



2023-24 Adelaide Summer Research Scholarships.

Researchers listed in this document are interested in supervising students for Summer Research Scholarships in the [Faculty of Health and Medical Sciences](#).

Eligible students are encouraged to contact Researchers to discuss their research projects and potential supervision for a Summer Research Scholarship.

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ADELAIDE DENTAL SCHOOL:

Researcher:	Research Area:	Available Project(s):
Dr Sonia Nath	Oral microbiome, oral public health, Indigenous oral health	Provision of culturally safe dental care to Indigenous South Australians and impacts on improved general health Indigenous South Australians carry a disproportionate burden of dental diseases , with approximately 80 percent of Indigenous adults having both periodontal disease and dental caries. The chronic inflammatory nature of many dental conditions means widespread systemic impacts, particularly on type 2 diabetes, chronic kidney disease and cardiovascular disease. Evidence suggests there are barriers experienced by Indigenous South Australians in accessing timely and culturally safe dental care. This study aims to: (1) elicit the views of Indigenous South Australians regarding their perspectives of what comprises culturally safe dental care; (2) provide such dental care and; (3) assess any changes in both oral and general health using point-of-care testing following receipt of timely, comprehensive and culturally safe dental care. This study will be an intervention without randomisation. For the intervention component, participants will take part in oral epidemiological examinations at baseline and 12-month follow-up (after receipt of dental care), which will include collection of saliva, plaque, calculus, and completion of a self-report questionnaire. The primary outcome measures – changes in type 2 diabetes (HbA1c), cardiovascular disease (CRP) and chronic kidney disease (ACR) - will be obtained by blood/urine spot from a finger prick/urine collection at baseline and 12-month follow-up via point-of-care testing.
Dr Sneha Sethi	Oral Health Research	Contact Researcher for discussion.
Dr Carly Moores	Oral health, nutrition, health services research	Evaluation of a project to improve oral health for patients at Southern Adelaide Local Health Network The summer research scholar will contribute to the evaluation a current project which aims to improve oral health for patients across the Southern Adelaide Local Health Network. The scholar will gain experience using an implementation research framework and tasks including literature searching and data analysis/presentation.



ADELAIDE MEDICAL SCHOOL:

Researcher:	Research Area:	Available Project(s):
Miss Ellie Treloar	Surgery	How we can improve the non-technical skills of surgeons, and subsequently, patient outcomes. Please contact researcher for further information.
Prof Claudine Bonder	Cancer Biology	The Bonder laboratory studies the intricate interplay between cancer cells and the tumour microenvironment (particularly blood vessels) to better understand the biology that underpins cancer progression. With a focus on translating their scientific discoveries into outcomes for better human health, their work aims to provide new treatment opportunities to prevent tumours from growing and metastasising to vital organs.
Mr Stuart Callary	Orthopaedics & Trauma	Measuring the ilio-ischial movement in revision hip replacement patients Our accurate measurements have identified for the first time movement between the ischium and ilium post revision hip replacement surgery. Three projects are available including 1)radiographic measurements; 2)phantom validation; and 3)investigation of different treatment methods.
Prof John Beltrame and Dr Clementine Labrosciano	Medicine/ Cardiac, Respiratory and Vascular Health / Translational Vascular Function Research Collaborative	Readmission rate of South Australian Heart Attack Patients This project will involve learning about the Coronary Angiogram Database of South Australia (CADOSA) Registry and use linked data to determine the 30-day readmission rate of patients admitted to hospital with an acute myocardial infarction. Contact researcher for discussion.
Dr Tim Lathlean	Exercise-based interventions for chronic conditions.	Contact researcher for discussion.
A/Prof Devendra Hiwase	Myelodysplastic syndromes (MDS) and acute myeloid leukemia (AML)	Contact researcher for discussion
A/Prof Chung Hoow Kok	Translational research and biomarkers discovery in leukemia	Contact researcher for discussion
Dr Patrick Fordjour Asare	Chronic Inflammatory Lung Disease	Health Impacts of Bushfire Smoke
A/Prof Alexia Pena	Paediatrics	Contact researcher for discussion on projects on children and adolescents



