



THE UNIVERSITY OF
**WESTERN
AUSTRALIA**

School of Population
& Global Health

Research projects 2025



Research Projects Available in the School of Population & Global Health (SPGH)

As a world-class research university, UWA offers research opportunities of the highest calibre. You will work closely with an expert supervisor on a specific research topic to produce a manuscript of significant academic scholarship.

Your initial research training can include completion of an Honours or a postgraduate coursework Master of Public Health (MPH) with a 24-point dissertation. This can lead to enrolment in a Master of Philosophy (MPhil) or Doctor of Philosophy (PhD).

As a 24-point MPH dissertation research student with us, you will develop, under supervision, a paper for publication in an academic journal - this is the first step in your research career!

How does research training at SPGH work?

You will work with an academic researcher to investigate an important and topical area of public health. Responsible, conscientious students, who meet the eligibility criteria, with well-developed interpersonal and written communication skills, are sought for these projects.

If you are interested in one of these projects, please contact the person named below the project title. If you would like to undertake a project not listed here (e.g., one where the supervisor is within a different School or not based at UWA) you will still require a supervisor within SPGH. Please contact the Dissertation Coordinator to discuss.

Want to know more?

If your question is specific to the project you're interested in, please contact the academic named under the project title. For other enquiries, contact the Dissertation Coordinator; Dani Barrington – dani.barrington@uwa.edu.au

Research Areas at SPGH

The Busselton Health Study

The Busselton Health study is a series of cross-sectional and longitudinal population health studies carried out on the population of Busselton, WA which aims to provide a better understanding and management of disease and illness.

Research activities undertaken as part of the Busselton Health Study are diverse and encompass a wide range of health conditions and measures.

These have included cardiovascular disease, respiratory disease, diabetes and endocrine disorders, gastrointestinal, kidney and liver diseases, cancer, obesity, sleep disorders, cognition and genetic epidemiology.

Extensive information on demography, lifestyle and behaviour have also been collected at each of the surveys along with blood samples for biochemical measures and genetic studies.

Epidemiological data analysis driven projects are available for Masters students. Please contact A/Prof Kevin Murray (kevin.murray@uwa.edu.au) for details.

Cardiovascular Disease Epidemiology

Page 7

Research in this area aims to reduce the burden of cardiovascular disease through research into trends and determinants of acute events, treatment, management and outcomes.

Child and Adolescent Development and Health

Page 22

Early influences on child and adolescent health significantly impact on health and development outcomes throughout life. Our research draws on the skills and experience of multi-disciplinary backgrounds to engage with stakeholders and deliver high quality research with real world policy and practice implications.

Environment and Health

Enquire

Research in this area investigates the relationships between ecosystems, environmental and occupational agents and health, at local and global scales, in order to determine ways that we can improve global human health. We research disease outcomes resulting from occupational and environmental exposures, such as mining hazards, asbestos, air pollution, heat, noise and water. We are also investigating the positive impact of green and blue spaces on health, and a developing area of interest is health promotion in relation to global and environmental health.

Please contact A/Prof Peter Franklin (peter.franklin@uwa.edu.au) if you are interested in undertaking research in this area.

Equity and Oral Health

Page 28

Research in this area is underpinned by equity and social justice in public health, including working with Aboriginal Australians and other cultural groups. Much of their work uses oral health as a lens to explore equity.

Genetic Epidemiology

Enquire

Research in this area aims to identify the genetic and environmental determinants of common human diseases and explore ways of using this information to improve human health.

Please contact A/Prof Jennifer Stone (Jennifer.stone@uwa.edu.au) if you are interested in undertaking research in this area.

Global Health

Page 33

As public health researchers, we are interested not only in the health of Australia's domestic population, but also the health of communities across our region and around the world. We work with partners in neighbouring countries to support primary research on the impact of health programs, local policies, and new interventions or health strategies; and we work with global institutions, such as the World Health Organisation, to undertake cross-country analyses of secondary data on child and maternal health, nutrition, and health systems functioning.

Health Services Research

Page 40

Researchers in the School undertake work with linked medical and health data, other health services data and the evaluation of health services, patient safety, surgical care and pharmaco-epidemiology.

Neuropsychiatric Epidemiology

Page 43

The Neuropsychiatric Epidemiology Research Unit (NERU) focuses on psychiatric epidemiology, taking a cross-disciplinary approach to the study of psychotic disorders including schizophrenia and other severe mental illness.

disorders including schizophrenia and other severe mental illness.

The Raine Study

Page 44

The Raine Study, established in Perth in 1989, is one of the largest longitudinal, observational and multigenerational pregnancy cohort studies globally. It aims to improve human health and well-being by studying the life-course of a cohort of 'Western Australians', focusing on understanding the multifaceted interactions of genetics, environment, phenotype, behaviour, and other developmental outcomes. For 35 years, the Raine Study has been instrumental in helping researchers and policymakers gain a deeper understanding of the factors influencing human health and well-being. It has grown to span four generations and includes Generation 1 - the original mothers (2900 women recruited at 18 weeks pregnant) and fathers. Generation 2

– the babies born into the study between 1989 and 1992. Generation 3 – biological children of Generation 2, and Generation 0 – the biological grandparents of Generation 2.

The Raine Study is a world-class research enabling platform providing researchers access to a rich data holding, including 30 million genetic and epigenetic data points, 170,000 curated biological samples and 30,000 phenotypic variables. The Raine Study contributes to life-changing scientific discoveries, advancements in clinical practice, and influences future health policies, with its research impact further evidenced by over 760 publications in peer reviewed journals. The Raine Study is currently undergoing its 18th and largest ever follow-up, collecting phenotypical data via questionnaires, physical assessments, matched biological measures from Generation 1, 2, and 3 participants' and obtaining consents to link the whole Raine Study dataset to the Commonwealth and WA administrative datasets.

Vulnerable Groups

Page 46

Research in this area aims to improve health and social outcomes and reduce the disease burden among some of society's most at-risk populations.

State-of-the-Art Cardiovascular Disease (CVD) Research

A/Prof Tom Briffa - tom.briffa@uwa.edu.au

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.
- Busselton Health Study.
- Monitoring coronary artery disease.
- 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.

Methodology: The Cardiovascular Research Group uses clinical data collected from cohorts in Western Australia together with person linked administrative data from hospitals and registers to examine influences, trends and epidemiology of CVD health outcomes.

Project Length: One semester full-time or two semesters part-time.

Process evaluation of the Healing Right Way trial

A/Prof Judith Katzenellenbogen - judith.katzenellenbogen@uwa.edu.au

Background: This project is part of a process evaluation of the NH&MRC-funded randomised control trial (RCT) entitled 'Enhancing rehabilitation for Aboriginal Australians after brain injury: Healing Right Way' (HRW). This project is focused on providing culturally secure rehabilitation services for Aboriginal patients with acquired brain injury. HRW uses a randomised cluster step-wedge design of a complex intervention (consisting of culturally secure training (CST), and the introduction of an Aboriginal Brain Injury Coordinator (ABIC) role) in four metropolitan and four regional Western Australian hospitals.

We have designed and implemented a mixed methods process evaluation which is being undertaken both prospectively and retrospectively, enhancing the conduct and interpretation of the parent study.

Outline: To determine processes, barriers and facilitators that have influenced the implementation of the trial and ongoing partnerships with stakeholders during the first two years of the RHW.

Methodology: Qualitative study using data collected prospectively as part of the process evaluation.

Data collected includes minutes of meetings, interviews with project staff, surveys with participants of cultural security training in hospitals, review of communication with project partners.

Project Specific Requirements: Knowledge of evaluation frameworks, qualitative methods.

Project Length: One semester full-time or two semesters part-time.

Coronial inquiries and circumstances of death among people with Rheumatic Heart Disease (RHD)

Dr Emma Haynes - emma.haynes@uwa.edu.au

A/Prof Judith Katzenellenbogen - judith.katzenellenbogen@uwa.edu.au

Background: RHD is a serious condition involving damage and dysfunction of one or more heart valves following acute rheumatic fever (ARF). ARF peaks in the 5 to 14-year age group and premature death is common among people with severe RHD.

