

Available Research Projects for Medical Students

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PS003_aBal	Research priorities for children with disability and their families
PS004_e6sx	Multiple projects in perinatal research
PS005_6PU0	Improving health system efficiency and readiness through digital health and artificial intelligence
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PS009_bJ1c	Evaluation of the respiratory outcomes following HSCT at the Queensland Children's Hospital (QCH)
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PS022_gQqN	Defining the Role of Mineralocorticoid Receptors in Cardiometabolic Health & Inflammation & Optimising the Diagnostic Approach for Aldosterone-producing Adenoma
PS023_RS0C	Sitting less, moving more, sleeping well, eating well

PS024_76Bb	What effect does the introduction into a tertiary paediatric hospital of an integrated electronic medical record system with semi-automated multi-trigger MET alerts have on utilisation of the RRS and patient outcome?
PS025_Nn2h	Pasifika Diabetes Wellness Program
PS026_thdy	Health determinants of Chronic Conditions of Maori and Pasifika peoples in Australia
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PS028_AV7b	History of Mental Health Care in Queensland
PS028_3cm5	Multiple Projects in the Fields of: Health informatics, Health services, Artificial Intelligence, Digital Health & Clinical Informatics
PS032_ODUw	Multiple projects available in Cardiology
PS033_zZkh	Characterising Biomarkers of Resistance and Response to Standard and Novel Therapies in Acute Myeloid Leukaemia
PS034_9fDW	Rurality in Australian medical research authorship: a longitudinal, bibliometric study
PS036_Yq09	Benzodiazepine misuse among people with dementia in residential aged care facilities: A systematic review and meta-analysis
PS038_LSJr	Breast/Lung Cancer projects in areas of pathology, genomics, biomarkers, patient quality of life
PS040_NC6c	Systematic review of cardiovascular outcomes in regional and remote Australia.
PS041_nkLG	Assessing the evidence underlying TGA approval of high-risk (class III) cardiovascular devices
PS042_Hlv3	Understanding the relationships between physical activity and BMI with premenstrual syndrome (PMS) and severe period pain (dysmenorrhea)
PS043_dTig	A scoping review of cost-benefit analysis for dementia
PS044_573F	Virtual Integrated Practice (VIP) - supporting a sustainable rural workforce using telehealth
PS047_wURP	Emergency Department Trauma Reception and Handover
PS048_KT3X	Older Adult Trauma Patient Audit
PS049_C7k9	How long till we get it right? Appropriate and Inappropriate Imaging in UTI in Children

PS001_Rwih: Multiple projects within student and clinician temperament and character traits and well-being behaviours

Researcher/Supervisor: Di Eley

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Alternative Contact Person:

Email of the Alternative Contact Person:

Ethics Approval/Application Number: UQ Human Ethics #2017/HE001468

Project Location: Herston Medical School

Project Synopsis: This study is designed to incorporate a cross-sectional and longitudinal approach to examine medical student temperament and character personality characteristics and other psychological constructs as indicators of their capacity for well-being and coping.

Gathering personality and personal characteristics and perceptions of students throughout their education may help us identify important triggers and/or indicators of student vulnerability to stressors during their degree which may threaten their mental and physical health during medical school and into clinical practice. There are several options within this longitudinal research project for students to be involved, from literature reviews to designing surveys, collecting new and analysing existing data - all with the potential of research output in the form of a co-authorship on a journal article or conference abstract.

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: Learning Outcomes

1. Understand and put into practice the 'Research Process' as it applies to a specific research question.
2. Skills in data collection, management and analysis.
3. Communication skills through dissemination of research findings such as writing for scientific journals and presenting research at conferences.

Student Activities: A wide variety of research activities are possible depending on the project. These range from the following (not necessarily in this order): searching the literature, reviewing and critiquing the literature, creating surveys, collecting data, managing and analysing data, presenting results, writing for publications, and presenting data for reports

It is also possible for a student to undertake a complete project (under supervision) which includes all aspects of the research process

Prerequisite Skills: Some excel and data management experience and familiarity with statistics, preferably SPSS, is helpful. However, depending on the project these will not be essential.

Time frame for starting and completion of this project: There are projects and project work ready to start at any time. The timeframe for all is flexible.

PS002_4DCN: Multiple projects in breast cancer research

Researcher/Supervisor: Monika Prelowska

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Researcher Profile Link: <https://www.qimrberghofer.edu.au/our-research/cancer-research/signal-transduction/>

Alternative Contact Person:

Email of the Alternative Contact Person:

Ethics Approval/Application Number:

Project Location: QIMR

Project Synopsis: Performing pathway profiling in breast cancer for the development of targeted therapies.

Research option(s) available:

Student Learning Outcomes:

Student Activities: Literature review, systematic review, qualitative methods, secondary data analysis, statistical analysis

Prerequisite Skills: Nil

Time frame for starting and completion of this project: Flexible.

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PS003_aBal: Research priorities for children with disability and their families

Researcher/Supervisor: Jasneek Chawla

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Researcher Profile Link: <https://researchers.uq.edu.au/researcher/3669>

Alternative Contact Person: Emma Cooke

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Ethics Approval/Application Number: 2023/HE001760

HREC/23/QCHQ/100750

Project Location: Centre for Child Health Research Centre - Child Health Research Centre

Project Synopsis: This project will be collecting and analysis data regarding the research priorities for children with disability and their families.

Research option(s) available: Student Self-guided Research

Student Learning Outcomes: 1) experience in data organisations and preparation for analysis

2) Quantitative methods of data analysis

3) qualitative interview techniques and analysis of data

Student Activities: The student will assist with the planned activities to engage with consumers and then assist in the data collation and analysis

Prerequisite Skills: Previous experience working with children would be helpful

Time frame for starting and completion of this project: Project start as soon as wish likely for 12 months

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PS004_e6sx: Multiple projects in perinatal research

Researcher/Supervisor: Julie Wixey

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Researcher Profile Link: <https://researchers.uq.edu.au/researcher/5911>

Alternative Contact Person: Yvonne Eiby

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Ethics Approval/Application Number:

Project Location: UQ Centre for Clinical Research

Project Synopsis:

The Perinatal Research Centre (PRC), under the direction of Professor Paul Colditz, is committed to improving perinatal health through world class biomedical and clinical research. Our multidisciplinary research team aims to translate research advances into clinical practice and better health outcomes for mothers and babies.

The PRC specialises in translational research from pure science to playing a key role within the RBWH in clinical trials. The PRC has undergraduate students and postgraduate honours, masters and PhD students from a wide range of disciplines. Research at the PRC centres around several themes: Brain Research, Clinical Trials, Signal Processing and Systems Physiology Research.

In the PRC, Group Leaders are Dr Julie Wixey (fetal growth restriction) and Dr Yvonne Eiby (preterm birth). Please contact them if you are interested in these projects.

<https://clinical-research.centre.uq.edu.au/perinatal-research-centre>

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: Understanding of perinatal neuroscience

Mechanisms of brain injury

Treatment options to protect the newborn brain

Student Activities: Type of work: Literature review, systematic review, qualitative methods, secondary data analysis, statistical analysis

Prerequisite Skills: None

Time frame for starting and completion of this project: Flexible

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PS005_6PU0: Improving health system efficiency and readiness through digital health and artificial intelligence

Researcher/Supervisor: David Hansen

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Researcher Profile Link: <https://people.csiro.au/H/D/David-Hansen>

Alternative Contact Person:

Email of the Alternative Contact Person:

Ethics Approval/Application Number:

Project Location: Herston STARS

Project Synopsis: The Australian e-Health Research Centre (AEHRC) is CSIRO's digital health research program, to drive innovations that enable the digital transformation of healthcare to improve services and clinical treatment for Australians. The AEHRC has a long-standing relationship with Queensland Health through a Joint Venture agreement between the organisations. With offices nationally across Brisbane, Melbourne, Sydney and Perth, the AEHRC undertakes research and develop technologies that:

- Transform health systems with data and artificial intelligence
- Transform healthcare delivery with virtual care
- Improve health system efficiency and readiness with digital health
- Speed the transition to precision health

AEHRC work with many collaborators across the healthcare system to improve diagnosis and treatment across Australia and internationally.

AEHRC has many projects that come up during the year. Here we list some example projects. Please get in touch with us to see what is available at the moment.

Project 1: Building disease models for synthetic patient data generation

This project will use the Synthea Module Builder to create new disease & patient trajectory models based on Australian data from AIHW and various States and Territories.

Synthea is a system for generating synthetic patient data that can be used for development, demonstration and testing purposes. However it has been developed in the US and the existing disease models are based on US statistics and demographics.

CSIRO has developed a variant of Synthea that fixes some of the internal assumptions and dependencies that are US-specific.

This project would look to develop modified versions of existing models (or brand new models) based on Australian statistics and demographics as well as continue the development of the CSIRO version to remove US-specific limitations.

Tasks: Identify relevant and interesting disease models; Gather appropriate statistics from published data to parameterise the models; Build updated models; Extend the CSIRO version of Synthea as required and work with the Synthea maintainers to contribute these changes

back to the core version; Work with team members to develop an analytics scenario that uses the generated data

Project 2: Predicting disease-risk from genomic data

How much of your disease risk is really encoded in the genome? Find out with Machine Learning (ML) and the world's largest genomic dataset. The student will learn how to run VariantSpark in an interactive notebook and optimise prediction/classification using a set of genetic drivers for phenotype of interest. The student will tackle common multi-genic diseases e.g. Alzheimer's/ALS. The resulting notebooks will help standardize the analysis of poly-genic-risk (PRS) models for a wide range of diseases annotated in the UKbiobank, i.e. supplementing the GWAS catalogue using ML methods.