A/Prof Richard L Young	Nutritional physiology, critical illness	<p>1. (Clinical Research) Can blocking sweet detection in the gut improve blood glucose control in people with type 2 diabetes?</p> <p>2. (Basic Research) Does safeguarding cortisol targeting save lives in the critically ill?</p> <p>Contact researcher for discussion.</p>
Dr Sivabaskari Pasupathy	Medicine	<p>Coronary Angiogram Database of South Australia (CADOSA): Improving health outcomes in patients undergoing coronary angiography</p> <p>Coronary angiography is the clinical benchmark technique in the assessment of coronary artery disease with more than 6,000 performed in South Australia each year. Despite its diagnostic benefits in identifying the presence of coronary disease, its benefit to the patient has been less rigorously studied and will be the focus of this project. CADOSA is an internationally renowned clinical registry incorporating global links with organizations including the American College of Cardiology National Cardiovascular Data Registry and the International Consortium of Health Outcomes Measurement (ICHOM).</p> <p>Clinical and Vasomotor Studies of Patients with Myocardial Infarction and Non-Obstructive Coronary Arteries (MINOCA)</p> <p>Approximately 5-10% of patients who experience a myocardial infarct do not have significant coronary artery disease, prompting the clinical question of what is the underlying mechanism. This project will (i) integrate with established registry studies to assess clinical outcomes and health status of MINOCA patients and (2) utilise invasive and non-invasive clinical techniques to elucidate potential mechanisms that may be responsible for the myocardial infarct.</p>
Prof Dennis Lau	Autonomic dysfunction [Postural orthostatic tachycardia]	<p>The Australian POTS patient registry collects medical and health related quality of life information for the purposes of research. Interns will work with the research team in all aspects of data collection, analysis and synthesis using data from this database. Aspects of health and medical data will be synthesized for dissemination in the form of a scientific journal article.</p> <p>Contact researcher for discussion and further details</p>
Prof Leonie Heilbronn	Obesity, Nutrition and Metabolism	<p>Join the Obesity and Metabolism lab, situated in the iconic SAHMRI building, where you will delve into the potential of intermittent fasting as a strategy to mitigate the risk of type 2 diabetes. A summer scholarship is an exciting opportunity to gain hands-on experience in a dynamic research environment.</p>



		<p>As part of this experience, you will have the chance to engage in activities such as setting up and attending clinic visits, interacting with study participants, and gaining experience in laboratory techniques including extraction, clinical chemistry, and analyzing data. Being involved in these activities will provide you with valuable insights into the research process and the concept of food as medicine.</p>
Dr Ryan Quarrington	Orthopaedic and Trauma Research	<p>Developing an instrumented surrogate spinal cord for estimating spinal cord injury risk during simulated neck trauma.</p> <p>Cervical spinal cord injury (SCI) causes significant emotional and economic burden. The relationship between neck trauma and SCI severity is unclear, inhibiting the development of improved preventative measures and treatments. My research aims to improve our understanding of neck injury and SCI mechanisms through experimental models of trauma, but it is difficult to assess SCI risk in the lab. During neck trauma, the amount of spinal cord compression (caused by fractured vertebrae or herniated spinal discs, for example) corresponds to neurological impairment severity. Therefore, the aim of this project to develop an instrumented surrogate cervical spine cord that can acquire sensitive, high resolution, cord deformation measurements during experimental models of neck trauma.</p>
Prof Jennifer Couper and Dr Rebecca Thomson	Paediatrics and Type 1 diabetes	<p>The impact of early life health events and medications on the development of type 1 diabetes</p> <p>Assisting with coding health events and supplement and medication use from women during pregnancy and their children during early-life as part of the Environmental Determinants of Islet Autoimmunity Study (ENDIA). ENDIA is Australia's largest study investigating the causes of type 1 diabetes, with particular focus on prenatal and early-life exposures.</p>
Dr Melanie Wittwer	Cardiology and Intensive care	<p>Northern Adelaide Local Health Network (NALHN) Out-of-Hospital Cardiac Arrest (OHCA) Registry</p> <p>OHCA is associated with only 12% overall survival. Our projects aim to improve overall survival after out-of-hospital cardiac arrest by utilising the NALHN OHCA registry to investigate cardiac interventions, gender disparities and end of life care.</p> <p>Contact researcher for discussion.</p>
Dr Ryan Quarrington	Orthopaedic and Trauma Research	<p>Injury patterns and patient outcomes associated with micromobility accidents.</p> <p>Project description: Electric scooters (e-scooters) and other</p>



