2025-26 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.

ADELAIDE DENTAL SCHOOL:

Researcher:	Research Area:	Available Project(s):
Dr Sonia Nath	Dentistry	Smiles and Stories, Dental Malocclusion's Impact on Quality of Life among Indigenous South Australians: A Mixed Method Study: The aesthetic standards of occlusion have historically been based on a Eurocentric view of beauty ideals, and this project aims to understand how this phenomenon has affected Indigenous children and adults alike. This study fills this crucial knowledge gap and provides insights that can inform targeted interventions and policy changes. Through a culturally sensitive approach, this project aims to provide insights into the multifaceted effects of malocclusion on psychological well-being and contribute to the improvement of healthcare practices among Indigenous communities.
Krishna Subedi	Health and medical sciences/ Dentistry/population oral health	Challenges in Achieving Universal Access to Oral Health Care in Australia: A Review. This review will focus on outlining the challenges and explores possible alternatives to overcome them. For other topic: contact researcher for discussion.

ADELAIDE MEDICAL SCHOOL:

Researcher:	Research Area:	Available Project(s):
Eugene Roscioli	Molecular and cellular biology	Proteomics in autophagy. Primary project - assessment of the essential biochemical process of autophagy as this relates to cell biology and proteomic variations. Specifically, the fundamental autophagy protein Sequestosome-1/p62 will be assessed using laboratory and analytical proteomic methods. Contact the supervisor for further projects on offer.
Tom Benjamin, PhD	Public Health	'Coughs and Sneezes Spread Diseases' campaigns were prominent in 20th Century pandemics. Yet the politics surrounding COVID have undermined this. Our project is to bring this back to awareness through a 'Who's watching you cough' behavioural campaign. AI may help in monitoring and publicizing cough hotspots. https://www.facebook.com/medicalconsumers
Dr Kevin Fenix	Immunology, Oncology, Host Microbe Interactions	My research interests include Cancer Immunotherapy, Cancer Biology, Immunobiology and Host/Microbe Interactions. This aligns with my affiliation with the Upper GI and ENT Surgery Departments at the Basil Hetzel Institute for Translational Health Research. Currently, I am identifying treatment modalities for Colorectal Cancer, Head and Neck Cancer and Chronic Rhinosinusitis.

		Contact researcher for discussion
Assoc Prof Tarik Sammour	Surgery	The first 200 pelvic exenterations at Royal Adelaide Hospital - a case series.
A/Prof Christina Bursill	Cardiovascular Research	Diroximel fumarate (DRF) is a drug used for suppressing the symptoms of multiple sclerosis. Research in our team has discovered that DRF also reduces the fatty blockages in the heart called atherosclerosis. This project will investigate the effects of DRF on inflammation and oxidative stress in cultured macrophages - the key cellular players of atherosclerosis. It will be an opportunity to learn important core lab skills including quantitative PCR, Western blotting and microscopy at SAHMRI. The goal is to determine if DRF is a new potential therapy for the prevention of heart disease.
Neil McMillan	Surgical Specialties	Contact researcher for discussion
Dr Alice Day, Advanced Gastroenterology Research Dietitian	Gastroenterology Nutrition	Project title: Food additives - friend or foe for gut health? Project description: Build a food additive database and analyse habitual food additive intake of people living with ulcerative colitis to determine association between food additive load and presence and severity of inflammation https://www.basilhetzelinstitute.com.au/profile/alice-day/
Dr Alice Day, Advanced Gastroenterology Research Dietitian	Gastroenterology Nutrition	Project title: Deep functional analysis of microbial metabolites of adults with ulcerative colitis Project description: Join a team in the laboratory to analyse microbial metabolites of carbohydrate and protein fermentation in adults with ulcerative colitis using diet as an adjunct therapy for treatment of inflammation. https://www.basilhetzelinstitute.com.au/research/research-theme/inflammatory-disease/inflammatory-bowel-disease-research-group/
Stuart Callary	Orthopaedics	Does open reduction internal fixation reduce the hospital costs associated with treating peri-prosthetic femoral fractures?
Ms Alia Cibich, Associate Professor Cindy Lee	Haematology/Cancer	Review of Second Primary Malignancies (SPM) in Myeloma Patients post Cellular Therapy in South Australia: Retrospective review of data from SA stem cell transplant registry and SA cancer registry to assess incidence, types and outcome of second primary malignancies (SPM) following treatment of myeloma, to determine impact of SPM on survival, and to explore factors increasing SPM risks- treatment related; patient related; disease related.
Aashray Gupta	Medicine	Contact researcher for discussion
Sivabaskari Pasupathy	Cardiology, Clinical Trials, Patient Centred Research	Understanding Under-Recognised Heart Conditions (INOCA, ANOCA, MINOCA)

