Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS048
Project title:	**Understanding standing in postural orthostatic tachycardia syndrome**
Discipline:	Clinical - School of Medical Sciences
Supervisor(s)	James P Fisher (Primary Supervisor) Greer Pugh
Contact details	jp.fisher@auckland.ac.nz
Skills Needed	• Interest/experience of working with human volunteers in a research setting • Interest/experience of collecting physiological data from human volunteers • Interest/experience of analyse physiological data using excel, R, SPSS etc • Ability to work well as part of a team (i.e., good communication skills, reliable, punctual, commited)

Project description

Postural orthostatic tachycardia syndrome (POTS) is when the heart rate increases excessively with standing. Accompanying symptoms include dizziness/ light-headedness, chest pain, shortness of breath, extreme tiredness, and brain fog. POTS can have a big impact on everyday life, but we do not understand what causes it.

The aim of our work in this area is to undertake a comprehensive assessment of blood vessel structure, function and regulation in POTS. More specifically, we will make comparisons between POTS patients and matched controls regarding central and peripheral arterial stiffness (pulse wave velocity), endothelial function (flow mediated dilatation) and venous function (venous occlusion plethysmography). Then we will perform a detailed study of the regulation of the blood vessels by the sympathetic nervous system because this has been neglected in POTS. These investigations will provide novel insights into how vascular structure, function and regulation are altered in POTS. This may help improve and personalise the treatment of patients with POTS.

During the 10-week Summer Research Scholarship you will assist with recruitment and testing of POTS patients. This will involve guiding the participants through the informed consent process, familiarising volunteers to the laboratory, collecting data in the laboratory, analysing physiological data and preparing figures/tables and presentations. Full training will be provided.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS049
Project title:	**Can blood cells reveal GRIN disorder biology?**
Discipline:	Clinical - School of Medical Sciences
Supervisor(s)	Maggie Kalev (Primary Supervisor)
Contact details	m.kalev@auckland.ac.nz
Skills Needed	• Interest in molecular medicine, neuroscience, haematology, or rare disease research • Ability to read and summarise scientific literature • Clear scientific writing skills • Attention to detail • Basic understanding of gene expression or RNA-seq is helpful, but not essential • Willingness to work with analysed datasets, figures, and scientific text

Project description

GRIN disorders are neurodevelopmental conditions caused by genetic variants in GRIN genes, which encode subunits of the N-methyl-D-aspartate receptor (NMDAR). Affected children can have severe and variable neurological symptoms, but there are currently limited tools to stratify disease severity, monitor progression, or assess treatment response.

Although NMDARs are best known for their roles in the brain, they are also expressed in peripheral blood cells, where they influence calcium signalling and cellular function. Because direct studies of patient neurons are difficult, blood cells may provide a practical and clinically accessible source of biomarkers for GRIN disorders.

In this project, we have introduced representative loss-of-function and gain-of-function GRIN1 variants into the human Meg-01 blood cell line using CRISPR-Cas9 and performed RNA-seq. Early analyses show differentially expressed genes and dysregulated pathways, including genes linked to neurodevelopment and brain function. These findings support the possibility that blood cells may carry molecular signatures relevant to GRIN disorders.

The summer student will help interpret RNA-seq results, review relevant literature, prepare figures and summaries, and contribute to the writing of a scientific report and/or a brief publication.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS050
Project title:	**Metastatic Prostate Cancer in the Auckland region: Treatment and outcomes for Māori and Pacific Men**
Discipline:	Clinical - School of Medical Sciences
Supervisor(s)	Nicola Lawrence (Primary Supervisor) Dr Carmel Jacobs Assoc. Professor Fong Dr Simon Fu
Contact details	nicky.lawrence@auckland.ac.nz
Skills Needed	• Skills preferred but not essential: • REDCap • Data entry • Interest in oncology

Project description

Prostate cancer is the most common cancer in men in Aotearoa New Zealand, with significant ethnic disparities in outcomes, particularly for Māori men, who experience higher mortality rates. Despite lower incidence, Māori men are more likely to be diagnosed at later stages, resulting in poorer survival outcomes. Advanced prostate cancer, an incurable diagnosis, often requires intensive treatments, including hormone therapy, chemotherapy, and radiation treatment.

