned cohort and intervention studies on pregnant women, as well as future studies in other demographic groups e.g. adolescents.

Benefits of Family Dog Ownership for Child Health & Development *
Supervisors: Asst/Prof Hayley Christian; Dr Westgarth (University of Liverpool UK)

Background: Physical inactivity and rising levels of overweight/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 dog ownership in children.

Outline: This study examines associations between dog ownership, physical activity, sedentary behaviour and overweight/obesity in children. The relationship between family dog ownership and dog-facilitated physical activity from dog-centred active play or walking with a dog will be examined for different child age groups (e.g. early years, primary school, adolescents). The influence of socio-demographic, social and physical environment factors will be considered. There is scope for qualitative research with parents and children on the motivators and barriers to dog walking and dog-centred play as well as intervention research to determine strategies for improving the child health benefits of family dog ownership.
There is an 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 Professor Colleen Fisher to discuss potential projects in this area.

Artists on Prescription
Supervisors: Dr Christina Davies, Prof Colleen Fisher

Background: In the same way GPs prescribe exercise to improve patient health, there is a growing body of evidence that involvement in recreational arts activities (e.g. listening to music, colouring books, creative writing) and arts events provides a wide range of mental, social and physical benefits. In the UK, ‘Arts on Prescription’ is being utilized by GPs in conjunction with conventional therapies to enhance outcomes for people experiencing mental ill-health and social isolation. Arts on Prescription programs involve a GP referral process to community based arts organisations and artists (rather than a therapists).

Outline: The aim of this project is to assess GPs and arts organisations/artist attitudes towards the development of a WA Arts on Prescription program as well as the methods, infrastructure, processes, etc needed for such a scheme to succeed. The project will involve a review of the literature, qualitative data collection, analysis and reporting.
Outline: This project will use data on adults from the 2005-7 Busselton Health Survey (BHS) to establish the prevalence of lipid-lowering and anti-hypertensive medication use in a community sample overall and in adults who do and do not meet PBS/NHF criteria, and to assess the potential under-treatment in strata of absolute CVD risk. Absolute CVD risk will be based on the Framingham risk score and separately on a risk estimator developed from the 1994/95 Busselton survey cohort with CVD morbidity and mortality follow-up to 2010. Findings will be of importance for new recommendations and policies on the use and subsidy of lipid-lowering and anti-hypertensive medications.

This project will involve becoming familiar with absolute CVD risk estimation, guidelines for use of lipid-lowering and anti-hypertensive medications, PBS eligibility criteria and the Busselton Health Study. Research and ethics proposals will be prepared and submitted, BHS data analysed and report/dissertation and manuscript prepared for publication.

Suitability: This project can be conducted over a 1 or 2 year period. It would be suitable for an MPH student enrolled in Research Dissertation over two semesters or for a Master’s thesis candidate.

This project requires competency in biostatistical methods (eg mastery of regression methods in PUBH5769 Biostatistics II).
Social Work and Social Policy Research *
Enquiries: Dr Susan Young

Social Policy and Social Work (SWSP) research at SPH draws together and co-ordinates research and consultancy activities relating to a broad range of social policy and practice issues. Staff and Honorary Research Fellows bring an extensive range of research skills and experience to an approach underpinned by:
- An applied focus;
- A commitment to participatory methods in understanding social problems and interventions;
- Working in partnership with organisations, workers, other researchers, professional bodies, community groups and individuals; and
- An belief that complex social problems require interdisciplinary research efforts to provide comprehensive explanations and develop effective interventions.

Staff have been successful in obtaining research grants from State and Commonwealth Governments, the ARC, non-government and philanthropic organisations and local government.

SWSP Staff and Honorary Researchers are also actively involved in national, state and local bodies such as Advisory and Management Committees and Boards of Directors to influence social policy and current practice.

The SWSP major areas of research are:
- Mental health and wellbeing
- Gendered violence
- Working with Aboriginal communities and individuals
- The social, safety and health needs of children and their families
- Community work and development
- The development of eco-social work
- Professional education and student wellbeing
- Changing forms of relationships and intimacy
- Homelessness
- Collaborative models of service delivery
- The role of social work in schools
- An evaluation of full-service schools.

If you are interested in pursuing a research project with SPSP, contact Dr Susan Young.