Tasks: VariantSpark analysis; Use HAIL/AWS with python notebooks for large scale data analysis; use ML to build predictive models with genetic data

Project 3: Medical Image Analysis: Content-based Information Retrieval for Chest X-Rays with Machine Learning and Artificial Intelligence

This project aims to develop a content-based information retrieval system for chest X-rays. In essence, the system will be able to search for chest X-rays based on a given textual query. The system will leverage machine learning and artificial intelligence models that automatically interpret and generate reports for chest X-rays. The candidate's main task is to develop a means of ranking the reports with reference to a textual query. The system would then select images whose reports match the query. Such a system would automate the process of searching for similar cases. The system could also be used to validate the quality of learning — to determine if the model is providing valid interpretations.

Tasks: Develop and evaluate such methods using PyTorch/PyTorch Lightning. Participate in scientific paper writing.

Project 4: Health Services: Intelligent analysis and interactive visualization for mobile health data

Intelligent data analysis and alerts can be used to support the early detection and management of complications for chronic conditions such as heart diseases, diabetes, stroke and cancer. This project involves integrating longitudinal patient data from multiple sources (sensors, smart devices, self-reported) in mobile health platforms, generating useful insights and alerts, incorporating clinician guided insights and providing interactive data visualization for clinicians and patients.

Task: Developing intelligent data analytics and interactive data visualization tool for mobile health platforms

Project 5: Health Services: Integration of Artificial Intelligence based medical algorithms into clinical practice

CSIRO has developed several deep learning-based algorithms to detect disease indications on medical images (such as Decay in dental imagery, fractures in Xray). The student will contribute towards further modifying the algorithm to increase the accuracy and work towards integration of such system in clinical applications.

Tasks: Train Machine Learning models to detect disease in XRays; Work with CSIRO's High Performance Computing Platform; Work towards integration the developed algorithms into clinical workflow

Other projects

We have a range of topics available, with various research questions in digital health, medical imaging, health text analytics, health system analysis and virtual care.

We invite you to work with an experienced team of researchers on aspects of research development, management or analysis that you are interested in, and may be able to find a unique topic for your interests.

Prerequisite skills: Data analytics skills (other skills e.g. computer science dependent on project)

Website: Australian e-Health Research Centre (AEHRC)

Research option(s) available: MD Summer Research, Student Self-guided Research, MD-PhD or MD-MPhil

Student Learning Outcomes: Better understanding of leading edge digital health innovations

Better understanding of research methodology and processes

Working in team environments to develop digital health innovations

Student Activities: Literature review

Qualitative methods

Secondary data analysis

Statistical analysis

Systematic review

Prerequisite Skills: Data analytics skills (other skills e.g. computer science dependent on project)

Time frame for starting and completion of this project: flexible, subject to project and student availability

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PS006_29VX: Investigating the relationship between frailty and dementia in older age

Researcher/Supervisor: David Ward

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Researcher Profile Link: <https://researchers.uq.edu.au/researcher/37532>

Alternative Contact Person: Natasha Reid

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Ethics Approval/Application Number:

Project Location: Centre for Health Services Research (Princess Alexandra Hospital)

Project Synopsis: Frailty arises in people due to a complex interplay between non-modifiable factors (e.g. genetics) and modifiable factors (e.g. physical activity) accumulated across the lifespan. It plays an integral role in influencing risk for a range of ageing-related conditions, including dementia. Recent research has highlighted the close links between the development of frailty and subsequent risk of dementia, although more work is needed on certain priority areas. For example, it is not yet known which population groups stand to benefit most/least from interventions targeting frailty or whether engaging in positive health behaviours (e.g. regular exercise, using hearing aids) may protect against the detrimental influence of frailty on dementia risk. This project will address one of these (or a related) unknown regarding the relationship between frailty and dementia in older age.

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes:

- An understanding of the complexities of human ageing with respect to health and neurological diseases
- The ability to analyse complex quantitative data and extract new insights into human health
- Highly developed skills in the integration of key findings from research/analysis into manuscripts attractive for publication in Q1 journals

Student Activities: The student will undertake a literature review, conduct secondary statistical analyses of data collected under existing, world-class cohort studies, and write a manuscript for submission to a peer-reviewed scientific journal.

Prerequisite Skills: A working knowledge of quantitative data analysis and its application to human health and ageing would be of benefit to someone working on this project.

Time frame for starting and completion of this project: There is flexibility in the start/end date of this project.

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PS007_x8x3: Understanding the effects of wildfire exposure on birth outcomes

Researcher/Supervisor: Namal Balasooriya Mudiyansele

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Researcher Profile Link: <https://researchers.uq.edu.au/researcher/35390>

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Ethics Approval/Application Number:

Project Location: Centre for Health Services Research, Herston

Project Synopsis: Pregnant women represent a particularly vulnerable group in the face of the health risks posed by wildfires. Extensive research has indicated a strong association between wildfire exposure and adverse birth outcomes. Wildfires, owing to the release of air pollutants into the atmosphere and the psychological distress experienced by expectant mothers during these catastrophic events, can profoundly affect neonatal health. Despite these compelling findings, a comprehensive systematic review of the existing body of evidence about the impact of wildfire exposure on birth outcomes remains notably absent. Therefore, the primary objective of this systematic review is to synthesize and critically evaluate the available research to provide a comprehensive understanding of the effects of wildfire exposure on birth outcomes.

Research option(s) available: MD Summer Research

Student Learning Outcomes:

1. students will gain insights into the interdisciplinary aspects of wildfire-related health research.
2. learn to conduct meta-analyses, enabling them to quantitatively analyse and summarize data, providing valuable insights
3. develop strong statistical and methodological skills, which are crucial for conducting rigorous systematic reviews and meta-analyses

Student Activities: literature search, screening selected literature, data extraction, analysis and writing the manuscript.

Prerequisite Skills: NA

Time frame for starting and completion of this project: flexible

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PS008_HLd6: Multiple projects in brain and skin cancer research

Researcher/Supervisor: Louisa Gordon

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Researcher Profile Link: <https://www.qimrberghofer.edu.au/people/louisa-gordon/>

Alternative Contact Person: Daniel Lindsay

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Ethics Approval/Application Number: QIMR Human Research Ethics Committee P3889

Project Location: QIMR Berghofer Medical Research Institute

Project Synopsis:

Topic 1:

Creating a mapping algorithm to convert quality-of-life to health utility scores for patients with brain tumour

Brain tumours are rare but a high proportion are life-threatening and they are associated with significant symptoms, impairments in physical function and neuro-cognitive changes. Patients also experience high levels of anxiety and depression. Measuring health-related quality of life is really important in this patient group when evaluating new therapies, services or models of care which promise to improve patient well-being. Health utility scores are similar to quality-of-life scores but are specifically used in health economics. In economic evaluations, health utility tools are required to generate the outcome 'quality-adjusted life years' which are used by decision-makers to judge the cost-effectiveness of new therapies and decide whether to fund them or not. This project is a statistical analysis of data captured for both quality of life and health utility measures for 82 people with benign or malignant brain tumours in Queensland. The goals would be to 1) conduct a literature review on the methods of instrument mapping and 2) create an effective well-performing mapping algorithm to convert quality of life scores into health utility scores using currently available data. Potentially, the algorithm could be used by researchers to derive health utility scores when these were not possible to collect directly.

This project comes with a small student stipend of \$3,500.

Topic 2:

The medical cost-offset effect in psycho-oncology – what is the evidence?

Anxiety, depression and fear of recurrence are common and serious mental health issues faced by patients with cancer, and/or their caregivers. There is also an established link between high psychological problems in survivors of several cancer types and high use of health services, healthcare costs, and economic burden. Therefore, it is critical that mental health issues are addressed in patients with cancer. The medical cost-offset effect is a phenomenon to describe the situation where psychosocial support is provided to patients with cancer which leads to lower healthcare costs. This may occur from reduced clinical consultations with GPs, and other allied health, fewer emergency hospital visits, tests, investigations, pharmacotherapies and other healthcare types due to the psychosocial support intervention addressing the concerns of the patients. On the other hand, it has been

argued that cost-offsets do not occur and in fact, healthcare costs may rise if patients are not receiving the care they need, that is, their unmet needs lead to an increased uptake of services which the psychosocial support intervention may promote through referrals. This project involves a systematic literature search to assess the evidence for the medical cost-offset effect in oncology and analyse Medicare healthcare costs in a small sample of patients with brain tumours.

Topic 3:

How much do hospitals spend on treating patients with high-risk melanoma?

Australia's national health system spending on diagnosing and treating melanoma and non-melanoma skin cancers is around \$1.7 billion per year. This is the highest cost of any cancer. While melanoma is less common than non-melanoma skin cancers, melanomas are sometimes treated in hospitals rather than in community clinics. With our aging population, the absolute number of patients with melanoma treated in hospitals will continue to increase. While the vast majority of skin cancer is treated in primary care and private dermatology clinics, there is very little information on how melanoma is treated in hospitals and the associated healthcare costs. This project involves a pattern of care study, describing and costing the resources used to treat melanoma in hospitals from a large cohort study of patients with high-risk melanoma. Detailed information has been captured on the treatment of initial melanoma (location, type of doctor, if lymph node biopsy was performed etc) and then treatment of melanoma recurrence (scans, further surgery, immunotherapy) for a cohort of 700 high-risk melanoma patients from Queensland with almost 10 years of follow up data.

This project comes with a small student stipend of \$3,500.

Research option(s) available: Student Self-guided Research

Student Learning Outcomes: Topic 1: Understand how to analyse health utility data, systematic review of literature, statistical analysis of mapping two instruments

Topic 2: Understand how to perform a systematic review, data extraction from studies, synthesis and critical appraisal

Topic 3: Understand how to do a literature review, analysis of patient level data, valuing healthcare resources

Student Activities: Topic 1: analyse health utility data, systematic review of literature, statistical analysis of mapping two instruments

Topic 2: systematic review, data extraction from studies, synthesis and critical appraisal

Topic 3: literature review, analysis of patient level data, valuing healthcare resources

Prerequisite Skills: Topic 1 & 3: statistical experience is essential

Time frame for starting and completion of this project: Starting Jan/Feb 2024, completion Jun/July all projects (flexible).