The significant and disproportionate burden of ARF and RHD is driven by indirect causes of the disease, including the ongoing effects of colonisation, socio-economic inequities, inadequate housing, living conditions, and sub-optimal access to effective and culturally responsive health care.

Deaths in custody is a major issue for Aboriginal people, as is access to care for complex diseases both in custody as well as the community. Coronial inquiries are over-represented in the death records of people with RHD. More information is needed about the detailed circumstances so that appropriate steps can be put in place to mitigate preventable deaths.

Outline: To explore the reasons for coronial inquiries and circumstances of death among people with RHD who die in an RHD cohort aged under 55. Such information can be used to guide care and reduce preventable deaths.

Methodology: Mixed methods but predominantly qualitative.

Sources of data:

1. Existing data set of death in people with RHD.
2. Public records of coronial inquiries.
3. Interview with key professional informants (such as legal, RHD control program).

Methods of analysis:

1. Simple frequencies/proportions of deaths with coronial inquiries on the death record.
2. Review of legal documents to explore reasons for the coronial inquiry.
3. Thematic analysis of court records and interview data regarding circumstances related to care.
4. Additional - select 3 case studies for detailed analysis (from all sources) selected to explore nature of care (purposive sampling).

Project Specific Requirements:

1. Interest and knowledge of Aboriginal health.
2. Qualitative methods.

Project Length: Two semesters part-time.

Developing contemporary algorithms for monitoring myocardial infarction in Australia

Dr Lee Nedkoff - lee.nedkoff@uwa.edu.au

Background: Measuring population trends in myocardial infarction (MI) incidence and hospitalisation rates has been an important historical indicator of the effectiveness of coronary disease prevention. However, the use of new diagnostic biomarkers since the 2000s has impacted epidemiological monitoring of temporal trends in MI.

Outline: The study will quantify the impact of changes in cardiac biomarkers on trends in MI and test the feasibility of linking cardiac biomarker data to population-level hospitalisation data for ongoing monitoring of MI in Australia.

Methodology: A linked dataset containing hospital, emergency department, mortality and pathology data for all coronary heart disease presentations in Western Australia since 2000 is available. Classification of MI and each coronary heart disease subtype will be made according to ICD-coding and cardiac biomarkers, and rates and trends compared across each classification group.

Project Specific Requirements: Knowledge of evaluation frameworks, qualitative methods.

Project Length: Two semesters part-time.

The epidemiology and experience of rheumatic heart disease (End RHD in Australia: Study of Epidemiology – ERASE project)

A/Prof Judith Katzenellenbogen - judith.katzenellenbogen@uwa.edu.au

Background: Acute rheumatic fever (ARF) and rheumatic heart disease (RHD) persist as significant sources of health burden among Indigenous Australians. End RHD in Australia: Study of Epidemiology (ERASE) Project aims determine the baseline burden of ARF/RHD in Australia and to develop further insights into the progression and outcomes of the disease as a basis for improved monitoring. Other areas of investigation include health system costs, hospital service utilisation, medication adherence and factors affecting the management of these conditions in primary care.

Outline: A number of potential projects associated with the ERASE project are available for students, including epidemiological analyses and analyses related to health systems. Translation of findings will occur through the End RHD Coalition as well as dissemination of results to communities.

Methodology: The project uses a multi-jurisdictional linked database from multiple sources (hospital, primary health care, deaths, RHD register) as well as qualitative data on primary care systems to support RHD management. Midwives' data is currently being linked in as well. An appropriate methodology will be developed depending on the research question, available data and the level of skill/interest of the student.

Examples:

- Analysis of concurrent ARF/RHD and obstetric/pregnancy hospitalisations.
- Missed opportunities in the diagnosis of
- ARF in hospital (review administrative records of ARF/RHD diagnosed patients to identify whether ARF had not been diagnosed in previous emergency department and hospital encounters.
- Collection and analysis of ARF/RHD
- paediatric cardiology out-patient data over 20 years.
- Descriptive study of PHC data of patients
- diagnosed with ARF/RHD in NT.
- Development/evaluation of resources for dissemination of findings to Aboriginal communities (mixed methods).

- Qualitative studies of aspects of the
- management and experiences of ARF/ RHD.
- Development of a standardized set
- of recommended data items that facilitate comparability of RHD-related information in pregnant women from varied sources and for various purposes (Delphi method).

Project Specific Requirements:

- For linked data analysis, competence in SAS; R or SPSS or preparedness to learn quickly.
- For evaluation and mixed methods
- research, preparedness to learn qualitative methods.

Project Length: One semester full-time or two semesters part-time.

Describing infant outcomes among mothers diagnosed with Rheumatic Heart Disease

A/Prof Judith Katzenellenbogen - judith.katzenellenbogen@uwa.edu.au

Dr Mohammed Junaid - mohammed.junaid@uwa.edu.au

Background: Rheumatic Heart Disease (RHD) is the chronic heart damage arising from Acute Rheumatic Fever, caused by an autoimmune response to Group A Streptococcus infection. The burden of RHD is higher for women and risk of which escalates in pregnancy where the increased cardiac demands can unmask undiagnosed RHD, particularly in the 3rd trimester and immediately post-partum. While maternal outcomes have been documented, little is known about the immediate infant outcomes. The proposed study will examine perinatal outcomes among a cohort of mothers diagnosed with RHD in pregnancy using linked population datasets made available as part of the ERASE project. Outline:

- To describe perinatal characteristics of infants born to mothers with Rheumatic Heart Disease.
- To investigate demographic, reproductive and maternal medical/surgical history factors as determinants of infant outcomes.

Methodology: The End RHD in Australia: Study of Epidemiology (ERASE) project has assembled a data base of linked hospital, RHD register and Emergency Department from five States. The proposed study will use the midwives' registries in addition to ERASE project data base to describe and explain outcomes for infants of mothers with RHD in multiple Australian jurisdictions.

Study cohort will be constituted by mothers with RHD as identified from RHD register and hospital records while the comparison cohort will be mothers with a current or previous diagnosis of Acute Rheumatic Fever alone. The linked Midwives registry data will be used to describe infant outcomes that include gestational age, birth weight, intrauterine growth restriction, Apgar score, fetal distress and mode of delivery adopted at birth. The infant outcomes will be further stratified by demographic and preceding antenatal factors (smoking and pre-existing conditions), parity, plurality, RHD severity, and history of surgery (catherisations, and cardiac valve replacements), and use of bicillin (BPG) medication.

Project Specific Requirements: This is a linked data project, there is no field work component. Completion of Introduction to Linked Data Analysis and Biostatistics II is preferred. Clinical background advantageous but not essential.

Project Length: Two semesters part-time.

Development of an electronic phenotype for investigating chronic coronary disease

Dr Lee Nedkoff - lee.nedkoff@uwa.edu.au

Background: Coronary heart disease is a progressive and long-term condition resulting from atherosclerosis in the coronary arteries. It is the leading cause of death in Australia, resulting in 17,731 deaths in 2019, and costing the Australian health system \$2.4 billion in 2018-19. Many patients live with the chronic form of the disease, chronic coronary disease (CCD), for many decades, requiring long-term drug therapy and multiple diagnostic and interventional coronary procedures.

We don't know the true prevalence of CCD in Australia. While there are strong methodological approaches for measuring incidence and hospitalisations for acute coronary syndromes (ACS, comprising myocardial infarction (MI) and unstable angina), there is no evidence-based method for identifying CCD patients at a whole-population level in Australia. Without accurate prevalence estimates, there are limited data to inform health policy and service design regarding the effectiveness of secondary prevention therapies.

Outline: This study aims to bring together a broad scope of multi-jurisdictional Australian linked health data to develop a method for identifying people with chronic coronary disease (known as an electronic phenotype) and to investigate the burden and management of people with this disease.

Methodology: The study will use linked hospitalisation, emergency department, mortality, PBS and MBS data from multiple jurisdictions in Australia. Machine learning techniques will be used to develop the electronic phenotype; health service utilisation and medication adherence will be measured in the patient cohort.

Project Specific Requirements:

Requires some experience with using linked data and/or statistical software packages, e.g., SAS, STATA.

Project Length: Two semesters part-time.