		Description: Explore real-world data and clinical trials focused on heart conditions that occur without blocked arteries. Projects may involve clincial trials, imaging, registry analysis, or patient-centred outcomes. Contact the researcher for discussion.
Branka Grubor-Bauk	Virology, Immunology and Vaccine Development	Engineering Next-Generation mRNA Vaccines This project explores innovative mRNA vaccine design, integrating structural immunogen engineering, advanced delivery systems, tissue targeting and human-relevant models. Students will investigate strategies to enhance antigen stability, immune breadth and durability, with applications across challenging viral pathogens such as hepatitis C virus and emerging pandemic threats.
Dr Ronan Smith	Multidisciplinary - X-ray Imaging	Multiple Projects: X-ray Velocimetry X-ray Velocimetry is a new modality for dynamically imaging the lungs. We are running an XV clinical trial and using XV in preclinical animal models. We have a range of projects available that can be tailored to students from across disciplines. Please contact me for discussion.
Associate Professor Alexia Pena	Paediatrics/Type 2 diabetes and polycystic ovary syndrome	Contact researcher for discussion as I have multiple projects in children and adolescents
Brandon Stretton	Medicine	Contact researcher for discussion
Dr Sarena La	Cardiology	Contact Researcher for Discussion - project's in clinical cardiology.
Dr Monika Kutyna	Cancer/Haematology/ Bone marrow microenvironment	Contact researcher for discussion
Dr Stuart Callary	Orthopaedics	How Does Metal Artefact Reduction in New Photon Counting CT Scans Influence Trabecular Bone Visualisation?
Dr Catherine Toben	Psychiatry	Project Title: Using electronic patient record data to assess the effect of a perinatal mindfulness-based programme on maternal and infant outcomes 2018-2023: a linked population data study Project Description: Our research question aims to determine whether the Mindfulness-based intervention i.e. MILMIL programme has reduced maternal risk for anxiety and depression postnatally and as well as improve neonatal birth outcomes when compared with routine antenatal care. By using electronic hospital admission data this study will retrospectively assess the efficacy of

		MILMIL on maternal and neonatal outcomes of pregnant women at higher risk for anxiety and depression during pregnancy. In particular it will investigate whether mode of birth delivery is different between women having participated in the MILMIL programme compared with routine antenatal care. Secondly it will identify differences in neonatal growth curves in those offspring born to mothers having participated in the MILMIL programme compared with routine antenatal care. We expect mother-infant days with increased psychosocial stressors to have better birth and neonatal developmental outcomes after MILMIL compared with routine antenatal care. Statistical analyses • a probabilistic data matching approach will be employed while multivariate regression models will identify differences between MILMIL and routine antenatal care groups.
Dr Catharine Jawahar	Psychiatry	Title: Perinatal Mental health Burden: Comparing global and Australian patterns Perinatal mental health conditions have a long-lasting impact on the mental and physical health of both mother-child. This research project investigates the burden of perinatal mental disorders on maternal and child health outcomes. First, we will analyse the global burden of perinatal mental disorders using the Global Burden of Disease (2023) estimates, where we will quantify prevalence, disability-adjusted life years (DALYs), and other key risk factors worldwide. Second, we will compare Australia's perinatal mental health burden to global patterns by integrating National survey data with the GBD data. We expect that socioeconomic stratification will reveal disparities in incidence, service access and outcomes for mothers and children and identify gaps in Australia's performance relative to international benchmarks. This may further inform targeted interventions and or policy improvements in maternal mental healthcare.

ADELAIDE NURSING SCHOOL:

SOUTH AUSTRALIAN IMMUNOGENOMICS CANCER INSTITUTE:

Researcher:	Research Area:	Available Project(s):
Jia Pei Lim	Epigenetics	Title: Exploring the role of epigenetic modifiers in ribogenesis and gene silencing Polycomb Repressive Complexes 1 and 2 (PRC1/PRC2) are key epigenetic regulators that silence genes through H3K27me3. Their disruption is linked to developmental defects and cancer. Recent studies suggest a link between Polycomb target genes and the rixosome, a complex involved in rRNA processing and ribogenesis. However, how Polycomb dysfunction affects rixosome assembly and recruitment to chromatin remains unclear. This project aims to investigate how disruption of Polycomb function, via CRISPR-Cas9 knockout or drug treatment, impacts rixosome regulation and its chromatin recruitment. This placement offers valuable insights into gene regulation and epigenetics, ideal for students interested in cancer or stem cell biology.
Dr Stefano Mangiola	Computational biology; Bioinformatics; AI; Cancer research; Immunology	1. Using AI to understand the immune system Our immune system changes with age, sex, and background — and these differences can affect how well treatments like cancer immunotherapy work. However, most current research uses outdated data that does not reflect this diversity. We have built a large dataset from over 12,000 healthy people, across 30 organs, to map how the immune system changes. Now, we want to use powerful AI tools (like the technology behind ChatGPT) to learn from this data and discover better ways to target the immune system. This could lead to smarter, more personalised treatments. 2. Improving cancer treatment predictions Cancer treatments before surgery (called neoadjuvant therapy) do not work the same for everyone, and it is hard to predict who will benefit. We plan to combine two cutting-edge techniques — one that looks at single cells, and one that keeps the tissue's spatial layout — to get a detailed view of the tumour and immune system. By doing this, we hope to find early signs that tell us if a treatment is likely to work, helping doctors choose the best plan for

		each patient. 3. Building powerful tools to handle big biological data Modern biology creates huge amounts of data, and we need new tools to work with it. In partnership with CSL, we are building user-friendly software that can analyse single-cell and spatial data on powerful computers. These tools help researchers explore complex datasets more easily and make discoveries faster. 4. Creating a friendly software ecosystem for biology We are developing an R software suite called Tidyomics that helps researchers work with complex biological data in a clean and simple way. It is based on tidy data principles, which are widely used in data science. We aim to make it easier for scientists — especially those without advanced coding skills — to explore big datasets, including those from major projects like the Human Cell Atlas. Our tools are already used by a growing community of researchers around the world. https://github.com/MangiolaLaboratory https://github.com/stemangiola
Miss Basira Najafzadeh	Cancer research	Investigating resistance mechanisms in EGFR mutant lung cancer Our project is about exploring resistant mechanisms in non-small cell lung cancer using 2D and 3D culture models.
Dr Joanna Achinger-Kawecka	Cancer Epigenetics	Project Title: Activating p53 to target treatment-resistant ER+ breast cancer Project Description: Estrogen-receptor positive (ER+) breast cancer is one of the most commonly diagnosed cancers in Australia. Advanced ER+ breast cancers are treated with cyclin-dependent kinase 4/6 inhibitors (CDK4/6i). Unfortunately, resistance to CDK4/6 inhibitors can develop within ~2-3 years.

		Normal function of tumour suppressor protein p53, long known as the "guardian of the genome" for its role in preventing oncogenesis, is frequently impaired in ER+ breast cancer, despite p53 mutations being relatively rare. We have shown that restoration of p53 function via pharmacological inhibition of its negative regulator MDM2 inhibits tumour growth in CDK4/6i-resistant ER+ breast cancer. This wet laboratory project, suitable for Honours, Masters, or PhD, will use a multi-omics approach to characterise the molecular mechanisms of p53 activation and therapeutic response in patient-derived xenograft (PDX) and organoid (PDxO) models of breast cancer on the 3D genome, epigenome and transcriptome. We are seeking a candidate will possess prior research experience with in vitro and/or in vivo cancer models (cancer cell or ex vivo tissue culture, mouse models, and/or organoid culture), molecular biology techniques (DNA and RNA extraction, protein isolation, expression profiling etc), a keen interest in epigenetics, and drive to understand the fundamental mechanisms of breast cancer progression. Key experimental techniques established in the lab include Hi-C, ATAC-seq, RNA-seq, ChIP-seq/CUT&RUN, ONT Nanopore DNA and RNA sequencing, and single-cell and spatial profiling. The project will also involve establishing CRISPR-based technologies for functional studies. You will be supported by experienced wet laboratory researchers and bioinformaticians to further develop your molecular biology and computational skillsets. Please contact Dr. Joanna Achinger-Kawecka or Dr. Fiona Zhou to discuss your suitability for this project. https://www.achingerlab.com/
Dr Katherine Morel	Cancer biology	Project title: Understanding the role of TTP in prostate cancer stress signalling and treatment resistance Project description: Tristetraprolin (TTP) is involved in the regulation of mRNA stability and translation, particularly in stress response pathways. We have shown that TTP is also commonly downregulated in aggressive, treatment-resistant prostate cancer. This