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PS009_bj1c: A review of the respiratory outcomes following HSCT at the Queensland Children's Hospital (QCH)

Researcher/Supervisor: Paul Robinson

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Researcher Profile Link: <https://researchers.uq.edu.au/researcher/39995>

Alternative Contact Person: Matthew Wong

Email of the Alternative Contact Person: matthew.wong@uq.edu.au

Ethics Approval/Application Number: Project 1: 100830 (approved). Project 2: 99795 (awaiting approval).

Project Location: Children's Health Environment Program within the Child Health Research Centre (Children's Health Queensland)

Project Synopsis: Project 1 (Ethics 100830):

The overall aim of the study is to review the respiratory outcomes following HSCT at the Queensland Children's Hospital (QCH) to inform future establishment of a multidisciplinary oncology-respiratory service.

Objectives:

1. Report existing success rates of baseline lung function testing in children undergoing HSCT
2. Report existing success rates of surveillance lung function testing in children following HSCT
3. In children experiencing a $\geq 20\%$ decline in spirometry from baseline values, what proportion are then investigated for possible BOS using additional tests such as MBW and oscillometry, bronchoalveolar lavage, CT scanning and lung biopsy
4. In children with confirmed BOS, describe the lung function outcomes at diagnosis and response to treatment
5. Report the prevalence and outcomes of infectious and non-infectious pulmonary complications post-HSCT
6. Investigate baseline characteristics and post-HSCT factors associated with respiratory morbidity and mortality.
7. Describe the frequency and nature of Respiratory department involvement
8. Assess the impact of the multidisciplinary service on success rates of baseline lung function testing for children

post-HSCT after 2 and 5 years of the multidisciplinary service being established, in comparison to those historical rates (defined in objectives 1 and 2)

9. Evaluate the impact of the multidisciplinary service in detection of pulmonary complications and patient related outcomes after a five-year period of the multidisciplinary service, compared to historical rates (defined in objectives 3-7)

Research option(s) available: Student Self-guided Research

Student Learning Outcomes: 1. Gain further experience working in a research team through active participation as a medical student

2. Study and learn about pulmonary function testing as it relates to paediatric oncology patient management and the role of MDTs in medicine

3. Cultivate motivation for academic studies by applying theoretical knowledge in real-world settings

Student Activities: Ethics and governance upkeep

- Data analysis and review
- Data cleaning
- Student will be listed as a co-author on both publications
- Aim to also have student be first author or presenting author on an abstract/manuscript

Prerequisite Skills: There are no specific prerequisite skills required. The identified candidate (Eloise Graham) has extensive prior research experience, most notably at UC San Francisco in California, which makes her an excellent candidate for these two projects. During her time at UCSF she worked as a Clinical Research Coordinator while she was a full-time student. I am confident she can handle the workload required.

Time frame for starting and completion of this project: Start time as soon as possible, completion of project will be tailored to student's schedule as she moves back to USA at the end of 2024.

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PS010_gSkz: Hypothalamic dysfunction in ALS and FTD patients and animal models

Researcher/Supervisor: Frederik Steyn

Researcher/Supervisor's Email: f.steyn@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/2027>

Alternative Contact Person: Shyuan Ngo

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Ethics Approval/Application Number:

Project Location: School of Biomedical Sciences, St Lucia

Project Synopsis: Rapid weight loss in patients with ALS is associated with faster disease progression and earlier death. While the cause for weight loss is multifactorial, evidence suggests impaired energy balance due to hypothalamic dysfunction.

The hypothalamus is a small brain structure that regulates energy homeostasis. Hypothalamic dysfunction is observed across ALS and behavioural variant frontotemporal dementia (bvFTD). In ALS, this might contribute to loss of appetite and hypermetabolism, whereas in bvFTD it is generally associated with extreme hunger and weight gain. Current understanding of the impact of disease on hypothalamic function is limited, owing to the complexity of nutrient sensing pathways. Given the contrasting presentation of energy imbalance in ALS and bvFTD, we hypothesise that pathophysiology that contributes to motor and cognitive deficits in ALS-bvFTD also impact hypothalamic circuitries that regulate body weight.

Working alongside an existing team, you will:

1. Characterize hypothalamic tissues from 15 donors across the ALS-FTD spectrum.
2. Identify key brain structures, ensuring tissues are representative of the Arcuate nucleus.
3. Match collected tissues to single-cell transcriptome data.
4. Contribute to a literature review on hypothalamic dysfunction in ALS and FTD patients and animal models.

Research option(s) available: MD Summer Research, Student Self-guided Research

Student Learning Outcomes: 1. Characterize hypothalamic tissues from 15 donors across the ALS-FTD spectrum to understand the disease's impact on brain structures.

2. Learn to identify key brain structures, with a focus on confirming that tissues are representative of the Arcuate nucleus.

3. Compile a literature review that collates evidence of hypothalamic dysfunction in ALS and FTD patients as well as animal models.

Student Activities: Responsibilities will include:

1. Imaging digitally processed tissues to study the hypothalamic region, specifically focusing on the Arcuate nucleus.

2. Developing a scoring system to evaluate and confirm the representativeness of the imaged tissues for the Arcuate nucleus. If time permits, you will work with other members of the team as we match transcriptome to each donor.

3. Conducting a guided literature review, with instruction on utilizing various research resources to access and filter relevant studies.

Prerequisite Skills: No - all training will be provided

Time frame for starting and completion of this project: Timing for this project is flexible

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PS011_HJrS: Better control of mosquito-borne diseases through mosquito genomics

Researcher/Supervisor: Gordana Rasic

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Researcher Profile Link: <https://www.qimrberghofer.edu.au/our-research/population-health/mosquito-genomics/>

Alternative Contact Person:

Email of the Alternative Contact Person:

Ethics Approval/Application Number:

Project Location: QIMR Berghofer Medical Research Institute

Project Synopsis: We study natural mosquito populations, do laboratory experiments, and aim to produce practical solutions for field deployment. In doing so, we generate and analyse genomic and other “omics” data from a single mosquito cell to a system of mosquito populations. We use genomics to understand how mosquitoes move, mate and survive in different environments so that we can find optimal control strategies (spatial population genomics, simulation modelling), and to identify new targets for genetic control (molecular biology).

Available Research projects

- Development of tools for innovative mosquito surveillance (close-kin mark-recapture methods to estimate mosquito demography and movement)
- Population and landscape genomics of arboviral and malaria mosquito vectors
- Optimization of Wolbachia-based programs
- Frameworks for the implementation of gene drive technology to control mosquito-borne diseases
- New gene targets for the control of arbovirus and malaria vectors
- Development of mosquito genomic resources (genome assemblies and annotations, analytics workflows)
- Development of a biosecurity platform for exotic mosquitoes

Research option(s) available:

Student Learning Outcomes:

Student Activities:

Prerequisite Skills: Nil

Time frame for starting and completion of this project: Flexible.

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PS012_6tMt: Knowledge and attitudes of family caregivers about stroke care

Researcher/Supervisor: Elton Lobo

Researcher/Supervisor's Email: elton.lobo@uq.edu.au

Researcher Profile Link: <http://researchers.uq.edu.au/researcher/40888>

Alternative Contact Person:

Email of the Alternative Contact Person:

Ethics Approval/Application Number:

Project Location: Queensland Digital Health Centre

Project Synopsis: We are working on two possible topics for a systematic/scoping review:

1. Knowledge and attitudes of family caregivers about stroke care

Informal caregivers play an important role in the recovery of stroke patients from inpatient rehabilitation to returning home and community reintegration. They often become the primary support system, handling everything from day-to-day care to complex medical needs. However, their knowledge about stroke-related complications, treatment options, and long-term recovery processes often goes overlooked. This systematic review delves into these caregivers' understanding and attitudes towards their roles. It assesses the challenges they face, their preparedness to provide care, and how these factors can significantly influence the quality of care they deliver and the patient's recovery trajectory. By better understanding the experience of these informal caregivers, this research may pave the way for the development of more effective educational programs and support systems in stroke care, thus improving patient outcomes and caregiver experiences.

2. Benefits and barriers towards integrating psychosocial interventions for informal caregivers of people living with stroke

Informal caregivers play an important role in the recovery of informal stroke caregivers from inpatient rehabilitation to returning home and community reintegration. However, this role has a significant impact on the informal caregiver, including physical, social, financial and psychological. As a recommendation, the Clinical Guidelines for Stroke Management has described the need to provide informal caregivers with psychosocial support. Despite this recommendation, the literature surrounding the sustainable integration of such interventions still remains unclear. This systematic review aims to identify the barriers and enablers of integrating psychosocial interventions in informal stroke caregiving, informing strategies to enhance caregiver support and improve the overall well-being of both informal caregivers and person living with stroke.

Research option(s) available: Student Self-guided Research

Student Learning Outcomes: Critical Appraisal and Evaluation of Evidence, Scientific Writing and Communication, and Data Synthesis and Analysis

Student Activities: Literature screening and academic writing

Prerequisite Skills: Interest in research and excellent communication skills

Time frame for starting and completion of this project: November 2023 to June 2024

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PS013_rw3L: Characterisation of immune cell contribution to changes in neuronal connectivity and memory

Researcher/Supervisor: Emily Willis

Researcher/Supervisor's Email: e.willis@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/29694>

Alternative Contact Person: Jana Vukovic

Email of the Alternative Contact Person: j.vukovic@uq.edu.au

Ethics Approval/Application Number: 2021/AE000496

Project Location: UQ St Lucia, School of Biomedical Sciences (SBMS) and the Queensland Brain Institute (QBI)

Project Synopsis:

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes:

Student Activities:

Prerequisite Skills: Nil

Time frame for starting and completion of this project:

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PS014_uKAV: Multiple projects in respiratory and sleep medicine research

Researcher/Supervisor: Paul Robinson

Researcher/Supervisor's Email: paul.robinson@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/39995>

Alternative Contact Person: Matthew Wong

Email of the Alternative Contact Person: matthew.wong@uq.edu.au

Ethics Approval/Application Number: Project 1: 100830 (approved). Project 2: 99795 (awaiting approval).