This retrospective audit will evaluate outcomes for men with metastatic hormone resistant prostate cancer under the care of the Te Toka Tumai Auckland medical oncology regional service. The study will assess disease stage at presentation to medical oncology, ethnicity, treatment received (including the uptake of additional therapies such as docetaxel and abiraterone), and survival outcomes.

The summer student will learn skills in data management, use of clinical outcome data, verbal and written reporting, manuscript drafting and will be included in authorship of work arising from this data. Ethics and locality approval is already in place. You will work closely with the clinical genitourinary medical oncology team. This project suits a student with an interest in oncology.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS051
Project title:	**Haematological infection prevention**
Discipline:	Clinical - School of Medical Sciences
Supervisor(s)	Peter Browett (Primary Supervisor) Rebekah Lane Eamon Duffy
Contact details	p.browett@auckland.ac.nz
Skills Needed	• Clinical experience • Data input and manipulation

Project description

The use of prophylactic antimicrobials to prevent infection and the associated risks of hospital admission, sepsis, and mortality is utilised in patients with haematological cancers, including those who have undergone transplantation, though there is inconsistently adopted across local, national, and international guidelines. Differing interpretations of the supporting evidence mean that guidance is frequently conflicting, leaving clinicians without a clear consensus.

The potential benefits of infection prevention must be carefully weighed against the risks of prophylactic therapy, which include financial cost, drug toxicity, the development of antimicrobial resistance, and disruption to the patient's microbiome.

Antimicrobial stewardship principles recognise that where prophylactic strategies are adopted into guidelines, regular review of both adherence and the ongoing balance of benefits and risks is essential. Without this oversight, the long-term effectiveness and safety of such strategies cannot be assured.

This study aims to evaluate the benefits and complications experienced by haematological patients at Te Toka Tumai – Auckland City Hospital, through the lens of antimicrobial stewardship. By examining current prophylactic practices, the study seeks to identify opportunities to optimise patient outcomes while minimising the broader risks associated with antimicrobial use.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS052
Project title:	**Patient experiences with uveitis: identifying unmet needs and priorities for care**
Discipline:	Clinical - School of Medical Sciences
Supervisor(s)	Rachael Niederer (Primary Supervisor) Jo Sims
Contact details	r.niederer@auckland.ac.nz
Skills Needed	• Excellent communication and interpersonal skills • Good organisation and time management skills • Ability to engage respectfully with patients from diverse backgrounds • Attention to detail and record keeping • Interest in patient-centred research and eye health • Ability to maintain confidentiality and professionalism

Project description

Uveitis is a group of inflammatory eye dise4ases that can cause pain, visual impairment, and in some cases permanent vision loss. While clinical research has focused on diagnosis and treatment, less is known about how uveitis affects patients' daily lives and what forms of support they value most.

This project will use focus groups to explore the lived experiences of people with uveitis. Participants will be invited to discuss the impact of their condition on vision, work, study, family life, emotional well being and social activities, as well as barriers to accessing care and support. The project will also examine patient perspectives on information needs, support services, and priorities for future research.

The student will assist with a literature review, development of focus group materials, participant recruitment, data collection and qualitative analysis of focus group transcripts. Findings will help identify unmet needs for patients and opportunities to improve care and support for people living with uveitis in Aotearoa New Zealand.