Example short projects for university students from Ngala Research & Development Unit
Contact Dr Susan Young to determine current projects and fit to your course.
Data and Systems Analysis:
Parenting confidence and perinatal mental health influence on parenting
Service area: Family Services
Estimated length of project: 60 hours
Most suitable course: 3rd year or above Psychology degree/Honours student for Health or Social Sciences

Outline: There are two parts to this project. a) Analysis of pre and post Karitane Confidence Scale (KCS) data. Parents are administered the KCS on arrival for the week long stay in the Family Services area and on termination of their stay. This data needs to be analysed to assess the simple question: “Did Ngala make a difference?” according to the two scores.
b) The second part relates to the development of an encoding system to link data from the KCS to the Edinburgh Post-natal Depression scores (EPDS). Currently the EPDS is administered on admission to the week long stay. In addition recommendations, based on current evidence, are required regarding the validity of administering the EPDS for a second time, and if so, when this should be done.

Children’s Wellbeing, Engagement and Attachment
Service Area: Early Learning & Development Service (ELDS)
Estimated length of project: 120 hours
Most suitable course: Honours or Postgraduate studies in Health or Social Sciences, Early Childhood Education.

Outline: A scale currently exits to measure wellbeing, engagement (involvement) and attachment (relationships). The student will assess issues such as:
• What literature exists about the validity of this scale and write a summary of findings;
• Observe and record what Educators are doing to promote children’s wellbeing, engagement and attachment (WEA);
• Discuss with Educators how they believe they are supporting children’s WEA. Compare b) and c);
• Report on the different types of support Educators receive from Management and other internal or external organisational sources for their work in promoting children’s WEA;
• Assess whether there a correlation between staff qualifications, group size and child-staff ratio and their WEA; and
• Assess whether there is a correlation between a child’s level of engagement and level of attachment with an Educator.

Woodside Project
Service areas: Education
Estimated project length: 80 hours
Most suitable course: Honours or final year student in Health or Social Sciences
**Background:** Woodside provided funding for Ngala to do education workshops and community development work in the Pilbara, the Plaza and at their head office. Initial funding was for a 15 month period commencing in January 2007. Further funding was awarded until 2012.

**Outline:** The Pilbara part of the Woodside project called “Nurturing the Pilbara” won an award at the World Petroleum congress in Doha Qatar. This award had Ngala’s project competing against about 100 other social responsibility projects across the world. The student will interview key staff involved with the Woodside project and document;

a) What they did and how they decided on what needed to be done;
b) What were the key elements of the project and what made the project so successful;
c) What measures did they use to gauge the effectiveness of the project; and
d) What would they do differently if they had their time over again.

In addition the student will compile a report based on the above and all the information contained in the interim project reports.

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**Research & Development Unit (RDU) Evaluation**

Service Area: RDU
Estimated length of project: 120 hours
Most suitable course: Honours or Postgraduate studies in Community Psychology, Health or Social Sciences, Early Childhood Education.

**Outline:** Ngala runs a helpline service from 8am to 8pm, 7 days a week. On average approximately 22,000.00 calls are received annually. A student is needed to help analyse various sources of data. The aim is to:

a) Assess whether the current primary presenting issues are different and/or more complex that past primary presenting issues;
b) Present in graph form the changes to the average length of calls over the past 10 years and the primary presenting issues;
c) Assess whether there is a correlation between the call length and the complexity of the primary presenting issue; and
d) Analyse past records kept with regard to reflective practice to identify any recurrent themes.

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**Helpline Effectiveness**

Service area: Helpline
Supervisor: Kim Johnson, RDU
Estimated length of project: 120 hours
Most suitable course: Honours or PG studies in Health or Social Sciences, Early Childhood Education; Community Psychology
based practice. A student is required to assist staff in the RDU evaluate how the evidence provided by RDU has changed the practice of staff. As part of this project the student will be required to conduct a literature search in order to determine the most effective method of evaluation. A report is required outlining the findings of this evaluation.

**Evaluation Tools for CALD and Aboriginal Families**

Service Area: RDU  
Estimated length of project: 120 hours  
Most suitable course: Honours  
Scope of project: Honours or Postgraduate studies in Community Psychology, Health or Social Sciences, Early Childhood Education.

**Outline:** The RDU provides services across Ngala service areas regarding evidence based practice. A student is required to assist staff in the RDU identify validated/successful evaluation tools and methodology used for Culturally and Linguistically Diverse (CALD) and Aboriginal families and communities. The student will be required to conduct a national and international literature search and identify validated/successful evaluation methodologies and tools used and present the finding in a report.