Project Location: Children's Health Environment Program within the Child Health Research Centre (Children's Health Queensland)

Project Synopsis: Project 2 (Ethics 99795):

This study is an individual participant data meta-analysis that will investigate two new lung function tests in patients who have received a haematopoietic stem cell transplant (HSCT). The aim of this project is to collate all existing cross-sectional and longitudinal data for peripheral pulmonary function tests in HSCT recipients.

Objectives:

The following are the main research objectives of this project:

- 1.Primary objective: To evaluate whether bronchiolitis obliterans syndrome (BOS; pulmonary chronic GVHD) is associated with peripheral airway function abnormality as defined using novel PFTs (MBW and oscillometry).
- 2.To evaluate and compare the temporal course of the lung function impairment using these functional tests as well as conventional tests (spirometry and diffusion capacity of the lung for carbon monoxide [DLCO]) among HSCT recipients.
- 3.To evaluate risk factors associated with the development of peripheral airway function decline and BOS after HSCT.
- 4.To evaluate the utility of peripheral airway function tests at time of BOS diagnosis to predict the subsequent clinical course.

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: 1. Gain further experience working in a research team through active participation as a medical student

2. Study and learn about pulmonary function testing as it relates to paediatric oncology patient management and the role of MDTs in medicine
3. Cultivate motivation for academic studies by applying theoretical knowledge in real-world settings

Student Activities: Ethics and governance upkeep

- Data analysis and review

- Data cleaning
- Student will be listed as a co-author on both publications
- Aim to also have student be first author or presenting author on an abstract/manuscript

Prerequisite Skills: There are no specific prerequisite skills required. The identified candidate (Eloise Graham) has extensive prior research experience, most notably at UC San Francisco in California, which makes her an excellent candidate for these two projects. During her time at UCSF she worked as a Clinical Research Coordinator while she was a full-time student. I am confident she can handle the workload required.

Time frame for starting and completion of this project: Start time as soon as possible, completion of the project will be tailored to the student's schedule as she moves back to USA at the end of 2024.

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PS015_Q6Bj: Systematic Review and Meta-analysis of the association between salpingectomy and risk of ovarian cancer

Researcher/Supervisor: Susan Jordan

Researcher/Supervisor's Email: s.jordan@uq.edu.au

Researcher Profile Link: <http://researchers.uq.edu.au/researcher/3880>

Alternative Contact Person: Karen

Tuesley

Email of the Alternative Contact Person: k.tuesley@uq.edu.au

Ethics Approval/Application Number:

Project Location: School of Public Health

Project Synopsis: Systematic Review and Meta-analysis of the association between salpingectomy and risk of ovarian cancer

Research option(s) available: Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: Systematic review of published literature

Critical appraisal of articles from the literature

Understanding and application of synthesis of information from the published literature

Student Activities: Creating a protocol

Systematically reviewing the literature using COVidence software to assist with double checking of title and abstract selection

Extracting and tabulating relevant information from the literature

Conducting a narrative and quantitative synthesis

Writing up results for publication

Prerequisite Skills: Some statistical experience is useful but not necessary

Time frame for starting and completion of this project: ASAP

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PS016_4V0V: Multiple projects within the Centre of Research Excellence on Achieving the Tobacco Endgame (CREATE)

Researcher/Supervisor: Coral Gartner

Researcher/Supervisor's Email: c.gartner@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/1704>

Alternative Contact Person: Kylie Morphet

Email of the Alternative Contact Person: k.morphett@uq.edu.au

Ethics Approval/Application Number:

Project Location: Herston campus - we can provide deskpace within our research group for students who want to experience working in a research group. However, most projects can be completed remotely.

Project Synopsis: We have multiple projects available within the Centre of Research Excellence on Achieving the Tobacco Endgame (CREATE). We can host students on campus within our research facilities, where the student would like to work within the team environment. However, most projects can be completed flexibly off-campus where this is preferred/most practical for the student. For example, literature reviews (scoping reviews, systematic reviews, meta-analyses, narrative reviews), media content analysis and policy document analysis can be completed with video-conferencing for project meetings.

Larger projects (e.g. PhD, MPhil and Hons) may include original data collection with participants using qualitative and/or quantitative methods. There is also opportunity to analyse secondary data from large national and international surveys. We are a large international multidisciplinary research centre (<https://tobacco-endgame.centre.uq.edu.au/>) our members include several clinician scientists in the fields of mental health and respiratory medicine. As a NHMRC Centre of Research Excellence, we are also committed to research capacity building by providing research training opportunities.

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: 1) Understand health policy development, implementation and evaluation; 2) Develop research skills (development of research questions, aims, objectives, study design, analysis and interpretation of data); 3) Understand the complexity of managing a complex public health issue with major clinical impact (tobacco smoking) that involves social, commercial, legal and political determinants of health.

Student Activities: We have multiple options available - we can help match students to an appropriate project for them. Examples of the types of activities the student could be involved in (depending on the project selected, and the student's pre-existing skills:

- Literature reviews: literature search, screening against inclusion/exclusion criteria, data extraction and charting, narrative synthesis, meta-analysis (where appropriate), writing up for publication

- Qualitative methods: Developing an interview guide, recruiting participants, interviewing participants, data analysis using qualitative analysis software (e.g. coding interview transcripts or other data, deductively or inductively), searching for documents (e.g., policy documents), interpretation of analysed data, writing up for publication
- Quantitative methods: survey design, data cleaning, statistical data analysis (of new or existing data), reporting of results (e.g., creation of results tables), data interpretation, writing up for publication
- Chart reviews: NOTE- projects requiring use of clinical data require Public Health Act approval and are only suitable where the student has available a long lead time between planning the project and gaining access to the data (e.g. 12 months) due to the duration of the approval process.

Prerequisite Skills: We will match the student to the project based on their existing skill levels.

Time frame for starting and completion of this project: There is some flexibility depending on the selected project. Students can join a project that has already commenced (and contribute to one part) or start a new project. It is recommended that students arrange an interview with the team to discuss their time frames, preferred topics, course requirements and existing skills to identify a suitable project.

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PS017_6FE3: Multiple projects in the area of wound care at the interface of biomedicine and material science

Hosted by the Rowan Group at the Australian Institute for Bioengineering and Nanotechnology (AIBN) focused on understanding the importance of the biophysical properties of these biomaterials and how they modulate cellular responses and development of novel bleeding control products. These projects have an applied/translational focus. Brief research project outlines are provided below. If these capture your interest, please contact us to explore these opportunities (a.kijas@uq.edu.au). <https://aibn.uq.edu.au/rowan>

Researcher/Supervisor: Amanda Kijas

Researcher/Supervisor's Email: a.kijas@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/11397>

Alternative Contact Person: Alan Rowan

Alternative Contact Person's Email: Alan.Rowan@uq.edu.au

Ethics Approval/Application Number: 2018/HE001922 and 2019/HE000588

Project Location: Australian Institute for Bioengineering and Nanotechnology and Herston Biofabrication Institute

Project Synopsis: PROJECT 1: Wound healing is a dynamic process requiring a coordinated response to healing. Cells respond to both biochemical and biophysical cues within their microenvironment, together modulating cellular responses. The extracellular matrix not only provides structural support but also key cues modulating cell/tissue responses. We have defined and tuneable natural and synthetic biomaterials to establish 3D cell model systems to both understand the drivers of scar formation and study these responses for biomedical application in the treatment of burns and autologous graft delivery with collaborators at Herston Biofabrication Institute.

Most relevant reference: Wang Z, Lauko J., Kijas AW..... Rowan AE. Snake venom-defined fibrin architecture dictates fibroblast survival and differentiation. Nature Communications. <https://doi.org/10.21203/rs.3.rs-1929196/v1>

PROJECT 2 : Death due to haemorrhage (bleeding) is a preventable death. Yet 30-40% of casualties in a civilian setting die as a result of bleeding to death after traumatic injury. In a military setting 90% of trauma casualties with potentially survivable injuries die due to haemorrhage. This project will specifically target this medical need, through the design, construction and evaluation of novel bleeding control products based on potent snake venom proteins to bring about rapid and stable blood clot formation in combination with biomaterials to target specific wound types.

Most relevant reference: Yegappan R, Lauko J, Wang Z, Lavin MF, Kijas AW, Rowan AE. Snake Venom Hydrogels as a Rapid Hemostatic Agent for Uncontrolled Bleeding. Adv Healthc Mater. 2022 11(15): e2200574. doi: 10.1002/adhm.202200574

Research option(s) available: MD-PhD or MD-MPhil

Student Learning Outcomes: Networking, team work, planning and executing experiments

Student Activities: exploring new ideas, project planning, lab work, literature search.

Prerequisite Skills: Ideally have some wet lab experience

Time frame for starting and completion of this project: 2023-2027

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**PS018_epSX: General projects within the following fields:
Health informatics, Health services, Artificial Intelligence, Digital health, and Clinical informatics**

Researcher/Supervisor: Clair Sullivan

Researcher/Supervisor's Email: clair.sullivan@health.qld.gov.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/13187>

Alternative Contact Person: Queensland Digital Health Centre

Alternative Contact Person's Email: qdhec@uq.edu.au

Ethics Approval/Application Number:

Project Location: Queensland Digital Health Centre

Project Synopsis:

Type of work: Literature review, Qualitative methods, Secondary data analysis, Statistical analysis, and Systematic review.

Brief synopsis: UQ's Queensland Digital Health Centre (QDHeC) is a growing, multi-disciplinary team that welcomes and supports students, who will learn the basics of clinical informatics and the processes involved in extraction and analysis of data from digital health systems. QDHeC is led by high-quality researchers who generate research and innovation and speed up translation of new knowledge into improved digital healthcare.