This project will provide clinical exposure to ophthalmology, and valuable experience in patient-centred research, qualitative methodology and stakeholder engagement.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS053
Project title:	**Outcomes for men with advanced germ cell tumours in the Auckland region**
Discipline:	Clinical - School of Medical Sciences
Supervisor(s)	Simon Yuen Fai Fu (Primary Supervisor) AP Peter Fong Dr Nicky Lawrence Dr Carmel Jacobs
Contact details	simon.fu@tewhatuora.govt.nz
Skills Needed	• Interest in oncology • Data entry • REDCap (preferable but not essential)

Project description

Germ cell tumours (GCT) are the most common malignancy affecting adolescent and young adult males. Rates of testicular cancer are increasing and AoNZ has one of the highest rates. The rate of testicular GCT among Māori men aged 15–44 (28/100,000) is substantially greater than for Pacific men (9/100,000), a rare example of difference in the incidence of any disease. Although most patients with good prognostic features have excellent outcomes, the international cure rates for male patients with advanced disease and intermediate or poor prognostic features are only 79% and 48% respectively. This retrospective audit of outcomes for men with GCT (all stages of disease) under the care of the Te Toka Tumai Auckland medical oncology regional service since 2008 will be the first retrospective audit of outcomes for men with GCT from Auckland. It will evaluate disease stage at presentation, ethnicity, treatment received and survival outcomes.

The summer student will learn skills in data management, excel, use of clinical outcome data, verbal and written reporting, manuscript drafting. Ethics approval is in place. There will be opportunities to work with the clinical genitourinary medical oncology team. This project suits a student with an interest in oncology and equitable cancer outcomes.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS054
Project title:	**The burden of endocarditis in the Te Tai Tokerau, Waitematā, Te Toka Tumai Auckland, Counties Manukau, Waikato and Hauora a Toi Bay of Plenty regions November 2025-2026.**
Discipline:	Clinical - School of Medical Sciences
Supervisor(s)	Veronica Playle (Primary Supervisor) Dr Simon Briggs Dr Hugh McGann
Contact details	v.playle@auckland.ac.nz
Skills Needed	• Data collection • Spreadsheet management • Review and assessment of clinical notes, radiology, surgery and microbiology

Project description

Endocarditis and cardiac implantable device (CIED) infections place a significant burden on the populations of the Northern parts of Aotearoa. This burden is increased for populations affected by significant health care inequity and rheumatic heart disease. We aim to review all people (adults and children) presenting with endocarditis/CIED infections in these regions, which serves a population of approximately 2.6 million people, and assess their outcomes.

The study will include those with confirmed or probable endocarditis/CIED between November 2025 and November 2026. The data will be collected prospectively with subsequent retrospective data collection and review from the summer students. The data collection will include the review of cardiology, cardiothoracic surgery, infectious disease, microbiology, radiology, neurology and rehabilitation aspects of each person's care.

The student will be based in Auckland but will also need to collect data from Te Tai Tokerau (Whangarei Hospital). A second student will collect the data in Waikato/Bay of Plenty and there will be flexibility for the students to collaborate.

This project will be the first step in implementing the new Australasian Collaboration in Endocarditis infective endocarditis registry. We hope this will lead to a presentation at an Australasian cardiac/endocarditis conference and may lead to a publication.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS055
Project title:	**Referral Indications and Diagnostic Pathways in Patients Diagnosed with Degenerative Cervical Myelopathy: A Retrospective Audit**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Anand Segar (Primary Supervisor) Rohil Chauhan
Contact details	anand.segar@auckland.ac.nz
Skills Needed	• Ability to perform structured medical record reviews • Attention to detail and accurate data extraction • Basic proficiency with Microsoft Excel or data management software • Literature searching and critical appraisal skills • Organisational and time-management skills • Ability to work independently and as part of a research team • Good written and verbal communication skills • Basic understanding of descriptive statistics and data analysis methods

Project description

Degenerative Cervical Myelopathy (DCM) is the most common cause of spinal cord dysfunction in adults and is frequently associated with delays in diagnosis. Early recognition and referral are important, as delayed treatment may result in irreversible neurological impairment. Patients are often incidentally diagnosed with myelopathy when presenting for other conditions such as lumbar spinal stenosis or in older adults with falls. Llittle is known about how patients with DCM are initially recognised and referred within routine orthopaedic practice.