Identifying the clinical risk factors for Rheumatic Heart Disease diagnosis in pre-school aged children

A/Prof Judith Katzenellenbogen - judith.katzenellenbogen@uwa.edu.au

Ingrid Stacey - ingrid.stacey@uwa.edu.au

Background: Rheumatic Heart Disease (RHD) is the chronic heart damage arising from Acute Rheumatic Fever, caused by an autoimmune response to Group A Streptococcus infection. The End RHD in Australia: Study of Epidemiology (ERASE) project reported RHD prevalence of 2648 per 100,000 people among <55-year- old Indigenous Australians living in the Northern Territory (NT). Here, 91% of prevalent RHD cases are in Indigenous people aged 15 years and older, but RHD has also been diagnosed in pre-school children. The proposed study will compare the clinical profiles of a 'pre-school' cohort to a 'school-aged' cohort in order to identify clinical risk factors associated with young age RHD onset.

Outline: What are the socio-demographic and clinical profiles of 'pre-school' vs 'school-aged' children diagnosed with RHD? How do the health care contacts differ between these two age groups of children?

Methodology: The ERASE project has assembled a data base of linked hospital, RHD register and Emergency Department records from five States.

The proposed study will use the ERASE project data base to describe and identify risk factors for 'pre-school' RHD onset (relative to 'adolescent' onset) in multiple Australian jurisdictions.

Cohorts of children with an ARF and/or RHD diagnosis ages <6 years (pre-school) and 6 -14 years (school-aged) will be identified from RHD register and hospital records.

A more detailed analysis will be undertaken of the NT patients, using PHC data from clinics covering 50% of the population.

Project Specific Requirements: This is a linked data project, there is no field work component. Completion of Analysis of Linked Health Data and Biostatistics I and proficiency in SAS and/ or R programming is preferred. Clinical background advantageous.

Project Length: One semester full-time or two semesters part-time.

Pharmacoepidemiology studies using the 10% PBS sample.

A/Prof Frank Sanfilippo - frank.sanfilippo@uwa.edu.au

Background: We have applied to obtain a 10% sample of data from the Pharmaceutical Benefits Scheme (PBS) with linkage to deaths. The dataset will provide a longitudinal source of records for medicines dispensed in Australian pharmacies from 2012 onwards. This will allow various analyses on use of medicines in Australia.

Outline: To investigate the use of specific groups of medicines in a 10% random sample of patients receiving medicines through the PBS in Australia.

Methodology: The PBS data contains information on medicines dispensed from Australian pharmacies, including hospital pharmacies that are registered with the PBS (i.e. all private and some public hospitals). Variables include age, sex, name and strength of the drug, quantity dispensed, ATC code, PBS item code, date of supply, date prescribed, beneficiary status (concession card, general beneficiary) and date of death. The dataset will be supplied on approval by the Department of Human Services. It consists of linked data of PBS records and matching death record from a random 10% sample of people in Australia. Various analyses can be completed using these data, with specific examples including: (i) use of psycho- active medicines in the elderly; (ii) use of low dose vs high dose statins by patient characteristics; (iii) patterns of medication use before and during the COVID-19 period (e.g. supply of hydroxychloroquine); (iv) use of medicines in the very old; (v) adherence of specific drug groups (e.g., anti-retroviral drugs, statins, beta blockers, antiplatelet agents).

Analysis will require identifying the specific drug groups of interest, applying multivariable regression methods, estimating medication adherence using the proportion of days covered (PDC) method, describing patient characteristics, and simple univariate and bivariate statistics. There is potential to publish the findings in a suitable journal.

Project Specific Requirements:

Knowledge of medicines and therapeutics would be an advantage, although an interest in this area would be sufficient, with additional training provided. Analysis will require use of multivariable regression methods. The data are linked and some knowledge or understanding of how to handle these data would be useful.

Project Length: One semester full-time or two semesters part-time.

Western Australian Heart Valves Study (WAVES)

A/Prof Tom Briffa - tom.briffa@uwa.edu.au

A/Prof Frank Sanfilippo - frank.sanfilippo@uwa.edu.au

Graham Hillis, Primeo Ng, Tom Gilbert, Royal Perth Hospital Clinical Trials Team

Background: To establish the WAVES registry and inform clinical practice on the treatment of valvular heart disease, improve patient outcomes, and design future trials which have global health implications.

Outline: Research Objective 1: Create a historical registry of all patients and outcome measures after surgical heart valve replacement and/or repair in one of the three tertiary public hospitals in Western Australia (WA) between 1 January 2010 and 31 December 2020 (retrospective cohort).

Research Objective 2: Create a new registry of all patients and outcome measures after surgical heart valve replacement and/or repair in one of the three tertiary public hospitals in WA from 1 January 2021 onwards with prospective periodic follow-up.

Methodology: A combination of data sources including local and national retrospective and prospective clinical/surgical quality registries, patient-reported measures, and routinely collected hospital morbidity and mortality collections.

Project Specific Requirements: Requires knowledge and competency with common data analytical software and in statistical regression.

Project Length: One semester full-time or two semesters part-time.

Understanding trends and patterns of medicine utilisation to manage cardiovascular disease.

A/Prof Frank Sanfilippo - frank.sanfilippo@uwa.edu.au

Dr Lee Nedkoff – lee.nedkoff@uwa.edu.au

Dr Derrick Lopez – derrick.lopez@uwa.edu.au

Keira Robinson - keira.robinson@uwa.edu.au

Background: Cardiovascular disease (CVD) is a leading cause of morbidity and mortality worldwide. In Australia, it accounts for 27% of deaths every year and around 1.2 million Australians have one or more heart or vascular conditions. One of the means of preventing and treating CVD is using evidence-based pharmacotherapies. These drug groups include blood pressure lowering drugs, lipid lowering drugs, and vasodilators, and they account for around one third of all Pharmaceutical Benefits Scheme (PBS) prescriptions in Australia. While there is some data available on supply trends of CVD medicines in Australia, there is limited research investigating other aspects of pharmacological management. In particular, most studies concentrate on trends in various measures for individual drug groups, with limited data on patterns in people taking multiple drugs. Little is known about the use of nitrates (a subgroup of the vasodilator category) and the patterns of use in combination with other CVD drug groups. Nitrates are an anti-anginal drug and some are highly specific for the management of coronary artery disease-related chest pain. Therefore, they could potentially be used to identify the portion of this patient group who are not hospitalised for their condition. However, we have limited data on patterns of use of this drug group, of different nitrates, and of how they are used in combination with other CVD drugs.

Outline: The primary aim of this project is to examine trends in the dispensing of PBS-listed CVD pharmacotherapies, stratified by age, sex and state. Specifically, the aims are to:

- Examine the dispensing trends of major CVD drug groups, including vasodilators, beta blockers, calcium channel blockers, agents acting on the renin-angiotensin system, and lipid modifying agents.
- Determine the prevalence and incidence of use of these drug groups.
- Determine the co-prescribing patterns for people using the CVD medications of interest.

Methodology: This study will utilise the PBS 10% sample dataset to examine trends and patterns in government-subsidised CVD pharmacotherapy use from 2005 to 2022. This dataset contains information on medicines dispensed from Australian pharmacies. Variables include age, sex, name and strength of the drug, quantity dispensed, PBS item code, supply date, prescribed date, beneficiary status and year of death. Various analyses can be conducted using

this dataset to understand trends and patterns in dispensing of CVD pharmacotherapies.

Project Specific Requirements: Knowledge of medicines and therapeutics would be an advantage, although an interest in this area would be sufficient, with additional training provided. Analysis will require use of multivariable regression methods and some knowledge or understanding of working with linked data.

Project Length: One semester full-time or two semesters part-time.

Acute Coronary Syndromes and Stroke

Dr Lee Nedkoff - lee.nedkoff@uwa.edu.au

Keira Robinson – keira.robinson@uwa.edu.au

Background: Acute coronary syndromes (ACS) occur when there is a reduction in blood supply to the heart, and include ST-segment elevation myocardial infarction (STEMI), non-STEMI and unstable angina. In 2020, 56,700 Australians aged 25 and over suffered an acute coronary event. Stroke is a known complication following ACS and is associated with increased morbidity and mortality. There were around 39,500 new and recurrent stroke events in Australia in 2020. Currently, age-specific incidence of stroke and long-term cardiovascular outcomes following hospital admission for ACS is unclear. A more accurate understanding of stroke risk in the ACS population is needed to inform health policies pertaining to stroke prevention strategies.