**Parenting Advice and Support Service (PASS) Bandyup Women’s Prison**

Service Area: RDU  
Estimated length of project: 180 hours  
Most suitable course: Honours or postgraduate studies in Forensic Psychology, Health or Social Sciences, Early Childhood Education.

**Outline:** Ngala has had a history with Bandyup Women’s prison dating back to 2006 when a free consulting service was offered with regard to equipping the prison nursery environment. This relationship continued until Ngala was the preferred Agency for the Parenting Advice and Support Service (PASS) commencing 2012. Ngala is still funded to provide a variety of support services with the general prison population and the mothers in the mother-baby unit.

As part of the initial submissions Ngala undertook to evaluate the PASS program by quantitative methods (e.g. providing statistics) and qualitative methods (e.g. collection of stories from women who participate in one or more elements of the PASS program, (1) parenting program, (2) protective behaviours program; (3) growing together program (case management, counselling, mediation, referral & advocacy, prison staff training).
A student is required to:

a) Assess whether or not the above mentioned evaluation methodology is the optimal one and make recommendations in a short report as to what the optimal methods are. This will require a literature search of both national and international evaluations conducted in women’s prisons;

b) Set up approved data collection systems;

c) Collect and analyse the data and present findings in a report.

Outline: Animal Farm program was developed by Curtin University to address gross and fine motor skills with an added advantage of influencing social and emotional development. As part of the Australian Children’s Trust funding Ngala is to purchase the program and manuals for use in rural and remote areas. Some work will be required on the parent manual for use in Aboriginal/remote communities. A student will be required for the development of the parent manual and another student for the continued evaluation of the program.

Most suitable course: 3rd year or above Social Work; Psychology

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What has Changed for Ngala Practice Since the Introduction of Clinical Supervision and Reflective Practice for Practitioners?
Service Area: R&D Unit
Most suitable study course: Honours or Postgraduate studies in Community Psychology, Health or Social Sciences, Early Childhood Education.

Outline: Currently Ngala is undertaking a project to develop a model for clinical/practice supervision at Ngala. Baseline data will be collected prior to implementation, and assistance with evaluation and/or research will be valuable to enable us to measure the impact both on staff and clients.

Projects from the Eye and Vision Epidemiology Research Group *

Supervisors: Prof David Preen; A/Prof Nigel Morlet (DO RPH); Prof Bill Morgan, (COVS/LEI); Dr Jonathon Ng (SCGH)

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 wellbeing 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. Some projects that are available now are shown on pages 39-40.
Complications and Outcomes of Cataract Surgery

Research into cataract surgery is a major interest for the Group and has resulted in two major NHMRC grants. Data from the Western Australian Data Linkage System (WADLS) is used to examine the trends and major complications in cataract surgery. Potential study areas include other postoperative complications (ophthalmic such as retinal detachment and corneal decompensation or non-ophtalmic such as venous thromboembolism). Post-surgery survival can also be examined. This could have important policy implications on wait lists and on surgery benefits.

Cataract Surgery and Car Crash

Older drivers are a growing segment of the driving population. While involved in fewer crashes compared with other age groups, the crash risk is equivalent to that of young drivers considering the lower exposures. This retrospective study examines the impact of cataract surgery and visual impairment on crash risk in older drivers using linked data.

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 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 is 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. WADLS 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 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.
reduce household poverty and increase access to health and education but also impact participation in paid and unpaid employment.

The absence of males of working age can lead to women and children taking on more roles and responsibility, which can also have both positive and negative impacts. Social issues such as loneliness and isolation can emerge and diseases such as sexually transmitted illness may be introduced when migrant workers return home.

Outline: This project involves statistically analysing the 2011 Nepal Demographic and Health Survey. Questions we are interested in answering include:

- Do indices of environmental health/empowerment/socioeconomic status and health vary by whether a household has a migrant worker?
- Does this vary by age of migrant, destination, area of residence, sex?

The International Migration of Nepali Workers: The impact on those who stay behind

Supervisors: Assoc/Prof Alison Reid (Curtin); Prof Jane Heyworth

Background: Nepal has a long history of labour migration, traditionally to India, but from the mid-1980s destinations expanded into newly industrialising Asia and the Gulf and Middle East. It has been estimated that 15% of all economically active males (aged 15 years and older) in Nepal are involved in international labour migration, the majority from agricultural backgrounds (more than one million adult males). Only 2% of Nepali females are involved in international migration.