The Centre operates to achieve the Quadruple Aim of health, which is a globally recognised framework to optimise healthcare, seeking to Improve clinician experience, Improved patient experience, Lower costs, and Better outcomes

QDHeC is leading the way in developing a digitally enabled Learning Healthcare System using routinely collected data and patient experience to continuously monitor and improve healthcare outcomes. QDHeC collaborates with various partners internally and externally.

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: Increased understanding of the Quadruple Aim of Healthcare

- Basic understanding of data analysis, including extraction
- Introductory knowledge of clinical informatics and the link between clinicians and digital health

Student Activities: There are a number of projects currently running at QDHeC which students can be bought onboard to. Current examples include: Systematic review of patient flow in emergency departments, synthetic data use in research, digital health in rural and regional communities, AI in healthcare.

Prerequisite Skills: Nil

Time frame for starting and completion of this project: Flexible

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PS019_FDpf: Multiple projects in immunology and bioinformatics for paediatric immunology/immunotherapy

Researcher/Supervisor: Zewen Kelvin Tuong

Researcher/Supervisor's Email: z.tuong@uq.edu.au

Researcher Profile Link:

<https://child-health-research.centre.uq.edu.au/research/computational-immunology>

Alternative Contact Person: Megan Soon

Alternative Contact Person's Email: s.soon@uq.edu.au

Ethics Approval/Application Number:

Project Location: Centre for Children's Health Research

Project Synopsis: A cancer diagnosis at any age is upsetting, but felt more harshly when the patient is a young child who has only started out in life. Compared to adult cancer patients, the window of opportunity to help child cancer patients is especially short. We need to create an early warning system for paediatric cancers. Specialized immune cells known as T-cells and B-cells use specific receptors to recognize tumour antigens and fight cancerous cells. My lab's vision is to harness these cells and their receptors to enable early cancer detection and disease monitoring. These specific adaptive immune receptors are essential for all aspects of the T- and B-cells life cycle, serving as natural time-keepers of the immune response against cancer progression. We will create bespoke computational algorithms to explore the properties that define how effective these immune cells are in childhood cancer, perform high-resolution gene expression profiling at the single-cell level and develop highly advanced computer models that can be used to detect adaptive immune receptors that are targeted towards cancer. The projects will be largely dry-lab based and the candidates should expect to be working as part of a team together with leading groups in Australia as well as international collaborative networks (Cambridge, Sanger, UK).

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: Learn how to code using programming languages such as R and python

Gain in-depth knowledge about immunology

Learn about advances in research on paediatric immunotherapy for cancer

Student Activities: These are the following projects currently available:

Evaluating machine learning models classifying cancer-specific pattern in children with cancer.

Profiling the expression of active genes and adaptive immune receptors on cancer cells to develop a deeper understanding of paediatric hematopoietic cancer

Developing single-cell trajectory analysis methods for adaptive immune cells

The projects will suit either an immunologist wanting to learn bioinformatics and/or a computer scientist who wants to apply their skills onto biological problems. MD students/clinicians who are keen to learn programming are also welcomed to apply.

Prerequisite Skills: An ideal candidate would have a background in immunology, computer science, and/or bioinformatics. Basic understanding of statistical methods and machine learning experience working with python/R is highly desirable.

Time frame for starting and completion of this project: It is flexible - expect ~8 hours a week minimum.

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PS020_XpL3: Development of a clinical phenotype tool for MND

Researcher/Supervisor: <https://researchers.uq.edu.au/researcher/3631>

Researcher/Supervisor's Email: robert.henderson@health.qld.gov.au

Researcher Profile Link: space

Alternative Contact Person: Lily Tang

Alternative Contact Person's Email: Lily.Tang@health.qld.gov.au

Ethics Approval/Application Number:

Project Location: Metro north

Project Synopsis: MND is clinically heterogenous and a standard tool for assessment of the clinical phenotype would be invaluable. The upper and lower motor neurone involvement along with respiratory and cognitive involvement can be assessed longitudinally and assessed with outcome. At RBWH there is a large MND clinic where this data is able to be assessed and the plan is for clinicians to record this for a student to analyse. A simple tool to enable the widespread collection would be clinically useful.

Research option(s) available: Student Self-guided Research

Student Learning Outcomes: 1) understanding of MND

2) knowledge of database

3) application of a clinical tool

Student Activities: processing data, app development, consumer feedback, modifications

Prerequisite Skills: no

Time frame for starting and completion of this project: 12-18 months

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PS021_gQqN: Defining The Role Of Mineralocorticoid Receptors In Cardiometabolic Health & Inflammation & Optimising The Diagnostic Approach For Aldosterone-producing Adenoma

Researcher/Supervisor: Michael Stowasser

Researcher/Supervisor's Email: m.stowasser@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/20>

Alternative Contact Person: Moe Thuzar

Alternative Contact Person's Email: m.thuzar@uq.edu.au

Ethics Approval/Application Number: 2023/HE001155

Project Location: UQ Frazer Institute

Project Synopsis: This is an HDR opportunity to work with a team of clinician-scientists on clinical and laboratory research elucidating the role of the mineralocorticoid hormone receptor in cardiometabolic health/inflammation, and optimising diagnostic approaches for primary aldosteronism (the most common endocrine cause of hypertension associated with high risk of cardiovascular diseases) at the world-renowned Endocrine Hypertension Research Centre, UQDI based at the Translational Research Institute and Princess Alexandra Hospital, Brisbane. The successful candidate will be considered for scholarship support.

Research option(s) available: MD-PhD or MD-MPhil

Student Learning Outcomes:

- 1) understanding of MND
- 2) knowledge of database
- 3) application of a clinical tool

Student Learning Outcomes: Patient recruitment

Clinical, biochemical, anatomical and imaging data analysis

Statistical analysis

Write up of results

Student Activities: Chart reviews, clinical work, literature search, interviewing patients, lab work, statistical analysis

Prerequisite Skills: Medical graduate

Time frame for starting and completion of this project: Flexible

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PS022_RS0C: Sitting less, moving more, sleeping well, eating well

Researcher/Supervisor: Genevieve Healy

Researcher/Supervisor's Email: g.healy@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/757>

Alternative Contact Person: Ana Goode

Alternative Contact Person's Email: a.goode@sph.uq.edu.au

Ethics Approval/Application Number: It will just require an amendment for a student to be added. Multiple projects available.

Project Location: UQ St Lucia

Project Synopsis: We have a range of projects available at the Health and Wellbeing Centre of Research Innovation for those students interested in health promotion. Opportunities will vary depending on the time and scope of the project, but can include both quantitative and qualitative methodologies, primary and secondary data analysis, systematic reviews, scientific blog writing, and implementation science. Projects may include (but are not limited to):

<https://www.beupstanding.com.au/> - workplaces

<https://www.loganhealthyliving.org.au/> - people with type 2 diabetes

Small Steps for Big Changes - Australia - people at risk of type 2 diabetes

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: '- Demonstrated understanding of, and experience in the research process

- Ability to communicate to a range of stakeholders
- Experience in working as part of a multidisciplinary team

Student Activities: Project tasks will be dependent on the project and what the student would like to learn from their experience.

Prerequisite Skills: No

Time frame for starting and completion of this project: Flexible

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PS023_76Bb: What effect does the introduction into a tertiary paediatric hospital of an integrated electronic medical record system with semi-automated multi-trigger MET alerts have on utilisation of the RRS and patient outcome?

Researcher/Supervisor: Jason Acworth

Researcher/Supervisor's Email: jason.acworth@health.qld.gov.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/7228>

Alternative Contact Person:

Alternative Contact Person's Email:

Ethics Approval/Application Number: We have started preparing Ethics submission as a Low or Negligible Risk project through the children's Health Queensland Ethics team

Project Location: Rapid Response System Coordination Unit, Queensland Children's Hospital

Project Synopsis: The QCH Rapid Response System uses the Children's Early Warning Tool (CEWT) as part of the activation criteria for the RRS activation. In April 2018, a semi-automated multi-trigger MET alert was introduced into the hospital's integrated electronic medical record. This study aims to explore the effects that this change in the system had on utilisation of the RRS and patient outcome?

Research option(s) available: Student Self-guided Research

Student Learning Outcomes:

1. Gain experience with research protocol design
2. Gain experience with research ethics application submission
3. Become familiar with data analysis in a pre- and post- intervention cohort study
4. Gain experience in manuscript preparation

Student Activities:

1. Assisting with protocol development
2. Assisting with LNR ethics submission
3. Assisting with data analysis
4. Assisting with manuscript preparation

Prerequisite Skills: No

Time frame for starting and completion of this project: Flexible - feasibly completed within calendar year 2024

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PS024_Nn2h: Pasifika Diabetes Wellness Program

Researcher/Supervisor: Heena Akbar

Researcher/Supervisor's Email: h.akbar@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/32927>

Alternative Contact Person:

Alternative Contact Person's Email:

Ethics Approval/Application Number:

Project Location: Herston or St Lucia based. Doesn't require a specific physical location.

Project Synopsis: Pasifika Women's Diabetes Wellness Program (PWDWP)– a co-designed self-management program for Māori and Pacific Island women with type 2 diabetes in Australia

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research"

Student Learning Outcomes: Undertake qualitative analysis of focus group from the pilot trial

Gain experience with qualitative research, literature review and drafting reports.

Develop research skills using Indigenous framework and approaches.

Mentorship with supervisor and other researchers in the field.

Student Activities: Qualitative analysis and literature search

Drafting paper with mentorship and supervision from researchers in the field

Prerequisite Skills: Have understanding and some experience with qualitative research.

Ability to write and draft academic reports and papers.