Outline: This study aims to describe the age-specific risk of stroke in people admitted to hospital with ACS. This may include estimation of:

1. age-specific stroke incidence and recurrence rates in the ACS population, stratified by sex.
2. short, medium, and long-term risk of stroke in the ACS population
3. the population attributable risk of stroke due to ACS.

Methodology: A linked dataset containing hospital, emergency department, and mortality data for all cardiovascular disease presentations in Western Australia since 1985 is available. A retrospective cohort of ACS patients will be constructed based on International Classification of Diseases (ICD) coding, and relevant statistical and regression analyses will be undertaken.

Project Specific Requirements:

This is a linked data project. Requires some experience using SAS, STATA or R programming, and completion of Epidemiology and/or Biostatistics units.

Project Length: Two semesters part-time.

Physical activity interventions targeting dog owners.

Dr Hayley Christian - hayley.christian@uwa.edu.au

Background: Almost half of all Australian households own a dog. Dog walking has been shown to be a potentially viable strategy for increasing the number of people (adults and children) who meet national physical activity recommendations.

Outline: This project will involve intervention research to examine the potential of dog walking and active play to improve physical activity levels, health and wellbeing. The project is likely to have significant implications for physical activity promotion and will involve working closely with key stakeholders, nationally and internationally.

Methodology: Qualitative; Quantitative community-based survey; Intervention research.

Project Specific Requirements:

- Ability to conduct quantitative / qualitative research.
- Excellent writing skills.
- Statistical analysis (SPSS and/or SAS).
- Ability to work as part of a team.
- Good interpersonal communication skills.

Project Length: Two semesters part-time.

Children's Physical Activity, Health and Development

Dr Hayley Christian - hayley.christian@uwa.edu.au

Background: This research forms part of the PLAYCE program of research – Places Spaces & Environments for Children's Physical Activity. PLAYCE examines 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: at home, around the neighbourhood and whilst attending early childhood education and care (ECEC). This research will provide information on how best to create healthy home, neighbourhood and ECEC environments.

Outline: The project involves qualitative research with children, parents, staff and key stakeholders in the ECEC setting, as well as quantitative research measuring young children's movement behaviours (physical activity, sedentary time and sleep), overweight/obesity, development and the influence of the ECEC physical, policy and social environment. There is scope to evaluate the impact of policy and practice-based interventions to improve children's movement behaviours at ECEC.

Students have the option to work on the PLAYCE cohort study which details patterns of movement behaviours, and the effect movement behaviours have on weight status and socio-emotional, cognitive, and motor development across childhood (2-9 years).

Methodology: Literature Review; Quantitative/qualitative research.

Project Specific Requirements:

- Ability to conduct quantitative and/or qualitative research.
- Excellent writing skills.
- Statistical analysis (SPSS and/or SAS).
- Ability to work as part of a team.
- Excellent interpersonal and communication skills.

Project Length: Two semesters part-time.

How do environmental and pharmacological exposures during pregnancy impact maternal and child health?

Dr Erin Kelty - erin.kelty@uwa.edu.au

A/Prof Caitlin Wyrwoll - caitlin.wyrwoll@uwa.edu.au

Background: Exposure to extreme heat, medications, pollution, alcohol, and illicit drugs during pregnancy can have a profound impact on maternal, neonatal and child health.

For a lot of these exposures, we are only just beginning to understand their potential impact. This research is becoming increasingly important, particularly with increasing global temperatures and frequency/severity of heat waves, and the increasing use of medication during pregnancy.

Understanding the impact of exposure to environmental and pharmacological factors during pregnancy is important for working towards mitigating hazardous risks and ensuring the health of pregnant persons and their children.

Outline: We currently have several projects with potential for student involvement. These include:

- Examination of the impact of prenatal exposure to extreme heat on child health (e.g. in terms of immune related conditions such as asthma, allergies, infections).
- Examining the maternal and neonatal safety associated with the use of medications during pregnancy (particularly mental health medications).
- Examining the use of contraceptives in women prescribed medications that are not safe to use in pregnancy.

However, we do have additional project available, which we are happy to discuss.

Methodology: Our research primarily involves the use of large retrospective cohort, which are linked with state health data (e.g. hospital, deaths). Typically, this involves the use of state-wide perinatal records which are linked with exposure data (e.g. weather data or medication dispensing data) to identify exposed neonates. Linked state health data can then be used to examine outcomes like perinatal mortality, congenital anomalies, hospitalisation. However, there is also some scope for systematic/scoping reviews and potentially a qualitative study within the same themes.

Project Specific Requirements: Completion of Biostats 1 is preferred for quantitative projects.

Project Length: Two semesters part-time.

Parent engagement in the Play Active Program

Dr Hayley Christian - hayley.christian@uwa.edu.au

Background: Daily physical activity is critical during the early years of life for facilitating children's health and development. Only one in three Australian children aged 2 to 5 achieve the recommended level of three hours of daily physical activity. Early childhood education and care (ECEC) services are a key setting to intervene to increase physical activity.

Outline: The student will be part of a multi-jurisdictional NHMRC funded project (Play Active) and have the opportunity to work with eight partner agencies.

The project will use qualitative research to identify barriers and enablers for improving parent-child, and parent-educator engagement around children's physical activity.

This will involve exploring, identifying and better understanding the factors that strengthen the educator-parent engagement process to boost children's physical activity in the home and ECEC environment.

Methodology: Literature review; Qualitative.

Project Specific Requirements:

- Ability to conduct quantitative/ qualitative research.
- Statistical analysis (SPSS and/or SAS).
- Ability to work as part of a team.
- Excellent interpersonal, written, and oral communication skills.

Project Length: Two semesters part-time.

Health and development of children of incarcerated mothers

Dr Megan Bell – megan.bell@uwa.edu.au

Prof David Preen – David.preen@uwa.edu.au

Background: Despite being recognised as one of the most vulnerable groups in society, the health and wellbeing of children of prisoners in Australia is noticeably absent from policy and practice. There are no official statistics on the number of children with a mother in prison, and limited population-level research on their health and developmental outcomes, in Australia and internationally. In Western Australia, there are no dedicated services supporting children when their parent goes to prison. An empirical evidence base is crucial for developing appropriate health-focussed policies, guidelines, referral pathways, and staff training that effectively respond to the needs of children of incarcerated mothers.

Outline: This project uses over 30 years of whole-population de-identified linked administrative data, enabling the investigation of outcomes for the children of all female prisoners without compromising privacy.

Project aims include:

1. Quantify the number of children in WA with an incarcerated mother and describe their developmental profiles.
2. Determine the impacts of maternal incarceration on children's physical and mental health outcomes into adolescence and young adulthood; and
3. Determine the associations between when, how often, and how long mothers are incarcerated with the health and developmental profiles of their children. Research findings will inform policies and services aimed at supporting positive health outcomes for children of incarcerated mothers.

Project Specific Requirements:

- Completion of PUBH5785 Introductory Analysis of Linked Health Data, or equivalent experience.
- Competence in using SAS, Stata, or R for data analysis.
- Good quantitative skills, including experience working with large complex datasets.

Project Length: Two semesters part-time.

Understanding and improving the mental health of young people

Professor Ashleigh Lin - ashleigh.lin@uwa.edu.au

Background: Ashleigh is open to supervision on a range of projects in the youth mental health space, using qualitative and quantitative methodologies.

Outline: Ashleigh's research program focuses on understanding and improving the mental health of young people. She has a strong focus on LGBTQA+ and trans youth mental health, and other marginalised groups. Ashleigh is open to discussing new project ideas with potential students and encourages people to approach her.

Methodology: Some of Ashleigh's projects include:

Using the Raine data to understand the onset of mental illness in youth.

A cohort study of trans young people attending the Gender Diversity Service at Perth Children's Hospital.