So if vast numbers of young men from rural areas are leaving Nepal, what is the impact on those who stay behind? Most research to date has focused on the social and economic impact on the remaining household from the receipt of remittances. A complex picture emerges whereby there are both negative and positive impacts. Increased family income may
Issues in Women’s Health: Co-occurring AOD (alcohol and other drugs) and mental health issues *

Enquiries: Prof Colleen Fisher

Background:
A range of research projects are available for students to collaborate with Women’s Health and Family Services. Women’s Health and Family Services is a not-for-profit health care service offering free or low-cost medical, health and well-being programs as well as counselling, training and consultancy.

Projects can be tailored to the interests and requirements for PhD, Masters by Research, Masters Dissertation and Honours students. These include, but are not limited to:

- Client, family/carer or specific community needs from AOD services regarding co-occurring AOD and mental health issues.
- Alcohol use amongst groups (eg by industry, community, service access, visa class, length of time in Australia); potential impact of Australian culture around alcohol use and its impact; protective and risk factors for alcohol consumption; alcohol related violence.
- Evaluation of agency engagement strategies from worker, agency and consumer perspectives: what worked well and what did not.
- The impact of parenting styles on outcomes in families where there are co-occurring AOD and mental health issues.

There is the potential for more than one student to work on a specific topic. There is also the potential to work with staff from the agencies to refine the topics above or develop alternatives. There is also the possibility of access to bilingual workers and/or interpreters.
Community Approaches to the Conservation of Remnant Bush Areas in the Perth Metropolitan Area *
Supervisor: Dr Susan Bailey

**Background:** Awareness is increasing on the importance of remnant bush areas for maintaining biodiversity as well as enhancing a sense of community. Maripana Bush is a remnant bush area in Kallaroo in the City of Joondalup (CoJ). The site is classified by the WA Government as a priority to conserve. A community group “Friends of Maritana Bush” (FOMB) has worked for over 10 years in concert with CoJ.

**Outline:** This project is an exciting chance for a student to be involved in research with community members, CoJ, UWA and other external funding bodies. FOMB have offered suggestions for projects including; 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.

Return on Investment for Research Funding
Supervisors: Prof Elizabeth Geelhoed; Clin/Prof Alan James (SMP)

**Background:** While it is well established that investment in research provides beneficial economic returns, results are mostly presented as benefit-cost ratios according to specific diseases. This study will explore economic return on investment according to study design, in particular long term investment in studies such as the Busselton Health study, which requires established infrastructure to maintain ongoing outputs.

**Outline:** The research will comprise a comprehensive literature review and calculation of estimated returns based on outputs from the Busselton Study.
The Health and Sustainability of the Australian Diet in the 21st Century *

Supervisors: Asst/Prof Siobhan Hickling, Prof Angus Cook, Asst/Prof Ian Li

Background: In February 2016 the Australian population clocked 24 million people and before the middle of this century we are tipped to reach 35 million.

Diet-related disease including obesity, heart disease, stroke, cancer and type II diabetes account for two-thirds of the annual health budget in Australia. In addition to a growing population and heavy diet-related disease burden we are facing an uncertain future climate which will affect our food supply.

Research on the environmental impact of foods and dietary patterns has been fragmented and there is no comprehensive data that describes this in the Australian context. In order to inform Australian food policy now and for the future this research is urgently needed.

Outline: This project will use data from the 2011-2013 Australian Health Survey to determine the environmental impact of the current Australian diet. This will involve reviewing and determining the best method(s) for assessing the environmental impact of foods and dietary patterns, gaining access to the Australian Health Survey data, preparing and submitting research and ethics proposals and determining dietary pattern(s) for optimal health and environmental sustainability.
Research Groups & 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.

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

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
A particular focus on reproductive health, childbirth and chronic illness including cancer and the health impacts of caring.

Nutrition and Health Research Group
Aims to inform public health policy and interventions to improve the diet of populations, in order to reduce the burden from obesity and cardio-metabolic disease.
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.

Health Promotion Research Group
(HPRG) includes a multidisciplinary team of knowledgeable researchers who are passionate about optimising health and wellbeing and preventing the underlying causal factors for poor health.

The Raine Study
The Western Australian Pregnancy Cohort (Raine) Study is one of the world’s largest successful prospective cohorts of pregnancy, childhood, adolescence and now early adulthood. These families have provided environmental, developmental and health information over the past 25 years providing a unique and valuable resource covering a wide range of health areas.

There are opportunities to undertake research in most fields in SPH. Contact us and we’ll put you in touch with the right supervisor for your interests: grc-sph@uwa.edu.au
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