This project will undertake a retrospective audit of patients diagnosed with DCM within a tertiary care orthopaedic spinal service. The student will review referral letters, clinical records, and available imaging reports to examine the diagnostic pathway preceding specialist assessment and eventual diagnosis. Specific objectives include identifying the provisional diagnoses and referral indications provided by referrers, determining whether DCM was suspected prior to specialist review, assessing whether cervical imaging had been performed before referral, and identifying cases where DCM was diagnosed incidentally during investigation for another condition.

The student will gain experience in clinical research methods, medical record review, data extraction, literature appraisal, and descriptive statistical analysis. Findings will provide insight into current referral pathways and potential barriers to early recognition of DCM, helping to inform future educational initiatives aimed at improving diagnosis and referral practices within primary and secondary healthcare settings.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS056
Project title:	**Pukawakawa Rural Regional Programme: How does it influence career and long term place of work?**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Aniva Lawrence (Primary Supervisor) Lineke Brenninkmeijer Antonia Verstappen
Contact details	aniva.lawrence@auckland.ac.nz
Skills Needed	• Evaluation of MSOD data • Interviewing senior clinicians • Interpreting Qualtrix survey responses • Report writing

Project description

This project aims to determine if the Pukawakawa Rural-Regional program has had a significant influence on clinicians choosing to work rurally long term. This will compare the data on rural origin students versus MAPAS entry students versus urban origin students. Students from the last 5 cohorts will be surveyed about their experiences while participating in the program and how that influenced where they worked and what specialty they wish to pursue. A selection of current senior SMO's that were previous Pukawakawa students will be interviewed to determine what aspects of the program and if it influenced them working long term in Northland. The student will be collating this data and evaluating the survey and interviews to determine qualitative themes into a journal article(s) format by the completion of the summer studentship.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS057
Project title:	**Preparing for switch of Cefuroxime to Ceftriaxone in Paediatric hospital care**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Assoc Professor Emma Best (Primary Supervisor) Assoc Professor Rachel Webb (Specialist Paediatrician, Starship and KidzFirst) Dr Sarah Primhak (Specialist Paediatrician, PhD candidate UoA) Catherine Li (AMS PHarmacist)
Contact details	e.best@auckland.ac.nz
Skills Needed	• Communication skills • Teamwork • Comfort in a clinical environment including hospital paediatric ward, emergency department • Ability to assess written work and condense protocols • Data presentation • Qualitative skills - creation of staff +/- whanau feedback questionnaire

Project description

Children hospitalised for complicated infections require intravenous antibiotics in their care. At Starship Children's Hospital and throughout NZ, intravenous cefuroxime is recommended for children with complicated pneumonia, surgical and urinary infections and is administered every 8 hours. An alternative is ceftriaxone which is administered once-daily. In NZ, adult hospitals have shown replacing cefuroxime with ceftriaxone reduced nursing administration time and healthcare waste. For children simplification of antibiotic IV administration may also lessen disruption to infant and whānau sleep, routine and distress associated with line-access. However, microbiology of infections differ between adults and children as do adverse events. In particular, NZ children with complicated respiratory infections have high rates of Staphylococcus aureus, with Māori and Pacific tamariki disproportionately affected. Therefore this change may be suitable for only a selection of some paediatric conditions. In preparation for practice change and guideline implementation, we have planned a summer studentship to get baseline data across Starship wards on cefuroxime use; including admission numbers, length of stay, seasonality, ward usage, observed time taken (nursing preparation, infusion to completion) equipment use, waste and whanau experience. This studentship will include both on ward time, collating medicine chart information and observing dispensing as well as data collation under supervision from Paediatricians and Pharmacists.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS058
Project title:	**Corneal nerve maps in health and diabetes**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Associate Professor Stuti Misra (Primary Supervisor) Josephine Dykgraaf
Contact details	s.misra@auckland.ac.nz
Skills Needed	• - Basic knowledge of imaging software including Adobe photoshop or CANVA

Project description

The overarching theme of the project is to determine corneal nerve microstructure changes as a function of age in health and diabetes, in children, adolescents and young adults. The specific aim to understand the sub-basal nerve configuration by preparing a contiguous montage. The nerve montage of the whorl region will help determine whether this region fluctuates in terms of orientation as compared to adults or over time in children and young adults with type 1 diabetes. This will help us in diagnosing and monitoring the disease in a young population at an early stage so that timely treatment can be administered.