Evaluation of the Luminos Project, a residential service for young people with experiences of suicidal thoughts and behaviours.

Clinical trials of cannabidiol (CBD) to reduce symptoms across mental illnesses.

Other data is available for analysis from studies of LGBTQA+ youth mental health.

Ashleigh uses mixed methods, thus will consider qualitative and quantitative studies.

Project Specific Requirements: Depends on the project selected.

Project Length: Depends on the student and the project selected.

Smoking, Vaping and pouches, Oral Health or Dental, Service Projects, Craniofacial defects.

Professor Linda Slack-Smith - linda.slack-smith@uwa.edu.au

Background: Smoking is a major health issue in our society and globally. There is still limited epidemiological data in terms of dental outcomes – largely because most access to data is limited. This is an important opportunity to add to the evidence base around smoking, oral health, dental services or dental hospital admissions.

Outline: There are a range of potential projects around smoking and oral health either quantitative qualitative or translational/policy based. The aim would be to describe dental visit patterns or dental hospital admissions for particular dental diagnosis (such as dental injury, dental caries, craniofacial outcome) using existing data. Some of the data suitable for smoking outcomes.

Methodology: The project would use standard epidemiological approaches.

Project Specific Requirements: Requires strong epidemiology and biostatistics skills for most projects.

Project Length: Normally two semesters part-time, but potentially full time.

Public health issues in formal and informal childcare for children, parents, grandparents and workplaces

Prof Linda Slack-Smith - linda.slack-smith@uwa.edu.au

Members of the Equity and Oral Health Group or collaborators

Background: Childcare plays a significant role in our society, allowing women to return to work or study and for many children to experience good quality care during an important stage of development. There are important issues around health of children (for example diet, physical injuries, immunisation, medication use, infectious diseases, general health), parents (managing work and family responsibilities, parent health) and childcare workers (health, turnover, experience of racism). In addition to formal childcare (centres and family day care), there is significant care provided by grandparents, which is unregulated and often places high demands on our older adults.

Outline: To explore one aspect of health in childcare.

Methodology: Options include systematic or realist reviews, qualitative research, quantitative research, policy exploration.

Project Specific Requirements:

- May require Working with Children Check.
- Basic knowledge of qualitative research approaches.
- Literature searching skills.
- Good communication skills.

Project Length: Normally two semesters part-time, but potentially full time.

Social inequities and health

Prof Linda Slack-Smith - linda.slack-smith@uwa.edu.au

Various team members and collaborators.

Background: Quotes “The measure of a civilisation is how it treats its weakest members” and “The greatness of a nation can be judged by how it treats its weakest member” have both been attributed to Gandhi.

Our group is interested in many aspects of inequities and there are many potential projects. The recent extraordinary experiences of the pandemic (COVID-19) have demonstrated the vulnerability of our society where people are marginalised. Inequities occur across the life-course from access to safe contraception to how we treat older adults. Potential projects also include oral health in primary care and role of inter-professional collaboration.

Outline: There are a range of potential projects to explore inequities and health (potentially with the influence COVID-19 or not) in different groups.

Examples of types of projects include:

- Contextual factors and smoking
- Projects related to the commercial determinants of health.
- Barriers and enablers to people with mental health disorders in accessing health services?
- What have been the outcomes of COVID-19 on CALD communities accessing health and dental care?
- What do adults with CALD backgrounds consider effective ways of communicating public health messages to their communities? Who do they trust?
- What influence does age and gender have?
- How have CALD communities communicated about COVID-19?
- Health, diet or oral health in women and children in prison (with Dr Jocelyn Jones, Curtin University).
- Breastfeeding, birth and perinatal issues
- Diabetes care in older adults
- Physical activity in older adults
- Health and dental care for those with HIV
- Other groups may include the aged, those with disability, refugees and others.

Methodology: Qualitative or quantitative.

There are a range of potential projects investigating and addressing health inequities (oral health or otherwise) across the lifespan (including child or older adult) and in various groups: Aboriginal Australians, people with disability, people with mental health issues, young children, the aged, those in residential aged care refugee and migrant groups, rural Australians, homeless and those with co-morbidities.

Project Specific Requirements:

Skills required will depend on the particular project.

- Ability to work independently and under direction.
- Interest in inequities and social justice.
- Working with Children Check (possibly)
- Basic knowledge of qualitative research approaches.
- Literature searching skills.
- Good communication and project management skills.

Project Length: Normally two semesters part-time, but potentially full time.

Sugar (including Commercial Determinants of Health)

Prof Linda Slack-Smith - linda.slack-smith@uwa.edu.au

Various team members and/or collaborators

Background: Sugar has long been associated with poor oral health and obesity, yet it remains a common part of our diet. There are a range of potential projects.

Examples may include qualitative interviews to investigate community perceptions and/or investigation of the role of the media or policy in promoting sugar despite evidence of its relationship to significant health problems.

There is potential to look at various groups - for example preschool, ageing etc. (Project could be systematic review, qualitative, quantitative or mixed methods studies).

There is an important opportunity to investigate commercial determinants of health in relation to sugar and other areas.

Outline: Potential projects may include:

- a Literature Review or scoping review to determine the context in which sugar/oral health is portrayed in the media using quantitative and qualitative approaches (frequency of use, terminology used, contexts, related terms in text).
- determining community perceptions about the role of sugar in diet and meanings associated with it e.g., rewards in various groups such as parents/older adults/refugees etc (perceived risks, role in health).
- conducting a comparative analysis of similarities and differences between groups.

Methodology: There are options to undertake simple content analysis of news media, collect quantitative data or to undertake qualitative interviews depending on skills and preferences of students. News media would be extracted using Factiva or similar approach.

Project Specific Requirements:

- May require Working with Children Check.
- Basic knowledge of qualitative research approaches.
- Literature searching skills.
- Good communications skills.

Project Length: Normally two semesters part-time, but potentially full time.

Global Health

There are many ways to get involved with global health research at SPGH. For examples of specific projects, you can see the opportunities below. If you have your own interests that aren't mentioned here, it may be possible to develop your own research project, using secondary data from global data repositories, or by undertaking a literature review or scoping review of existing evidence. Both Dr Dani Barrington (dani.barrington@uwa.edu.au) and A/Prof Tim Robertson (tim.roberton@uwa.edu.au) would be happy to speak with you about your ideas. Across the School, we have expertise to support global health research in water, sanitation and health (e.g. menstrual health, toilets, incontinence), child and maternal health, nutrition, health workforce analysis, and health systems strengthening.

Situating menstruation within the dimensions of sexual health, sexual wellbeing, sexual justice and sexual pleasure.

Dr Dani Barrington – dani.barrington@uwa.edu.au

Dr Inga Winkler, Associate Professor in human rights at Wageningen University

Professor Carmen Logie, Canada Research Chair in Global Health Equity and Social Justice with Marginalized Populations

Background: While early efforts in menstruation research, policy and practice focused on menstrual hygiene management, recent initiatives have advanced an understanding of menstrual health within a comprehensive approach to sexual and reproductive health and rights. This includes recognition of both the biological linkages between menstrual health and sexual and reproductive health, such as the impact of menstrual disorders on reproductive health, and socio-cultural linkages such as the impact of menstruation-related stigma on socio-economic outcomes and shame. Yet, to date the focus has been on establishing the linkages with reproductive health to the neglect of sexual health.

Outline: This project will be a systematic review and qualitative analysis of the literature, developing a model by which we can better understand how the WHO's sexual health framework can be applied to menstrual health, beyond menstruation as 'failed reproduction'.

Methodology: Systematic literature review (no collection of primary data)

Project Specific Requirements: 70 or above in PUBH5805: Qualitative Research Methods.

Project Length: One semester full-time or two semesters part-time.

Developing an mHealth intervention to promote antenatal health and immunisation.

A/Prof Julie Saunders - julie.saunders@uwa.edu.au

Adjunct Prof Jane Heyworth - jane.heyworth@uwa.edu.au

Background: mHealth initiatives are becoming more prominent in low- and middle-income countries as a means of engaging residents in public health activities. The Kaski District Public Health Office (DPHO), located in Pokhara, Nepal wish to develop more effective ways of delivering health reminders around antenatal care and vaccinations to persons living in rural Nepal. Mobile phones are commonly used in Nepal, thus mHealth initiatives may be an efficient method of reaching families living in rural areas. DPHO and Kanchan Nepal, our partner organization, will provide advice on the local context, including antenatal care and immunisation schedules.