		project will use CRISPR-modified prostate cancer cell lines to investigate the link between TTP, stress signalling and treatment resistance.
Dr Nora Liu	Cancer Epigenetics/Bioinformatics	Contact researcher for discussion
Georgette Radford and Yu Chinn Joshua Chey	Cancer Immunology	Title: Innate immune regulators in pancreatic cancer. Project description: Pattern recognition receptors (PRRs) are key molecules of the innate immune system that recognise microbial- and/or host-derived products to trigger the inflammatory response. We aim to understand the molecular basis by which specific PRRs promote pancreatic cancer, one of the most lethal and aggressive cancers in the world that is strongly linked with a dysregulated immune response. This project employs pancreatic cancer cell lines to ultimately assist in identifying genes for potential use as biomarkers for targeted therapy.
Dr Michael Roy	Chemical biology, structural biology and medicinal chemistry	Project Title Mapping and Modifying Cancer Pathways using Structural Chemical Biology Project Description The Molecular & Proximity Discovery Lab, led by Dr Roy, has multiple research projects exploring cancer-related molecular signalling, including Ubiquitin E3 ligases and Transcription Factors. We integrate synthetic chemistry, biochemistry, structural biology, cell biology and computational approaches including protein design and analysis. Contact Dr Roy for discussion of opportunities.
Dr Fuyi Li	AI in Biology	DNA Language Model Evaluation Benchmark on genome-wide prediction of disease variant effects
Dr Jacqueline Rehn	Bioinformatics / Cancer genetics	Frequency and Clinical Impact of Multinucleotide Variants in Acute Lymphoblastic Leukaemia This bioinformatics project identifies multinucleotide variants (MNVs) in key ALL genes from VCF files, re-annotates them, and predicts their functional effects. The results will clarify the frequency and clinical impact of MNVs in acute lymphoblastic leukaemia. Contact researcher for discussion on this or other projects.
Dr Mara Zeissig	Cancer research, cancer immunology	Title: Boosting response to immunotherapy in cancer

		Description: Most cancers don't respond to immunotherapy. We will test deletion of immune evasion genes to find which genes increase killing of cancer cells by T cells (immune cells). These are new drug targets to use in combination with immunotherapies to eradicate these cancers. Techniques include CRISPR-Cas9, cell culture, flow cytometry.
Luke Isbel	Epigenetics	Deconvoluting gene regulators by applying state of the art molecular tools in stem cells. We are applying cutting edge molecular biology tools in stem cells to understand the basic 'rules' by which a special class of proteins work, called transcription factors. These factors control the expression of genes, but their function remains largely enigmatic. This project will introduce students to state-of-the-art models of gene regulatory proteins, a critical prerequisite to understanding our genomes.
Dr Kristen Feher	Computational Biology, Data Science	Project 1: Analysis of prostate cancer spatial transcriptomics data Project 2: Defining statistically sound data analysis methods for routine wet lab assays Contact research for discussion
Dr Adrienne Sullivan	Epigenetics, molecular and cellular biology, cancer biology	Proteins that regulate gene expression, such as transcription factors, are often mutated in cancers. To understand the impact of these mutations on the cell, this project will use a variety of CRISPR/Cas9 tools to edit the genome and epigenome of model cell lines. Contact the researcher for discussion. https://health.adelaide.edu.au/adelaide-centre-for-epigenetics/our-research/sullivan-lab-development-epigenetics-laboratory

SCHOOL OF BIOMEDICINE:

Researcher:	Research Area:	Available Project(s):
A/Prof. Simran Sidhu	Physiology/Neurophysiology (human work)	Contact researcher for discussion
A/Prof. Adrian Elliott	Cardiac Physiology	Detection of Heart Failure in Patients with Cardiac Arrhythmias - can we use cardiac imaging, autonomic testing, and cardiopulmonary exercise testing to improve the detection of subclinical heart failure in patients with atrial fibrillation?
Mr. Jacob Sevastidis	Cognitive Neuroscience	Project Title: Exploring the Interaction Between Subjective Experience and Inter Brain Neural Synchronization Through a Hyper-scanning Paradigm. Project Description: Existing literature has alluded to Inter Brain Neural Synchronization (IBNS) altering subjective experiences, however the mechanisms facilitating this are unknown. This project aims to understand how IBNS may influence subjective experiences through a co-operative meditation paradigm, where two time-synchronized electroencephalograms will be recording neocortical behaviour from dyads.
Prof Jose Polo and Dr Rudrarup Bhattacharjee	Stem Cells, Neuroscience and Epigenetics	Human brain organoids are transforming research into brain development and disease. However, variability between organoids limits their use in disease modelling and therapeutic studies. This project aims to optimise a brain organoid protocol to produce consistent, reproducible models suitable for screening disease phenotypes. Ideal for students interested in stem cells and neuroscience.
Dr Stefka Tasheva	Neurobiology	Gene Therapy Approaches for PCDH19-Clustering Epilepsy This project investigates the therapeutic potential of CRISPR/Cas9-mediated gene editing and antisense oligonucleotides (ASOs) for the treatment of PCDH19-clustering epilepsy. The primary objective is to determine whether targeted disruption or silencing of the "toxic" Pcdh19 gene can prevent the development of neurological abnormalities associated with the disorder. The investigation will employ a combination of cell culture, Western blotting, immunofluorescence, and RT-qPCR to enable a comprehensive molecular and cellular evaluation of treatment efficacy.