Have sound academic and critical writing skills

Time management skills with ability to balance study and research

Time frame for starting and completion of this project: Flexible

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PS025_thdy: Health determinants of Chronic Conditions of Maori and Pasifika peoples in Australia

Researcher/Supervisor: Heena Akbar

Researcher/Supervisor's Email: h.akbar@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/32927>

Alternative Contact Person:

Alternative Contact Person's Email:

Ethics Approval/Application Number:

Project Location: Herston or St Lucia where students are based

Project Synopsis: This project aims to investigate and examine health determinants of Maori and Pasifika peoples in Australia. Using ABS census and National health survey data, determine the socio- cultural determinants of health (for specific chronic conditions and non communicable diseases such as diabetes (type 2, gestational), hypertension, CVD) and risk factors associated with the chronic conditions of Maori and Pasifika communities in Australia.

1.Community profile with specific health conditions across Maori and Pasifika communities (by cultural and ethnic groups):

2.Prevalence and incidence of type 2 diabetes and other multiple morbidity

Access to healthcare services, allied health

3.Social and cultural determinants of type 2 diabetes.

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: 1.Develop and apply skills in quantitative research using secondary data

2.Able to write statistical report on results.

3.Practical research training .

4.Working in a team with Pasifika researchers

5.Writing skills in quantitative research and interpreting quantitative data.

6.Understanding real world implications from secondary ABS data and it's relevance to community.

Will have opportunities to work closely with Pasifika researchers and communities to ensure accurate and appropriate interpretation of findings.

Student Activities: Students will be required to extrapolate and analyse secondary data from available ABS, national health survey etc and write reports or draft papers

for publication .Will have opportunities to co- author and will work closely with Pasifika researchers and communities to ensure accurate and appropriate interpretation of findings.

Prerequisite Skills: Statistical analysis and quantitative research methods skills

Good writing skills and experience with quantitative analysis

Experience working in a team

Able to draft reports - academic writing skills

Time frame for starting and completion of this project: Flexible

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PS026_Wo0l: Multiple projects are available in Paediatric Sleep Medicine Clinical Research

Researcher/Supervisor: Jasneek Chawla

Researcher/Supervisor's Email: jasneek.chawla@health.qld.gov.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/3669>

Alternative Contact Person: Emma Cooke

Alternative Contact Person's Email: e.cooke@uq.edu.au

Ethics Approval/Application Number: multiple projects all with ethics approved

Project Location: Centre for Children's Health Research under Kids Sleep Research
Child Health Research Centre

Project Synopsis: The research projects available all relate to aspects of sleep in children and how improving sleep can improve outcomes. We have both qualitative and quantitative work available with a large focus on work in children with neurodisability. We have studies evaluating family experience, developing novel technology and physician surveys.

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: 1. An understanding of clinical research and the importance of integration of clinical context into research

2. An understanding of research methods including survey data analysis, transcribing and analysing interview data, systematic review skills

3. Experience in collation of data and contribution to manuscript development for peer review publication.

Student Activities: Student will be involved in data collation and analysis, This will involve sorting and cleaning survey data for analysis and a role in the analysis. Transcribing and analysis of qualitative data, undertaking a systematic review of the literature.

Prerequisite Skills: Previous interviewing experience is helpful but not essential
basic stats is also helpful but not essential

Time frame for starting and completion of this project: Most projects would be completed in a 12 month period.

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PS027_AV7b: History of Mental Health Care in Queensland

Researcher/Supervisor: Nicole Shepherd

Researcher/Supervisor's Email: n.shepherd@uq.edu.au

Researcher Profile Link: <http://researchers.uq.edu.au/researcher/15334>

Alternative Contact Person:

Alternative Contact Person's Email:

Ethics Approval/Application Number:

Project Location: Academy for Medical Education

Project Synopsis: This project investigates the history of mental health care in Queensland. Students can work with objects in the Marks-Hirschfield Medical History Museum, specimens in the Integrated Pathology Learning Centre, or archival documents. The overarching question is to look at the way that care and treatment of mental illness was conceptualised, and the way that social and cultural factors shape knowledge of illness.

Research option(s) available: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: 1. Gain skills in designing a qualitative research project such as defining a research question and establishing the scope of a project

2. Become familiar with analysis and interpretation of qualitative data

3. Improve scientific writing skills by writing up results of the study

Student Activities: Work with an historical document or specimen to learn about the context in which it was created.

Prerequisite Skills: No

Time frame for starting and completion of this project: Flexible.

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PS028_3cm5: Multiple Projects in the Fields of: Health informatics, Health services, Artificial Intelligence, Digital health & Clinical informatics

Researcher/Supervisor: Clair Sullivan

Researcher/Supervisor's Email: qdhec@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/13187>

Alternative Contact Person: Jonaa Eva

Alternative Contact Person's Email: j.evaa@uq.edu.au

Ethics Approval/Application Number:

Project Location: QDHeC, Herston (within CHSR)

Project Synopsis: Queensland Digital Health Centre (QDHeC) is a growing, multi-disciplinary team that welcomes and supports students, who will learn the basics of clinical informatics and the processes involved in extraction and analysis of data from digital health systems. QDHeC is a leading digital health research centre based at The University of Queensland (UQ). QDHeC is generating new research and innovation to speed up the translation of new knowledge to improve healthcare. QDHeC works with six UQ faculties, external partners and consumers to create a learning health system which harnesses the power of digital solutions.

The Centre operates to achieve the Quadruple Aim of health, which is a globally recognised framework to optimise healthcare, seeking to, Improve healthcare team wellbeing, Improved patient experience, Reduced costs & Improved population health

QDHeC is leading the way in developing a digitally enabled Learning Healthcare System using routinely collected data and patient experience to continuously monitor and improve healthcare outcomes.

QDHeC collaborates with researchers from six faculties across UQ:

Business, Economics and Law, Engineering, Architecture and Information Technology, Health and Behavioural Sciences, Humanities, Arts and Social Sciences, Medicine, Science

QDHeC's external partners include:

Queensland Health, Stryker, CSIRO Australian e-Health Research Centre, Health and Wellbeing Queensland, QCIF - Queensland Cyber Infrastructure Foundation, & Health Translation Queensland

Research option(s) of interest: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 Foundations of Medical Research, The Clinician Scientist Track: MD-PhD or MD-MPhil

Student Learning Outcomes: Skills in data analytics, Increased knowledge of digital capability within health services, Improved understanding of digital health and electronic medical records

Student Activities: Type of work:

Literature review, Qualitative methods, Secondary data analysis, Statistical analysis & Systematic review

Prerequisite Skills: Interest in in data analytics, or health services, or digital health, or electronic medical record

Time frame for starting and completion of this project: Flexible

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PS032_ODUw: Multiple projects available in Cardiology

Researcher/Supervisor: Isuru Ranasinghe

Researcher/Supervisor's Email: i.ranasinghe@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/24909>

Alternative Contact Person: Sunnya Khawaja

Alternative Contact Person's Email: s.khawaja@uq.edu.au

Ethics Approval/Application Number:

Project Location: UQ Northside Clinical Unit, The Prince Charles Hospital

Project Synopsis: 1) Outcomes of Cardiovascular Diseases in Rural and Remote Australia: A systematic review

2) Assessing Safety and Quality of TGA approved cardiovascular devices in Australia: A systematic review

Research option(s) of interest: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research"

Student Learning Outcomes: 1) Creating a search strategy (i.e. search terms using PICO) and literature search (using databases e.g. PubMed)

2) Abstract screening and review of literature

3) Data extraction

Student Activities: 1) Creating a search strategy (i.e. search terms using PICO) and literature search (using databases e.g. PubMed)

2) Abstract screening and review of literature

3) Data extraction

Prerequisite Skills:

Time frame for starting and completion of this project: We would like to start these projects in early 2024.

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PS033_zZkh: Characterising Biomarkers of Resistance and Response to Standard and Novel Therapies in Acute Myeloid Leukaemia

Researcher/Supervisor: Claudia Bruedigam

Researcher/Supervisor's Email:

<https://biomedical-sciences.uq.edu.au/profile/11143/claudia-bruedigam>

Researcher Profile Link:

<https://biomedical-sciences.uq.edu.au/profile/11143/claudia-bruedigam>

Alternative Contact Person:

Alternative Contact Person's Email:

Ethics Approval/Application Number: P3737

Project Location: QIMR Berghofer, Cancer Program

Project Synopsis: Acute myeloid leukaemia (AML) is an aggressive and lethal blood cancer with a 5-year overall survival of less than 45% for patients younger than 60 years of age, or less than 10% for older patients. In Australia, about 1,000 patients are newly diagnosed with AML each year, and about 60,000 new AML patients per year are estimated for the developed world in total. Most patients initially respond to chemotherapy but ultimately relapse and die from disease. Relapse is mediated by leukaemia stem cells that initiate, maintain and serially propagate AML. The development of therapeutic strategies to target leukaemia stem cells is therefore a promising approach and key priority.

We have previously performed comprehensive, randomised, Phase II “like preclinical trials in humanised AML models treated with standard induction chemotherapy and/or novel telomerase inhibition therapy. Using extensive mutational and transcriptional profiling techniques, we have identified molecular biomarker candidates for resistance and response to therapy. The aim of this project is to characterise metabolic biomarker candidates using metabolomics combined with CRISPR/Cas9 technology in AML models. This project is not limited to but will involve cell culture techniques, molecular biology, immunoblotting, and flow cytometry.

Bruedigam C, Porter AH, Song A, Vroeg In de Wei G, Stoll T, Straube J, Cooper L, Cheng G, Kahl VFS, Sobinoff AP, Ling VY, Jebaraj BMC, Janardhanan Y, Haldar R, Bray LJ, Bullinger L, Heidel FH, Kennedy GA, Hill MM, Pickett HA, Abdel-Wahab O, Hartel G, Lane SW. Imetelstat-mediated alterations in fatty acid metabolism to induce ferroptosis as a therapeutic strategy for acute myeloid leukemia. *Nat Cancer*. 2023 Oct 30. doi: 10.1038/s43018-023-00653-5. Epub ahead of print. PMID: 37904045.