Outline: To develop a culturally relevant mHealth intervention to convey specific health messages to rural Nepalese women. This includes a number of smaller projects, including:

- A scoping review the of the types of mHealth interventions in low- and middle-income countries.
- A systematic review of the effectiveness of mHealth interventions in low- and middle-income countries.
- Determining the type of health messages that might be most effectively conveyed by an mHealth intervention.
- Developing culturally appropriate and engaging messages with input from the local community.
- Piloting and evaluating the health messages for the mHealth intervention among the local community.

Methodology: The student will work with DPHO and Kanchan Nepal to determine the schedule for delivery of health messages and seek their input into the appropriate style of message. The project may include interviews with staff of the DPHO and community health posts as well as focus groups with rural community members. The student will prepare a project plan for the mHealth intervention that includes recruitment, access, messages and ongoing or longer-term evaluation.

Project Specific Requirements: Completion of PUBH4401 and PUBH4403 with mark >70.

Project Length: Reviews full time or part time, message development, piloting and evaluation part time.

Lives Saved Tool (LiST) for modelling child and maternal health outcomes in low- and middle-income countries.

A/Prof Tim Robertson - tim.roberton@uwa.edu.au

Background: The Lives Saved Tool (LiST) is a mathematical modelling tool for estimating changes in child and maternal health. It is widely used by Ministries of Health and global organisations, such as the World Health Organisation, UNICEF, and the World Bank, to model the impact of programs on child, neonatal, and maternal mortality, and birth outcomes such as preterm and small for gestational age. Countries use LiST to help prioritise interventions, evaluate health programs, and develop their national health strategies.

Outline: Research projects involving LiST typically aim to estimate the number of lives saved by increasing the coverage of basic health interventions in low- and middle-income countries. Using LiST, we can answer questions such as: What reduction in child mortality can be attributed to a country's health strategy? Which interventions were responsible for saving the most lives? How many maternal deaths could be prevented over the next 10 years by scaling-up coverage of basic obstetric interventions?

If you are interested in child and maternal health in a specific country, or have a specific analysis question in mind, we can likely develop a research proposal that matches your interests.

Methodology: Most LiST analyses involve secondary data from large-scale household surveys, such as DHS or MICS. We put this data into LiST, enter additional parameters for a scale-up scenario, and use LiST to generate results that will be useful for policy makers.

Project Specific Requirements: Anyone who is interested in child and maternal health is welcome to use LiST. Although it is a mathematical modelling tool, it does not require advanced quantitative skills. Most students will be able to start using LiST after only a few hours.

Project Length: One semester full-time or two semesters part-time.

Migration widows: The impact of the international migration of workers on those who stay behind.

A/Prof Julie Saunders - julie.saunders@uwa.edu.au

Adjunct Prof Jane Heyworth - jane.heyworth@uwa.edu.au

Background: Nepal has a long history of labour migration, with an estimated 3.5 million Nepalese working abroad (Simkhada et al. 2017). Labour migrants from Nepal are predominantly males; 15% of all economically active males (aged 15 years and older) compared with 2% of Nepali females (Maharajan, Bauer, Kner, 2012). The majority of these males are from agricultural backgrounds.

Despite research into the health risks for those who migrate for work, there is little research on the health and wellbeing impacts for those who stay behind. However, an understanding of the contextualised impact on women and families left behind is important.

Outline: To estimate the extent of social, health and gender impacts of the international migration of male workers from Nepal on the women and families left behind. Specific objectives are to:

- Develop a questionnaire based upon the results of recent qualitative research.
- Pilot the questionnaire with 100 women in the Central (Kathmandu) and Western (Pokhara) Development Regions in Nepal.
- Undertake a reliability study with a sub sample of this population.
- Estimate and compare the prevalence of key impacts among those left behind with those whose partner has not migrated for work.

Methodology: We have undertaken qualitative research with women whose partners have migrated for work and the current study will build upon those findings to develop a questionnaire.

A quantitative survey of 100 women who have a child aged under 5 will be undertaken. The sample will be stratified on the basis of whether a partner has migrated for work in the past 12 months. A sub-sample of 50 women will participate in a test-retest reliability study completing the questionnaire on two separate occasions, two to three weeks apart.

The student will be supported by a local research assistant to recruit the sample and administer the questionnaire. The student will analyse and interpret the data and write up these findings. The student will prepare a report the findings to be provided to the NGOs, prepare a video of the key messages of this research and a conference abstract.

Project Specific Requirements: Completion of PUBH4401 and PUBH4403 with mark >70

Project Length: Two semesters part-time.

Why do drinking water projects using desalination technology keep failing?

Dr Dani Barrington - dani.barrington@uwa.edu.au

Dr Mat Francis (Moerk Water)

Background: In an effort to provide clean drinking water to vulnerable populations whose only available water source is salty, small scale desalination units have been installed by aid agencies, governments and well-meaning individuals around the world. This is particularly true in Pacific Island Countries (PICs) where freshwater is severely lacking due to shifting climate patterns. However, many desalination units have stopped working in PICs shortly after installation, not only failing to achieve their aim of sustainable freshwater provision, but also leaving communities to deal with defunct units and the associated solid waste.

Outline: In communities where desalination is key to providing clean drinking water, what is necessary to be able to do so in a sustainable manner?

Methodology: Interviews and/or systematic document review.

Project Length: One semester full-time or two semesters part-time (must be part time if collecting primary data).

Understanding drivers of menstrual stigma from menarche to post-menopause

Dr Dani Barrington – dani.barrington@uwa.edu.au

Dr Inga Winkler, Associate Professor in human rights at Wageningen University

Professor Carmen Logie, Canada Research Chair in Global Health Equity and Social Justice with Marginalized Populations

Dr Julie Hennegan, Co-lead Adolescent Health, Burnet Institute

Background: Whilst many studies have documented the negative impacts of menstrual stigma on groups and individuals, few have investigated how this stigma perpetuates through society, particularly in the form of systemic violence. If we are to dismantle menstrual stigma we need to understand its roots.

Outline: This project will be a systematic review and qualitative analysis of the literature to inform the development of a research instrument to understand how people of all genders are involved in perpetuating menstrual stigma and its negative impacts.

Methodology: Systematic literature review (no collection of primary data)

Project Specific Requirements: 70 or above in PUBH5805: Qualitative Research Methods

Project Length: One semester full-time or two semesters part-time.

Effectiveness of high-sensitivity troponin in the investigation and management of chest pain in the emergency department

Dr Siobhan Hickling - siobhan.hickling@uwa.edu.au

A/Prof Tom Briffa - tom.briffa@uwa.edu.au

A/Prof Frank Sanfilippo - frank.sanfilippo@uwa.edu.au

Background: To determine the impact of switching from non-high sensitivity to high sensitivity Troponin assays on (i) resource utilisation and clinical management, (ii) 30-day and 1-year clinical outcomes, and (iii) cost-effectiveness in a single public tertiary hospital in Metropolitan Perth.

Outline:

Research Objective 1 (RO1):

Compare overall and sex-specific 30-day and 1-year outcomes for each of death, heart attack, stroke, heart failure, or the combination of cardiovascular events, for pre (non-high sensitivity Troponin) and post (high sensitivity Troponin) period patients.

Research Objective 2:

Evaluate overall and sex-specific cost-effectiveness of non- high sensitivity Troponin versus high sensitivity Troponin testing at 1 year in the emergency department setting for patients who present with suspected heart attack.

Methodology: A combination of data sources involving a local and national retrospective cohort.

Project Specific Requirements: Requires knowledge and competency with common data analytical software and in statistical regression.

Project Length: One semester full-time or two semesters part-time.