		<p>personal micromobility devices are increasingly popular modes of transportation, with hire e-scooters recording 808,000 trips in Adelaide (as of October 2022) since they were introduced in 2019. However, emerging reports from other cities have found that the adoption and misuse of micromobility devices has led to an influx of related injuries at hospital emergency departments, both of the rider and other road users (e.g., pedestrians and cyclists). In order to develop new legislation around the use of these transportation modes, and to guide prevention strategies and clinical management of the injuries associated with their use, additional evidence on injury patterns and patient outcomes is required. The aim of this project is to investigate the injury patterns and patient outcomes of micromobility accident cases admitted to the Royal Adelaide Hospital emergency department.</p>
Dr Joel Chan	Medicine	<p>Autosomal dominant polycystic kidney disease and its extrarenal manifestations, including thromboembolic events and intracranial aneurysms. Contact researcher for discussion.</p>
Dr Maleesa Pathirana	Cardiology, Obstetrics and Gynaecology	<p>Pregnancy and heart disease This project seeks to explore the influence of pregnancy complications on future health of women who present to the Lyell McEwin Hospital with heart disease. Traditional risk factors for heart disease include hypertension, diabetes, smoking and obesity. There is clear evidence indicating that pregnancy complications should be counted as equally important risk factors, but they are not routinely considered by clinicians in risk assessments. This clinical project will recruit inpatients and administering pregnancy history questionnaires.</p>
Dr Ronan Smith	Biophysics / Physics - Imaging	<p>Visualising XV Lung Data X-ray Velocimetry (XV) is a technique that generates 3D maps of lung function (rather than structure in traditional CT). We would like to explore new ways of visualising and analysing the data (which could involve the use of AI) - ideally you should have experience coding Python or similar.</p>
A/Prof Lee-anne Chapple	Critical Care Nutrition	<p>A/Prof Chapple leads a group of Dietitians and Research Scientists embedded within the Royal Adelaide Hospital's Intensive Care Research Unit. Research within this group broadly encompasses nutrition physiology in critical illness and its role in improving short- and long-term outcomes. Project's within this team for 2023/2024 will relate to post-ICU physical and functional recovery.</p>



<p>Prof Jose Polo</p>	<p>Epigenetics, reprogramming and cancer</p>	<p>The Polo group is interested in the transcriptional and epigenetic mechanisms that govern cell identity, in particular pluripotency, reprogramming of somatic cells into induced pluripotent stem (iPS) cells, development and cancer. We have multiple projects available including but not limited to:</p> <ol style="list-style-type: none"> 1. Exploring the biochemistry of epigenetics in a prostate cancer model. 2. Reprogramming marsupial fibroblasts into induced pluripotent stem cells. 3. Investigating the epigenetic and transcriptional changes during reprogramming of cells to pluripotent stem cells. <p>Please contact us for discussion of potential projects.</p>
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ADELAIDE NURSING SCHOOL:

Researcher:	Research Area:	Available Project(s):
<p>A/Prof Frank Donnelly</p>	<p>nursing / health</p>	<p>Contact researcher for discussion</p>
<p>A/Prof Lynette Cusack</p>	<p>Joint project with nursing and physiotherapy</p>	<p>What exercise interventions are prescribed for the prevention and rehabilitation of abdominal hernia in surgical patients”.</p> <p>Quantitative Systematic review to explore: What surgical populations at risk of hernia are prescribed exercise (including parastomal) What types of exercise (whole body vs targeted etc) When is it prescribed (time from surgery) What is the setting (home vs centre based) What is the prescription</p> <p>Map out for the group how exercise intervention is applied to preventing and managing abdominal hernia.</p>

SOUTH AUSTRALIAN IMMUNOGENOMICS CANCER INSTITUTE:

Researcher:	Research Area:	Available Project(s):
<p>Dr Luke Isbel</p>	<p>Genomics/chromatin biology</p>	<p>Designing molecular tools to study transcription factors on chromatin.</p> <p>Gene editing has been revolutionized by CRISPR/Cas9. While it can be used to create useful mutations to study gene/protein, it can also be used to 'tag' proteins with useful molecular</p>



		tools, such as fluorescent proteins. This project will implement such a tagging system to create reporters of transcription factor activity in stem cells.
Dr Adrienne Sullivan	Epigenetic regulation in development and disease	The role of mutant GATA3 in aberrant enhancer remodelling This project will identify how mutations in transcription factor GATA3 affect its activity in remodelling the enhancer landscape, driving normal cells to become cancerous. It will involve cloning expression constructs, cell line generation and culture, and molecular biology techniques such as ChIP and ATAC.
Dr Mark Bunting	NF-kB hyperactivation in regulation of breast cancer biology	Investigate expression and regulation of NF-kB-induced genes in promoting aggressive breast cancer biology and therapy resistance.