Waksal JA, Bruedigam C, Komrokji RS, Jamieson CHM, Mascarenhas JO. Telomerase-targeted therapies in myeloid malignancies. *Blood Adv*. 2023 Aug 22;7(16):4302-4314. doi: 10.1182/bloodadvances.2023009903. PMID: 37216228; PMCID: PMC10424149.

Bruedigam C, Bagger FO, Heidel FH, Paine Kuhn C, Guignes S, Song A, Austin R, Vu T, Lee E, Riyat S, Moore AS, Lock RB, Bullinger L, Hill GR, Armstrong SA, Williams DA, Lane SW. Telomerase inhibition effectively targets mouse and human AML stem cells and delays relapse following chemotherapy. *Cell Stem Cell*. 2014 Dec 4;15(6):775-90. doi: 10.1016/j.stem.2014.11.010. PMID: 25479751; PMCID: PMC4317339.

Research option(s) of interest: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 “Foundations of Medical Research”, MD-PhD or MD-MPhil

Student Learning Outcomes: Deeper understanding of topics at the interface of oncology, immunology and biochemistry.

Increased skill set including various laboratory techniques as well as bioinformatics/statistics.

Improved scientific writing and communication.

Student Activities: The project can be adapted to suit medical students at any stage of their degree.

Prerequisite Skills: The student will receive training and guidance throughout the course of their project, previous experience in laboratory techniques and statistical analyses is desired but not required.

Time frame for starting and completion of this project: The start and completion dates are flexible.

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PS034_9fDW: Rurality in Australian medical research authorship: a longitudinal, bibliometric study

Researcher/Supervisor: Kate Beecher Matthews

Researcher/Supervisor's Email: kate.matthews@uq.edu.au

Researcher Profile Link: <http://researchers.uq.edu.au/researcher/38292>

Alternative Contact Person: Joshua Wang

Alternative Contact Person's Email: j3.reilly@qut.edu.au

Ethics Approval/Application Number:

Project Location: UQ Centre of Clinical Research

Project Synopsis: Our proposal is to conduct a cross-sectional research study on published research in the top peer-reviewed Australian Medical journals between 2013-2023. The study aims to examine the degree of inclusion and representation of authors, editors, and research around rurality in Australia. Medical research plays a crucial role in evidence-based medical practice to inform clinicians and improve patient outcomes. This project will quantify the degree of rural voice in Australian medical research.

Research option(s) of interest: Student Self-guided Research

Student Learning Outcomes: * Recognises and describes the different types of health research methods, the level of evidence they provide and the appropriate method to answer specific clinical questions (understanding of the knowledge systems informing rural medicine).

* Describes the strengths of rural and remote communities and how they can contribute to health and wellbeing.

* Identifies how generalist rural and remote medicine provides comprehensive solutions to the need to provide best patient care in those settings

* Demonstrates understanding of the synthesis of research data in the form of narrative and systematic reviews and meta-analyses. Interpret findings from a meta-analysis.

Student Activities: Collecting data, literature search, with possibility to extend responsibility into a complete project (depending on student availability)

Prerequisite Skills: Basic statistical experience (Excel, Graphpad Prism), Interest in Rural Health

Time frame for starting and completion of this project: Flexible

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PS036_Yq09: Benzodiazepine misuse among people with dementia in residential aged care facilities: A systematic review and meta-analysis

Researcher/Supervisor: Hanh Dao

Researcher/Supervisor's Email: h.daotran@uq.edu.au

Researcher Profile Link: <http://researchers.uq.edu.au/researcher/37588>

Alternative Contact Person: Hanh Dao

Alternative Contact Person's Email: h.daotran@uq.edu.au

Ethics Approval/Application Number:

Project Location: Centre for Health Services Research

Project Synopsis: This project is systematic review project on the use of benzodiazepine among people with dementia living in residential aged care

Research option(s) of interest: MD Summer Research

Student Learning Outcomes: By completing the project, students are able to:

1. Develop search terms.
2. Identify relevant databases for literature searching.
3. Database searching
4. Referencing management using Endnote (reference management software).
5. Systematically reviewing and selecting relevant references using Covidence (review management software).
6. Data extracting and appraisal.
7. Synthesise the research findings.
8. Data analysis using Stata: Meta-analysis.
9. Draft a manuscript for publication.

Student Activities:

1. Develop search terms.
2. Identify relevant databases for literature searching.
3. Database searching
4. Screening the literatures and selecting relevant references using Covidence (review management software).
5. Data extracting and appraisal.
6. Synthesise the research findings.
7. Data analysis using Stata: Meta-analysis.
8. Draft a manuscript for publication.

Prerequisite Skills: Experience with Endnote, Covidence, and quantitative data analysis is preferred for timely completion but not compulsory

Time frame for starting and completion of this project: Flexible

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PS038_LSJr: Breast/Lung Cancer projects in areas of pathology, genomics, biomarkers, patient quality of life

Researcher/Supervisor: Peter Simpson

Researcher/Supervisor's Email: p.simpson@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/1466>

Alternative Contact Person: Amy McCart Reed

Alternative Contact Person's Email: amy.reed@uq.edu.au

Ethics Approval/Application Number: 2005/HE000785

Project Location: UQ Centre for Clinical Research

Project Synopsis: We undertake a variety of research projects in the areas of breast and lung cancer. These vary from wet lab, computational and clinical projects in the areas of

- Molecular pathology
- biomarkers (on tissue sections or blood samples)
- genomics/bioinformatics
- patient quality of life questionnaire data analysis
- contributing to tissue banking and clinical database review

<https://researchers.uq.edu.au/researcher/1466>

<https://clinical-research.centre.uq.edu.au/lakhani-group>

Research option(s) of interest: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research", MD-PhD or MD-MPhil

Student Learning Outcomes: '- knowledge regarding breast/lung cancer aetiology and clinical management

- research skills
- exposure to medical research environment

Student Activities: various, project dependent tasks - lab work, computational analysis, statistics, pathology, clinical data analysis

Prerequisite Skills: attention to detail and enthusiasm;

project dependent eg previous lab experience preferred for wetlab project; experience with coding/computational analyses etc required for bioinformatics-based research

Time frame for starting and completion of this project: Flexible

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PS040_NC6c: Systematic review of cardiovascular outcomes in regional and remote Australia

Researcher/Supervisor: Isuru Ranasinghe

Researcher/Supervisor's Email: i.ranasinghe@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/24909>

Alternative Contact Person: Sunnya Khawaja

Alternative Contact Person's Email: s.khawaja@uq.edu.au

Ethics Approval/Application Number:

Project Location: UQ Northside Clinical Unit, The Prince Charles Hospital

Project Synopsis: About 30% of the Australian population live in regional and remote Australia. This literature review will examine the existing literature on outcomes of cardiovascular disease in regional and remote Australia, identify potential knowledge gaps.

Research option(s) of interest: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research"

Student Learning Outcomes: Students are expected to learn systematic review and meta-analysis methodology and contribute to the conduct of the systematic review including developing search criteria, conducting literature searches using databases such as Medline and Embase, screening and extraction of relevant publications, data extraction. Students will also be expected to contribute to the analyses of findings and contribute to the write-up of a manuscript for publication.

Student Activities: Please see learning outcomes above.

Prerequisite Skills:

Time frame for starting and completion of this project: We would like to start this project in early 2024.

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PS041_nkLG: Assessing the evidence underlying TGA approval of high-risk (class III) cardiovascular devices

Researcher/Supervisor: Isuru Ranasinghe

Researcher/Supervisor's Email: i.ranasinghe@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/24909>

Alternative Contact Person: Sunnya Khawaja

Alternative Contact Person's Email: s.khawaja@uq.edu.au

Ethics Approval/Application Number:

Project Location: UQ Northside Clinical Unit, The Prince Charles Hospital

Project Synopsis: Implanted and invasive cardiac devices and prosthesis are highly useful but can cause significant patient harm thus ensuring robust evidence of efficacy is essential prior to use in clinical practice. This project will undertake a review of cardiac devices recently approved by the Australian regulator (Therapeutic Goods Administration) to examine the quality of evidence underlying the device approval.

Research option(s) of interest: MD Summer Research, Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research"

Student Learning Outcomes: Students are expected to learn how to search for and critically evaluate evidence to determine efficacy including results from randomised clinical trials and observational studies. They will also be expected to gain knowledge of regulatory approval pathways for high-risk devices prior to use in clinical practice. Students will also be expected to contribute to the analyses of findings and contribute to the write-up of a manuscript for publication.

Student Activities: Please see learning outcomes above.

Prerequisite Skills:

Time frame for starting and completion of this project: We would like to start this project in early 2024.

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PS042_Hlv3: Understanding the relationships between physical activity and BMI with premenstrual syndrome (PMS) and severe period pain (dysmenorrhea)

Researcher/Supervisor: Gabriela Mena Ribadeneira

Researcher/Supervisor's Email: g.menaribadeneira@uq.edu.au

Researcher Profile Link: <http://researchers.uq.edu.au/researcher/39573>

Alternative Contact Person: N/A

Alternative Contact Person's Email:

Ethics Approval/Application Number: H-2011-0371(2012/HE000132) approved by The University of Newcastle HREC EC00144 (ratified by The University of Queensland HREC EC00456/7)

Project Location: Online and/ or UQ Herston Campus

Project Synopsis: This research projects draws on data from The Australian Longitudinal Study on Women's Health (ALSWH) <https://alswh.org.au/>, which is the largest, longest-running project of its kind ever conducted in Australia. This longitudinal, population-based study explores the factors contributing to the health and wellbeing of over 57,000 Australian women in four cohorts.

The focus of this research project is on the 2 younger cohorts, using longitudinal data across 18 years.

Aims

The purpose of this research is to better understand the relationships between weight gain, physical activity, and aspects of young women's reproductive health, with a focus on the potential effects of physical activity on weight and reproductive health relationships. In this sub-study, we will examine relationships between physical activity and BMI with PMS and dysmenorrhea.