Linking for Life: Enhancing pathways to well-being for all Australians

Prof David Preen - david.preen@uwa.edu.au

Dr Rebecca Glauert - rebecca.glauert@uwa.edu.au

Background: The Linking for Life Project will identify pathways to wellbeing and better social outcomes across the life- course for high-risk/vulnerable individuals and their families to streamline service provision, improve outcomes and identify cost-efficiencies across government agencies. The work will expand cross- sectoral data linkage capability, enhancing research capacity to generate evidence- based policy to improve integrated service delivery across government.

The project involves the analysis of longitudinal, whole-population, genealogically linked data, across seven government departments in order determine pathways (across individual, family, community and system levels) that reduce vulnerability to adverse outcomes including social disadvantage, child abuse and neglect, mental illness, poor educational attainment, justice system involvement, and restricted access to public services.

Outline: Research questions in this project are categorised under three intersecting domains:

1. Resilience and overcoming disadvantage.
2. Families and Intergenerational Effects.
3. Aboriginal Wellbeing,

With the primary aims of the current program being to:

- Determine pathways that reduce vulnerability to adverse outcomes and restricted access to public services.
- Identify critical transition points to target prevention and intervention strategies across government sectors; and
- Identify factors associated with resilience in disadvantaged groups to improve intergenerational outcomes.

Methodology: The sub-projects developed under this program of work will utilise up to 40 years of whole-population, genealogically linked data, across seven government departments including the WA Dept. of Communities, Dept. of Justice, WA Police, Dept. of Education, Dept. of Health, Mental Health Commission and the Commonwealth Dept. of Education and Training.

Statistical analysis and multivariate modelling of these data will be undertaken using SPSS, Stata or SAS to address the above-mentioned research aims.

Project Specific Requirements:

- Knowledge of epidemiology and biostatistics.
- Completion of PUBH5785 Analysis of Linked Health Data or equivalent prior experience,
- Experience with writing statistical syntax to complete data analyses.

Project Length: One semester full-time or two semesters part-time.

Survey of High Impact Psychosis (SHIP) projects

The SHIP survey took place in 2010 and is one of the largest and most comprehensive face- to-face assessments of psychotic disorders undertaken in Australia and internationally. Its main aim was to collect prevalence and profile data on a representative Australian sample of men and women with psychotic illness in contact with public mental health treatment services and NGOs.

Over 1500 data items were collected from 1825 participants covering, among others: education, housing, employment, income; psychopathology; cognition; functioning and quality of life; service utilisation; medication use; and physical health (including fasting blood tests). Students interested in undertaking epidemiological projects using the SHIP data should contact *Assist/Prof Anna Waterreus* – anna.waterreus@uwa.edu.au

The Raine Study

The Raine Study has a unique multigenerational and multidisciplinary data holding from pre-birth to middle age across 4 generations. Data is available from 14 different research areas across physical health, mental health, lifestyle and genetics as well as biological resources and cohort methods. Our data repository is added to with every new follow-up study, growing in value with time and usage. What we have learned so far has changed health outcomes, delivered economic and social benefits on a global basis, and helped enhance understand of disease and wellbeing across generations.

The Raine Study has a proud record of supporting and investing in the next generation of researchers. Data is available for use at low- or no cost to UWA students and researchers, and a number of the Raine Study's Special Interest Group research leaders are based at UWA and its affiliates. Student and Early Career Researchers are encouraged to participate in the Raine Study's annual Symposium (scientific meeting), with prizes available for the best presentation in various categories. The Raine Study itself does not supervise Dissertation projects, but if you are interested in undertaking a study that makes use of their data, please contact the Dissertation Coordinator, Dr Dani Barrington – dani.barrington@uwa.edu.au, to discuss your project idea. She can help you identify whether there are suitable SPGH Coordinating Supervisors available.

For further information on the Raine Study, visit <https://rainestudy.org.au/information-for-researchers/>.



the
**Raine
Study**

One of us
could change
your life

raiestudy.org.au

A unique data holding from pre-birth to middle age
FREE or REDUCED FEES to UWA researchers



17
follow-ups

33
years

4
generations

2,900

pregnant women
recruited (Gen1)

2,868

children born into the
study (Gen2)

600+

offspring born to
Gen2 (Gen3)

30,000

pieces of data
per participant

30 million

pieces of genetic
information per participant

Data available across 14 Special Interest Group
research focus areas

PHYSICAL
HEALTH

MENTAL
HEALTH

LIFESTYLE

GENETICS

BIOLOGICAL RESOURCES & COHORT METHODS
DATA ACROSS ALL SIGS



Investigating the health and social outcomes of children exposed to family and domestic violence.

Dr Carol Orr - carol.orr@uwa.edu.au

Background: Despite the high prevalence of family and domestic violence (FDV), it is only in recent years that significant steps have been made to understand the impact of the exposure on children. Much of the existing research on the outcomes of children exposed to FDV is limited in its scope. Additionally, the tendency to focus on children whose mothers are involved in specialist FDV services only represent a subsection of those exposed in the wider community. Linked administrative data present an opportunity to address these issues by merging individual unit-records for the entire population from a variety of sources, enhancing the potential to identify the outcomes of children exposed to FDV at the population level.

Outline: A number of potential projects are available utilising our dataset, including epidemiological analyses of different health and social outcomes of children exposed to FDV.

Methodology: The project is a retrospective cohort study utilising linked administrative datasets including hospital and police data.

Project Specific Requirements:

- Good statistical knowledge and skills.
- Competent in SAS or equivalent.

Project Length: One semester full-time or two semesters part-time.

Social Media use and Mental Health

Dr Cecily Strange - cecily.strange@uwa.edu.au

A/Prof Kevin Murray - kevin.murray@uwa.edu.au

Background: The potential impact of social media on mental health is gathering interest topically, in education and health. Literature indicates several benefits from online communication through social media, including reduced isolation for many people. This has been particularly evident during the Covid-19 pandemic. However, there is a body of research where social media use has been found to be negatively associated with mental well-being for adults, for adolescents, and cautionary views indicating use can result in increased isolation and negative social comparison. Therefore, it is important to further examine the relationships between social media and mental health.

Outline: This research will investigate the potential bi-directional relationships between mental health and social media. The study will use data from the children of the Raine study who are referred to as the second generation and are now adults. The data for this study will be from the questionnaire data collected at 28 years (Gen2_28).

Methodology: To investigate the potential bi-directional associations between variables measuring mental health and social media (internet socializing using smart phones and computers) use for young adults using Raine Study data from Gen2_28.

Covariates include – demographics, parenthood, technology use, health and physical activity, sleep, self-perception, body image and risk-taking behaviour.

If there is interest and scope within student project data from earlier Gen2 questionnaires can be included.

Cross sectional bi-directional analyses for each of Gen2_28 data will look at correlates of mental health outcomes with specific focus on social media use. Analyses required include descriptive statistics, cross tabulations, and linear models and generalized linear models to examine the relationships between mental health outcomes and social media use adjusting for demographics, and potential confounders such as lifestyle variables.

Project Specific Requirements:

- Good statistical knowledge and skills.

Project Length: One semester full-time or two semesters part-time.

Evaluation of a physical activity intervention for people experiencing homelessness

Dr Claire Boulange – claire.boulange@uwa.edu.au

A/Prof Julie Saunders – julie.saunders@uwa.edu.au

Background: This research is in collaboration with On My Feet (OMF), an Australian registered not for profit organisation providing free running and fitness training to individuals experiencing homelessness. OMF has developed a 12-week intervention program designed to empower participants to achieve self-sufficiency and independence through exercise, community support and education, as well as to improve their mental and physical health. This research project aims to assess the effectiveness of the program in realizing these goals and the impact it has on the lives of individuals experiencing homelessness.

these goals and the impact it has on the lives of individuals experiencing homelessness.

Outline: To conduct the baseline, mid-study, and final assessments and collect quantitative data on health parameters, well-being, physical activity levels, nutrition and other relevant factors.

Methodology: Collect data at the beginning, midway, and end of the 12-week intervention program on the participants - people experiencing homelessness, aged 18 – 75, living in shelters or temporary or government-subsidized homes who have previously experienced homelessness and who have been with On My Feet for less than 3-months. The data will be collected via questionnaires, cardiovascular endurance tests, and vital sign measurements. The data will then be analysed, and the findings reported.