Project code:	MHS059
Project title:	**Measuring Uterine Activity: A Scoping Review of Technologies and Evaluation Approaches**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Charlotte Oyston (Primary Supervisor)
Contact details	c.oyston@auckland.ac.nz
Skills Needed	• Interest in pregnancy and childbirth • Time management and organisational skills • Careful attention to detail

Project description

Monitoring uterine activity in pregnancy is important to diagnose labour and help identify complications in labour. External tocodynamometers and intrauterine pressure catheters are used in clinical practise but have limitations. There are newer technologies such as electromyography, and wearable or non-invasive digital devices that have been developed or are in development.

The student will work on a scoping review to map key characteristics of the literature, including what measurement approaches, validation methods, and outcomes have been assessed (e.g., accuracy, reliability, clinical utility, patient experience). The review will follow established scoping review framework to ensure transparency and reproducibility. The findings will provide a structured overview of existing research, highlight methodological trends, and identify areas requiring further investigation.

This work will contribute to informing future research in maternal health monitoring technologies.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS060
Project title:	**MDMA-Assisted Psychotherapy for Cancer Patients**
Discipline:	Clinical - School of Medicine
Supervisor(s)	David Benjamin Menkes (Primary Supervisor) Nicholas Hoeh Lisa Reynolds William Evans
Contact details	david.menkes@auckland.ac.nz
Skills Needed	• clinical research knowledge and skills, including data management and communication with research subjects • interest in palliative care and research ethics • skills in preparing scholarly presentations and publications

Project description

MDMA-assisted therapy (MDMA-AT) has shown promise in treating mental health conditions especially post-traumatic stress disorder. The ongoing EMMAC study (https://link.springer.com/article/10.1186/s13063-024-08174-x) is exploring the effect of MDMA-AT on depression, anxiety, and existential distress in patients with advanced cancer. A double-blind, randomised trial with active placebo control, EMMAC is already showing positive results but requires concerted effort to reach our recruitment target of 32 participants from across New Zealand. The student's role will be primarily patient facing: supporting recruitment, screening, coordination, follow-up, and data management for the study. In essence, the role will be focused on supporting participants to move smoothly and safely through the study protocol while maintaining close liaison with the research team.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS061
Project title:	**The interaction between General Practice placements and medical student career choice: a scoping review**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Dr Antonia Verstappen (Primary Supervisor) Assoc Prof Craig Webster
Contact details	antonia.verstappen@auckland.ac.nz
Skills Needed	Skills taught • Literature search and review • Literature search and literature review skills, including database selection, choice of key words, academic writing • Writing for publication • The student is expected to contribute significantly to a research paper

Project description

Each year since 2012, the Medical School Outcomes Database and Longitudinal Tracking (MSOD) project has collected demographic and career intention data from University of Auckland and University of Otago MBChB students at entry and exit to their programme, in addition to follow-up surveys in the postgraduate years. These questionnaires ask several questions about future career preferences.

Our team is interested to see if there is an interaction between General Practice and primary care placements, and medical student and graduates' future career intentions. To start answering this question, this study aims to undertake a scoping literature review on the interactions between General Practice placements and student career preferences, to examine the literature for any associations between these.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS062
Project title:	**Clinical Study of the Assessment and Management of Normal Pressure Hydrocephalus in the Auckland Region**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Dr Benson Chen (Primary Supervisor) Dr Joseph Donnelly Dr Imogene Scott
Contact details	benson.chen@auckland.ac.nz
Skills Needed	• Data collection and data entry • Excellent communication and interviewing skills • Excellent interpersonal skills • Comfortable with medical writing (desirable but not required) • Experience with conducting or being involved in qualitative studies (desirable but not required) • Familiarity with use of Excel and statistical analysis software (desirable but not required)