SCHOOL OF BIOMEDICINE:

Researcher:	Research Area:	Available Project(s):
Prof Mark Hutchinson, Dr Joshua Holmes	Biomedical Science	Essential Skills for Research in Cellular and Molecular Biology We will be offering an intensive lab skills training for Bachelor of Health and Medical Science students, focusing on essential techniques for excelling in a Biomedical research laboratory. This hands-on summer scholarship focuses on building a solid foundation of practical skills and theoretical knowledge essential for success in Biomedical research. Intensive lab skills training for Bachelor of Health and Medical Science students focuses on essential techniques for excelling in Biomedical research. From lab safety to advanced methods like PCR, immunoassays and cell culture, participants gain hands-on experience and engage in real-world research, contributing to assay optimization. Gain skills for a successful research career.
Prof Joanne Bowen and A/Prof Tania Crotti	Physiology and Pathology/Oncology and Musculoskeletal	Development of an in vitro model to test novel treatments against oral mucositis. The study will include establishing a cell culture model of the oral mucosa, and testing different formulations of an antibiotic to prevent inflammation and barrier loss.
A/Prof Tania Crotti and Prof Joanne Bowen	Anatomy & Pathology/ Musculoskeletal	The impact of diet on chemotherapy-induced bone loss. This project will include evaluation of markers of bone loss in the tibia of rats treated with chemotherapy and different specialised intervention diets.
Dr Anna Leonard	Neuroscience (Spinal Cord Injury)	The Spinal Cord Injury Research Group is focused on understanding the secondary injury processes (neuroinflammation, blood-spinal cord barrier, oedema,



		intrathecal pressure)that occur post-SCI and how these can be targeted to improve outcome in both the acute and chronic setting (motor function, cognition function, neuropathic pain). Contact researcher for discussion regarding available projects and opportunities.
Dr Simran Sidhu	Neurophysiology	Contact researcher for discussion

SCHOOL OF PSYCHOLOGY:

Researcher:	Research Area:	Available Project(s):
Dr Rachel Searston	Applied cognitive science and human factors	Comprehension of forensic science evidence This summer project will focus on one of the following activities depending student interests: 1) conducting a scoping review of research on interventions to improve the communication and comprehension of forensic science evidence (e.g., DNA, fingerprints, handwriting etc), 2) compiling a dataset of legal case summaries based on real judgments in cases involving forensic DNA evidence, for use as experimental materials.
Dr Nicole Nelson	Developmental Psychology	How are emotions expressed to children? How we express emotions can change with how we feel, who is around, what we want, and who we are. For this project, we are interested in how we express emotion to infants. Using an established database, we will be exploring how adults' express emotions to children. There is the opportunity to be involved in determining what we explore first in your project.
Dr Natasha van Antwerpen	Psychology: Cross-cultural psychology; Applied cognitive and social psychology	Forward-backward translation of the Adelaide Eustress-Distress scale into Bahasa/Indonesian This project would involve forward-backward translation of the Adelaide Eustress-Distress scale to create a Balinese version for use in future cross-cultural research. Translation would be done in collaboration with student(s) in the School of Psychology at Universitas Udayana in Bali, and supervision would be shared with Professor Deborah Turnbull (UoA), and Dr Swasti Wulanyani (Udayana). Interested students may also be involved in future cross-cultural research using the scale in Adelaide and Bali.
Dr Melissa Oxlad	Discipline - Psychology; Research Area - Health Psychology	Contact researcher for discussion - options could include health psychology generally, diabetes, women's health, men's health, reproductive health
Dr Anastasia Ejova	The psychology of gambling	How do gambling-related beliefs shape gambling persistence in the lab? How does the impact of personal or family



		involvement in gambling differ depending on whether a person is part of a cultural minority group? This summer scholarship involves contributing to well-formed research papers on these two topics. After some shaping, it should be possible to submit the papers at the end of the summer period, allowing opportunities for student co-authorship.
Dr Peta Callaghan and Dr Samantha Newell	Evaluating the perceived effectiveness of online groupwork strategies	Building on a recent systematic literature review, we are initiating a project aimed at evaluating the perceived effectiveness of online group work strategies. Despite their common usage, many online groupwork strategies have not been formally assessed, highlighting a gap in our understanding. This project seeks to fill this research gap by conducting an evaluation, with the method to be determined (but may include surveys or interviews). We invite an enthusiastic individual to join us to explore the interplay between pedagogy and practice, ultimately illuminating the efficacy of online group work strategies.