Dr Carolyn Berryman	Health Science	Title: What Augmentative and alternative communication methods are currently used to communicate pain for children/adults with complex communication needs? This scoping review aims to identify and present AAC devices currently used for those living with permanent or temporary complex communication needs to self-report pain. We have an international team and you will search databases, confirm eligibility for the study, extract and clump data, and discuss the method of analysis.
Dr John Cirillo	Neurophysiology / Motor Learning	Project Title: Motor cortex and skill acquisition Project Description: The human motor cortex is important for successful skill acquisition. While non-invasive brain stimulation techniques show that inhibitory and excitatory motor cortical processes may be modulated by tasks requiring fast and accurate movements, how these changes relate to skill acquisition remains to be elucidated.

SCHOOL OF PSYCHOLOGY:

Researcher:	Research Area:	Available Project(s):
Dr Natasha van Antwerpen	Psychology	Perspectives and epistemic orientations of individuals at higher risk for misinformation belief and sharing: An interview study A study exploring the perspectives and experiences of people 'at-risk' for misinformation belief and sharing. We will interview participants reporting losing trust in institutions, becoming more politically extreme, and/or believing society is declining to understand their experiences and perceptions of information, misinformation, and institutions.
Dr. Nicole Nelson	Developmental and Emotion Psychology	Project Title: Children's and Adult's Understanding of Emotions Project Description: The project will focus on understanding how children and adults learn about, think about, and experience emotions. Tasks will be variable and may include reading literature to help formulate research questions, creating stimuli and building studies to be run with participants, helping to schedule and test participants in the lab, working with and analysing data, or writing up aspects of a project you've worked on. A Working With Children Check is a

		bonus. List of Possible Tasks: -Literature searches - Build testing protocols - Create photo and video stimuli to use in studies - Use software to build studies for presentation to participants - Contact parents to schedule children for a study session - Conduct studies with adult and child participants - Work with and analyze data - Writing up an aspect of the study you worked on
Dr Ella Moeck	Emotion Science	Title: Investigating the effect of different types of trigger warnings on emotional reactions and avoidance of negative content Description: Trigger warnings are widely used in various formats, despite questions about their efficacy. While some warnings specify upcoming content (e.g., Warning: the following content depicts a motor vehicle accident), others also specify the emotional reaction people might experience (e.g., Warning: the following content depicts a motor vehicle accident and may be distressing). In this project, we will run an online experiment comparing the effects of these two types of trigger warnings.
Dr Anastasia Ejova	Cognitive and health psychology	Beliefs, life events and wellbeing Two projects are available involving interpretation and writeup in of completed quantitative analyses - one around concepts of 'lucky events' and the other around psychological wellbeing before, during, and after divorce in a population-representative Australian sample. Aim will be to submit manuscripts for publication with students as co-authors.
Jacqueline Gould	Psychology and nutrition	One study aims to explore general knowledge, awareness, and experience about coeliac disease, an autoimmune condition which has unique challenges associated with gluten avoidance. Another study explores breastfeeding practices

SCHOOL OF PUBLIC HEALTH:

Researcher:	Research Area:	Available Project(s):
Assoc Prof Tarik Sammour	Surgery	Robotic Surgery at the Royal Adelaide Hospital - an audit of volume and efficiency in the public versus private sector settings.
Dr Cindy Stern	Evidence-based health care - evidence synthesis and guidelines	Gain experience in evidence synthesis, clinical guideline development, and implementation research while contributing to Australia's first national Motor Neurone Disease (MND guideline. Various projects exist. Contact researcher for discussion https://mndguideline.org.au/
Associate Professor Jaklin Eliott	Grief, death, dying, and palliative care	GriefLink is a not-for-profit organisation providing online resources about grief following bereavement. Partnering with SA Health, we seek a student to be part of auditing the GriefLink webpages; and/or comparing GriefLink with other grief-focused online resources; and/or developing resources targeting young people; and preparing a brief report on their activities. https://grieflink.org.au/