Project description

Normal pressure hydrocephalus (NPH) is a progressive condition involving gait disturbance, cognitive impairment, and urinary incontinence. A clinical diagnosis of NPH is made on the basis of neuro-imaging, history, and examination findings, as there is no definitive diagnostic test. This makes NPH challenging to diagnose. The factors influencing referral, investigation, and treatment selection are incompletely understood. Our hypothesis is that NPH is significantly undiagnosed in the Auckland region. The aim of this research is to identify factors that may help to improve diagnosis and selection of patients for NPH treatment.

The summer studentship will involve review of the medical records of patients with suspected NPH referred to for lumbar puncture and for shunt surgery at Auckland Hospital. The summer student will extract data from clinical records, including referral patterns, clinical features, radiological findings, lumbar tap test results, and surgical outcomes. The student will be expected to interview people affected by NPH as part of a qualitative sub-study, to understand the diagnostic and treatment journey that patients with NPH experience. There will be opportunities to present and publish the results of the study at local neurology meetings, and interact with clinicians working in Neurology and Neurosurgery.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS063
Project title:	**Exploring barriers to regular contact lens wear**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Dr Kalika Bandamwar (Primary Supervisor) Prof. Jennifer P. Craig
Contact details	kalika.bandamwar@auckland.ac.nz
Skills Needed	• Critical thinking • Good written and verbal communication skills • Team player • Familiarity with bio statistics would be beneficial but not essential

Project description

Contact lenses provide a convenient means of correcting suboptimal vision due to refractive error and can offer less restriction than spectacles in many environments, yet their uptake is sometimes limited, without clear reason. To assist clinicians in understanding and better advising and educating patients about contact lenses, this summer research project aims to find out the reasons why some people who are successfully fitted with contact lenses choose to wear them only occasionally and continue to rely on spectacle wear most days. Using a questionnaire-based survey, the study will investigate perceived barriers to regular contact lens wear among intermittent or occasional contact lens users. This clinically relevant project offers students experience in clinical research, survey design, participant recruitment, and data analysis, while contributing valuable insights into patient behaviour and real-world contact lens use.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS064
Project title:	**The association between fetal abdominal circumference and fetal growth restriction by ethnicity**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Dr Ngaire Anderson (Primary Supervisor)
Contact details	ngaire.anderson@auckland.ac.nz
Skills Needed	• Familiarity with Excel spreadsheet use • Attention to detail • Basic statistical knowledge - familiarity with statistical software ideal but not required

Project description

Antenatal prediction of fetal growth restriction (FGR) at birth has limitations. Current guidelines suggest that a fetal abdominal circumference (AC) <10th centile predicts the birth of a small baby as well as an estimated fetal weight (EFW) <10th centile. There is no evidence that this is the same for all ethnic groups. Anecdotally, some ethnic groups (e.g. South Asian) seem to be over-represented with AC <10th centile but EFW >10th centile, which may lead to over-diagnosis of FGR. Conversely, other ethnic groups may be under-represented.

This project will use routinely collected ultrasound and birth data to investigate the predictive value of an ultrasound AC <10th centile on birthweight <10th centile by ethnic group with comparison to the performance of the EFW <10th centile.

The successful student will be involved in data collection, cleaning, analysis and interpretation of results, and writing up findings. It is intended that this work would eventually lead to publication.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS065
Project title:	**Outcomes of CAPTEM Chemotherapy for Metastatic Phaeochromocytoma and Paraganglioma in Aotearoa New Zealand**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Dr Veronica Boyle (Primary Supervisor) Dr Marianne Elston Dr Ben Lawrence
Contact details	v.boyle@auckland.ac.nz
Skills Needed	• Enthusiasm to learn about a rare condition • Communicate with the research team • Organisational skills • Detail orientated

Project description

Phaeochromocytomas and paragangliomas (PPGLs) are rare neuroendocrine tumours that can cause severe hypertension, cardiovascular complications, and metastatic disease. Around one-third of patients have an inherited genetic predisposition, with SDHB gene variants associated with particularly aggressive tumours and poorer outcomes.