SCHOOL OF PUBLIC HEALTH:

Researcher:	Research Area:	Available Project(s):
A/Prof Zohra Lassi	Adolescent Sexual and Reproductive Health	Evaluation of the Safe Youth Space Project: Enhancing Sexual and Reproductive Health among Adolescents This research project aims to assess the effectiveness of the Safe Youth Space Project in improving sexual and reproductive health outcomes among adolescents. Through a comprehensive evaluation, we will examine the project's impact on knowledge, behaviour, and access to SRH services, ultimately informing future interventions for youth empowerment and well-being.
Dr Timothy Barker	Research methodology, clinical epidemiology	ChatGPT to design searchers for systematic reviews - strengths, weaknesses and a strategy for implementation ChatGPT presents novel ways for researchers to expedite some processes of the research pathway. One way that ChatGPT has been utilised is in the development of search strategies (SS) to retrieve research articles from databases. This project seeks to compare SS produced by ChatGPT with those produced by researchers in their ability to retrieve relevant articles.



A/Prof Jaklin Elliott	Bioethics/palliative care/decision-making	Contact researcher for discussion. Broad topics below: End-of-life care, Palliative care (perceptions/access/delivery), Death and dying, Hope, Culturally and linguistically diverse communities, Social drinking, Qualitative research
A/Prof Jaklin Elliott	Public Health/bioethics and palliative care	The following topics are available: Death in the media, the military in the media, mental health in the media, child protection services/fostering in the media, public understandings of palliative care or Advance Care Planning. Contact researcher for discussion.
Dr Chandnee Ramkissoon	Occupational and environmental lung health	Protecting lung health during bushfire smoke season This project runs in collaboration with the Australian Wine Research Institute (AWRI) to explore the efficacy of air purification strategies to reduce indoor occupant exposure to bushfire-related smoke compounds. The student will have the opportunity to learn and build on research skills, including literature review and laboratory methods. Contact researcher for discussion.
A/Prof Carmel Williams and Dr Yonatal Tefera	Health in All Policies Research Translation	Exploring Urban Planning Decision-Making Tools: Integrating Health and Environmental Benefits of Trees and Greenspaces A literature review is currently underway to identify the existing urban planning decision-making tools in Australia and internationally that already incorporate the health and/or environmental benefits of trees and green space. The summer research Scholarship candidate will play a crucial role in organizing a workshop to discuss the findings of the literature review involving key decision-makers and stakeholders. Additionally, the student will be responsible for organizing invitations, facilitating the workshop, and compiling comprehensive reports and policy briefs based on the outcomes of the workshop.
A/Prof Carmel Williams and Dr Yonatal Tefera	Health in All Policies Research Translation	Building global capacity to implement the new WHO Health in All Policies 4 Pillars Model. Governments across the globe are facing intersecting social, political, economic and environmental challenges. There is growing recognition of the importance of working across government sectoral boundaries to achieve healthy public policy outcomes. A HiAP approach helps public agencies promote health, address the SDH, equity and well-being in government decision-making. In response, WHO has developed the new HiAP 4 Pillars Model. The Summer School Scholarship candidate will support the development of a new training course to assist countries and cities apply the new



		model. The student will support an international working group and contribute to the course curriculum development.
A/Prof Carmel Williams and Dr Yonatal Tefera	Health in All Policies Research Translation	Exploring the role of Boundary Spanners in research – policy translation. Boundary spanners are networkers of researchers and policy professionals that straddle the divide between the generators research and those who will use or be impacted by it. In public health policy and research boundary spanners broker relationships, across the margins of organisations and divisions to facilitate collaboration between groups that may otherwise not be connected. The Summer Scholarship candidate will support the convening of an investigative workshop with researchers and policy professionals to document that critical factors that support boundary spanning
Prof Paula Moynihan and A/Prof Jaklin Elliott	Improving food provision in residential care homes: staff perspectives of resident centred food provision	Evidence indicates individualising food and mealtimes, and the capacity of residents to exert choice about what to eat, when and where, are key to resident satisfaction and quality of life. This project will explore the residential care home staff views on what increasing meaningful involvement of residents in food choice means for residents and processes in residential care homes. The student will be involved in transcription and analysis of data collected through 13 qualitative semi-structured one-to-one interviews with care home staff, to identify what increasing resident engagement in food choice would mean for the resident, workforce, work processes and the business.