Project Specific Requirements:

- Interest in physical activity and physical activity assessment.
- Ability to conduct quantitative research.
- Excellent writing skills.
- Experience with vulnerable populations.
- Ability to work as part of a team.
- Good interpersonal communication skills.

Project Length: Two semesters part-time.

Investigating the experience of loneliness among people experiencing homelessness and the impact of a physical activity program.

Dr Claire Boulange – claire.boulange@uwa.edu.au

A/Prof Julie Saunders – julie.saunders@uwa.edu.au

Background: This research is in collaboration with On My Feet (OMF), an Australian registered not for profit organisation providing free running and fitness training to individuals experiencing homelessness. OMF has developed a 12-week intervention program designed to empower participants to achieve self-sufficiency and independence through exercise, community support and education, as well as to improve their mental and physical health. This research project aims to assess the effectiveness of the program in realizing these goals and the impact it has on the lives of individuals experiencing homelessness.

Outline: To investigate the issue of loneliness among people experiencing homelessness and to examine the impact of the 12-week intervention program designed by OMF on this issue.

Methodology: Collect data on loneliness and social isolation at the beginning, midway, and end of the 12-week intervention program on the participants - people experiencing homelessness, aged 18 – 75, living in shelters or temporary or government-subsidized homes who have previously experienced homelessness and who have been with On My Feet for less than 3-months. The data will be collected via questionnaires and focus groups.

Project Specific Requirements:

- Strong interest in qualitative research.
- Data analysis and qualitative research skills.
- Excellent writing skills.
- Experience with vulnerable populations.
- Ability to work as part of a team.
- Excellent interpersonal communication skills.

Project Length: Two semesters part-time.

Measuring the cost-effectiveness of a physical activity and education program for people experiencing homelessness.

Dr Claire Boulange – claire.boulange@uwa.edu.au

A/Prof Julie Saunders – julie.saunders@uwa.edu.au

Background: This research is in collaboration with On My Feet (OMF), an Australian registered not for profit organisation providing free running and fitness training to individuals experiencing homelessness. OMF has developed a 12-week intervention program designed to empower participants to achieve self-sufficiency and independence through exercise, community support and education, as well as to improve their mental and physical health. This research project aims to assess the effectiveness of the program in realizing these goals and the impact it has on the lives of individuals experiencing homelessness.

Outline: To conduct a Cost-Benefit Analysis to compare the 12-week intervention program's costs to the potential economic benefits. This research will quantify the costs and benefits associated with the intervention and compare them to the costs and consequences of homelessness without the intervention.

Methodology: Collect cost data related to the program and estimate the economic consequences of homelessness, such as preventable diseases and chronic conditions. Perform a CBA, with sensitivity analysis, and prepare a report with recommendations.

Project Specific Requirements:

- Foundations in health economics.
- Strong analytical and quantitative skills.
- Excellent writing skills.
- Statistical analysis.
- Experience with vulnerable populations.
- Ability to work as part of a team.
- Good interpersonal communication skills.

Project Length: Two semesters part-time.

Acceptability and effectiveness of HIV pre-exposure prophylaxis and antiretroviral treatment in at-risk populations.

Dr Barbara Nattabi - Barbara.nattabi@uwa.edu.au

Background: Four decades into the HIV pandemic, countries such as Australia are on track to virtually eliminate the transmission of HIV, using several innovative interventions including injectable treatments and pre-exposure prophylaxis (PREP). However, there is risk that vulnerable populations world over will continue to be at risk of HIV transmission and unable to access these latest and highly effective treatments/prophylaxis. These populations include adolescent girls in Sub-Saharan Africa, Indigenous populations, injecting drug users, and culturally and linguistically diverse populations in high income countries. This project aims to assess acceptability and effectiveness of all forms of PREP and treatment interventions in vulnerable populations.

Outline: The aim of this project is to conduct a systematic review of literature on all forms of pre-exposure prophylaxis including oral, injectable, implants, and HIV antiretroviral treatment, oral and injectable, among at risk populations including young women in low-income countries, Indigenous and First nations populations, injecting drug users, and culturally and linguistically diverse minority populations in high income countries. This study will explore the acceptability and effectiveness of these interventions and studies reviewed will include both quantitative and qualitative studies.

Methodology: Systematic literature review

Project Specific Requirements:

- Literature searching skills.
- Excellent writing skills
- Ability to conduct quantitative and or qualitative research.
- Ability to work as part of a team.
- Excellent interpersonal and oral communication skills
- Interest in communicable diseases

Project Length: One semester full-time or two semesters part-time.

How young people with intellectual disability and their families navigate the onset of menstruation

Dr Dani Barrington - Dani.barrington@uwa.edu.au

Jess Keeley, The Kids Research Institute

Thom Nevill, The Kids Research Institute

Background: The onset of puberty can be challenging for all adolescents and their families, but particularly so where the young person has intellectual disability.

Outline: We are offering two qualitative research projects which together will help us understand how young people with intellectual disability can be better supported through menarche, early menstruation and the associated reproductive-decision making:

- Speaking with young people with intellectual disability and their caregivers
- Speaking with medical professionals and other experts

Methodology: Semi-structured interviews with young people, caregivers and professionals

Project Specific Requirements: May require working with children check if interviewing young people.

Project Length: Two semesters part-time.

Understanding the mental health of LGBT international students: A minority within a minority

Prof Ashleigh Lin - Ashleigh.lin@uwa.edu.au

Shawn Raphael Tan - Shawnraphael.tan@research.uwa.edu.au

Background: Mental ill health is a pressing health issue faced by young people globally. Of this vulnerable age group with low access to mental health support, there is a large sub-population of people that are at heightened risk of mental ill health in Australia, namely, international students. International students face a myriad of unique challenges, stressors, and risk factors that influence their mental health. LGBT international students are a minority within a minority. We aim to understand how their mental health differs from other international students and domestic students.

Outline: This study will quantify the impacts of modifiable risk and protective factors such as acculturative stress, language, social connectedness, loneliness and mental health literacy on common mental health issues including depression, anxiety, and stress in LGBT international students.

Methodology: Via surveys disseminated throughout universities across Australia, quantitative data was collected. Data collected included sex recorded at birth, descriptions of identified gender, sexual orientation, first and other languages, level of study, length of study, and other key demographic information.

Project Specific Requirements:

Interest/knowledge of:

- culturally and linguistically aware mental health and/or LGBT mental health.

Technical knowledge:

- Knowledge of SPSS/R for data analysis.
- Ability to conduct appropriate and relevant association, comparison, and cause-and-effect analyses.

Project Length: One semester full-time or two semesters part-time.

Understanding healing and recovery in women and children exposed to family, domestic, and sexual violence (FDSV)

Professor Colleen Fisher - colleen.fisher@uwa.edu.au

Professor Ashleigh Lin - ashleigh.lin@uwa.edu.au

Dr Chantal Orgeas - Chantal.orgeas@uwa.edu.au

Background: Colleen, Ashleigh and Chantal are open to supervision on a range of projects in family, domestic and sexual violence (FDSV) of women and children using qualitative and quantitative methodologies.

Outline: Our research program focuses on understanding factors involved in the healing and recovery of women and children exposed to FDSV, investigating the impacts on health and broader social outcomes in the short, medium, and longer-term. We aim to analyse linked data in the future to examine longitudinal health and social outcomes related to experiences of FDSV. Specifically, we are interested in understanding how exposure to the continuum of FDSV affects these outcomes over time. We are open to discussing new project ideas with potential students and encourage interested students to reach out to discuss **potential projects further**.

Methodology: Some of these projects include:

- Using the Karlup Service Cohort to understand FDSV in women and children.
- Evaluation of the Karlup Service Cohort, a cohort consisting of women and children accessing a specialised family and domestic violence service in Perth, which offers comprehensive support to aid their recovery and healing.

We use mixed methods, thus will consider qualitative and quantitative studies.

Project Specific Requirements: Depends on the project selected.

Project Length: Depends on the student and the project selected.



The University of Western Australia M431, Perth WA 6009 Australia

Tel: +61 8 6488 1271

Email: schoolops-nedlands@uwa.edu.au

CRICOS Provider Code: 00126G