Rationale

Women in Australia are gaining weight at an alarming rate, resulting in heavier weight at a younger age. This means that outcomes associated with overweight and obesity, such as fertility problems (e.g., ability to have children, the need to use IVF and fertility hormones) may develop when women are younger. Additionally, other reproductive health problems such as premenstrual syndrome (PMS), severe period pain (dysmenorrhea), irregular periods, heavy periods, and endometriosis have also been associated with a higher BMI, as well as with physical activity. Therefore, the potential effect of physical activity in attenuating the adverse associations between weight and reproductive health relationships is of interest.

Hypothesis/research questions

1. How are physical activity and BMI related to PMS and dysmenorrhea in young adult women?

2. Does physical activity attenuate any adverse effects of weight gain on these reproductive health outcomes?

Analysis plan

The analysis plan for this research project is in three stages:

1. Exploring the explanatory (physical activity and BMI) and outcome variables (PMS and dysmenorrhea)
2. Exploring the associations between physical activity and BMI (separately and together) with PMS and dysmenorrhea
3. Exploring the potential protecting effect of physical activity on the relationships between high BMI and the outcome variables.

Data available for this project include data from surveys 1 to 8 from the 1973-78 young cohort, and from surveys 1 to 6 from the 1989-95 new young cohort. For more information please see: <https://alswh.org.au/for-data-users/study-design/sample/>

Research option(s) of interest: MD Summer Research

Student Learning Outcomes: Data management skills

Learning to work with large datasets

Organisation of the literature (e.g., development of mind maps)

Data analysis (cross-sectional and longitudinal)

Interpretation of results

Elaboration of tables and graphs

Manuscript preparation and writing

Student Activities: Review of the current literature on the topic

Data analysis

Interpretation of results

Table and graphs development

Write up of reports

Prerequisite Skills: Previous statistical experience is desired.

Time frame for starting and completion of this project: Flexible

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PS043_dTig: A scoping review of cost-benefit analysis for dementia

Researcher/Supervisor: Hanh Dao

Researcher/Supervisor's Email: h.daotran@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/37588>

Alternative Contact Person: Namal Balasooriya

Alternative Contact Person's Email: n.balasooriya@uq.edu.au

Ethics Approval/Application Number:

Project Location: Centre for Health Services Research, Herston

Project Synopsis: Background: Cost-benefit analyses (CBAs) evaluate whether specific interventions are socially worthwhile by weighing their costs against their benefits. However, not all studies are comprehensive CBAs; some only report benefits or costs. We aim to identify, analyse, and synthesise the existing literature on dementia CBAs to provide a clearer picture of the economic aspects of dementia care and interventions.

Aims and objectives: Our scoping review examines cost-benefit analyses (CBA) related to dementia interventions.

Method: This review follows the JBI scoping review framework and adheres to the PRISMA-SCP guidelines, the scoping review extension for PRISMA. We will use Covidence, a powerful systematic review management tool, to streamline the screening process and ensure the highest quality of research synthesis

Research option(s) of interest: MD Summer Research, Student Self-guided Research

Student Learning Outcomes: By completing the project, students are able to: Develop search terms. identify relevant databases for literature searching, database search, referencing management, use Covidence (review management software) for screenings and data extraction, synthesise the research findings in the scoping review setting, and draft the manuscript for publication.

Student Activities: literature search, screening and data extraction for scoping review

Prerequisite Skills: Data base searching and experience of using "Covidence"

Time frame for starting and completion of this project: Start date: As soon as possible End date: 15/Feb/2024

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PS044_573F: Virtual Integrated Practice (VIP)-supporting a sustainable rural workforce using telehealth

Researcher/Supervisor: Jennifer Job

Researcher/Supervisor's Email: j.job@mater.uq.edu.au

Researcher Profile Link:

<https://medical-school.uq.edu.au/profile/10523/jennifer-job>

Alternative Contact Person: Claire Jackson

Alternative Contact Person's Email: c.jackson@uq.edu.au

Ethics Approval/Application Number: UQ HReC Project Number: 2022/HE001172

Project Location: UQ-MRI Centre for Health System Reform and Integration

Project Synopsis: Virtual Integrated Practice (VIP) was co-designed in partnership with rural general practices, with a focus on accessible rural continuity of primary care. Through the VIP Program, rural general practices are joined by an urban Vocationally Registered General Practitioner who provides ongoing care to patients via telehealth. A key feature of this Program is that GPs are known to the practice and fully embedded in the practice team for a minimum of 18 months, despite working remotely, to promote continuity of care. Since the Program was implemented, over 1900 services have been provided to rural and remote patients in Western Queensland, including acute care, chronic disease management, mental health, and others. VIP is expanding to additional vulnerable practices located across the geographies of Queensland. Using a rigorous evaluation framework, the effectiveness and implementation of the Program including its sustainability, barriers and enablers to implementation, and key criterion for broader scale up will be evaluated.

More information on the project can be found here:

<https://medical-school.uq.edu.au/about/mayne-academies-clinical-disciplines/general-practice/centre-health-system-reform-and-integration/virtual-integrated-practice-vip-program>

Research option(s) of interest: Year 2 Elective MEDI7281 "Foundations of Medical Research"

Student Learning Outcomes:

Developing a research question

Analysing research data

Preparing results for publication

Student Activities: Thematic analysis of qualitative data

Analysing billing data to inform a sustainable funding model

Prerequisite Skills:

Time frame for starting and completion of this project: Flexible

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PS047_wURP: Emergency Department Trauma Reception and Handover

Researcher/Supervisor: Glenn Ryan

Researcher/Supervisor's Email: Glenn.Ryan@health.qld.gov.au

Researcher Profile Link: <https://www.linkedin.com/in/glenn-ryan-9aa2a256/>

Alternative Contact Person: Rob Eley

Alternative Contact Person's Email: r.eley@uq.edu.au

Ethics Approval/Application Number:

Project Location: Princess Alexandra Hospital Emergency Department and Southside Clinical Unit

Project Synopsis: The process of trauma reception and handover in the emergency department (ED) is central to the initial management of patients suffering major trauma. It allows for the rapid incorporation of pre-hospital information regarding mechanism of injury, injury patterns, pre-hospital management to initial diagnostics (imaging, point-of-care tests) and primary patient assessment to allow for early decision making regarding immediate interventions and patient trajectory through the ED (to CT or theatre). The Princess Alexandra Hospital ED has a structured trauma reception process that incorporates a "hands-off" approach. This entails handover from pre-hospital teams to a lead trauma clinician while initial diagnostics and patient assessment happen concurrently. This is different to many other major trauma centre reception where clinical management is only started after handover to the entire team. We believe our approach is better by reducing time to first management and would like to study this.

Research option(s) of interest: Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research"

Student Learning Outcomes: Literature review, survey analysis, writing a journal paper

Student Activities: This project will incorporate a literature review around trauma reception and handover, the development of a survey to qualitatively review our reception pathway, build on previous work on time to imaging for trauma patients and potentially result in a publication.

Prerequisite Skills: None

Time frame for starting and completion of this project: The project time frame is flexible although would be expected to be completed within six months.

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PS048_KT3X: Older Adult Trauma Patient Audit

Researcher/Supervisor: Glenn Ryan

Researcher/Supervisor's Email: glenn.ryan@health.qld.gov.au

Researcher Profile Link: <https://www.linkedin.com/in/glenn-ryan-9aa2a256/>

Alternative Contact Person: Rob Eley

Alternative Contact Person's Email: r.eley@uq.edu.au

Ethics Approval/Application Number:

Project Location: PAH Emergency Department and Southside Clinical Unit

Project Synopsis: The Princess Alexandra Hospital Department of Emergency Medicine's Emergency Department (PAH ED) is one of two adult major trauma centres in Brisbane. As the population we service ages, we are looking to review our approach to the clinical management of older adult trauma patients (≥ 65 years of age). We are very aware that older patients who suffer trauma and do not meet pre-specified trauma team activation criteria have delays to being seen and delays to decision-making regarding analgesia, imaging and mobilisation. Such delay result in risk of delirium and adverse events. We aim to develop a pathway from triage to inpatient that identifies this cohort of patients and "front-loads" their care, thus minimising delays to decision-making. This project will undertake an audit of our older trauma patient cohort to provide local data (e.g. total numbers, injury severity scores, injury patterns, missed injuries, time to imaging, time to analgesia, time to intervention, discharge pathways) that will be used to develop our approach and education when managing older adult trauma patients in the PAH ED.

Research option(s) of interest: Student Self-guided Research, Year 2 Elective MEDI7281 "Foundations of Medical Research"

Student Learning Outcomes: How to do literature review, audit and present descriptive statistics

Student Activities: Literature review of management of older adult trauma case management.

Identification of suitable patient cohort for audit

Audit of presentation, management and discharge.

Reporting

Prerequisite Skills: Familiarity with literature review and Excel would be beneficial.

Time frame for starting and completion of this project: Flexible but expected to be completed within a nine-month period.

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PS049_C7k9: How long till we get it right? Appropriate and Inappropriate Imaging in UTI in children

Researcher/Supervisor: Sunday Pam

Researcher/Supervisor's Email: sunday.pam@uq.edu.au

Researcher Profile Link: <https://researchers.uq.edu.au/researcher/4628>

Alternative Contact Person:

Alternative Contact Person's Email:

Ethics Approval/Application Number: LNR/2020/QCQ/67751

Project Location: Rockhampton

Project Synopsis: The study is reviewing the use of imaging in acute urinary tract infection in children over a ten-year period to search for trends of adherence to established guidelines.

Research option(s) of interest: MD Summer Research, Student Self-guided Research

Student Learning Outcomes: Learning clinical data collection

Appreciation of basic principles of analyses using real data

participation in writing a paper using real data

Student Activities: Collecting the raw data from Emerald Hospital Records.

Prerequisite Skills: Ability to use Excel sheet online.

Time frame for starting and completion of this project: February-March 2024

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