Treatment options for metastatic PPGL are limited. While radionuclide therapies and conventional chemotherapy are used, responses are often incomplete and toxicities can be significant. Capecitabine and temozolomide (CAPTEM) is an oral chemotherapy regimen widely used for other neuroendocrine tumours and has shown promising results in isolated PPGL case reports, particularly in patients with SDHB-associated disease. However, its effectiveness in PPGL has never been systematically evaluated in Aotearoa New Zealand.

This retrospective multicentre study will identify patients with metastatic PPGL who have received CAPTEM and assess clinical, biochemical, and radiological responses, treatment-related toxicity, progression-free survival, and overall outcomes. The study will also explore whether treatment response differs according to underlying genetic mutations, particularly SDHB.

Students will gain experience in neuroendocrine tumour research, cancer genetics, retrospective clinical data collection, and outcomes research. There will be opportunities to engage with the National Neuroendocrine Tumour Multidisciplinary Meeting, learn about precision oncology, and contribute to a project with strong publication potential that may help inform future treatment strategies for this rare disease.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS066
Project title:	**Obsessive Compulsive Disorder (OCD) and Treatment Outcomes with Psychedelic Medicines**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Dr. Nicholas Hoeh (Primary Supervisor) Dr. Anna Burnside A/P Frederick Sundram
Contact details	n.hoeh@auckland.ac.nz
Skills Needed	• Reviewing the literature relating to the treatment of OCD with psychedelic medicines. • Developing a search strategy and database searching • Screening relevant papers, extracting data and quality assessment • Summarising and reporting findings from the literature • Presenting findings at meetings or conferences where possible • Working towards publication of findings together with the research team, which may continue beyond the research elective

Project description

Obsessive-compulsive disorder (OCD) is a chronic mental health condition characterized by intrusive thoughts and repetitive behaviors, affecting 1–3% of adults over their lifetime. While effective treatments exist, many individuals achieve only partial symptom relief. Emerging evidence suggests that psychedelic-assisted psychotherapy, particularly with psilocybin, may offer a safe and effective alternative. These findings have generated growing interest in the potential application of psychedelic-assisted therapies to other psychiatric conditions, including OCD. This review examines the published clinical literature on the effectiveness of psychedelic-assisted psychotherapy for OCD and could assist in the development of a New Zealand-first Psychedelic Assisted Psychotherapy (PAP) protocol for OCD.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS067
Project title:	**Determinants of Clinical Outcomes and Long-Term Prognosis in Functional Movement Disorders: A Literature Review**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Frederick Sundram (Primary Supervisor) Nicholas Hoeh Anna Burnside
Contact details	f.sundram@auckland.ac.nz
Skills Needed	The summer research student will be able to develop the following skills – • Reviewing the literature relating to FMD • Developing a search strategy and database searching • Screening relevant papers, extracting data and quality assessment • Summarising and reporting findings from the literature • Presenting findings at meetings or conferences where possible Working towards publication of findings together with the research team which may continue beyond the research elective Ideal applicants – • Students with prior research knowledge and skills • Interest in mental health and neurology • Keen to work towards future publication

Project description

Functional Movement Disorder (FMD) is a debilitating condition at the intersection of neurology and psychiatry. While diagnostic clarity has improved significantly with positive physical signs, the long-term prognosis remains highly variable. Current clinical practice lacks a consolidated understanding to predict which patients will improve or deteriorate. This review addresses this gap by identifying, evaluating, and synthesizing the known demographic, clinical, psychological, and treatment-related determinants of outcomes in FMD.

Primary Question: What specific clinical, physical, and psychological factors are significantly associated with positive or negative long-term outcomes in patients diagnosed with Functional Movement Disorder?

Secondary Question: How do different therapeutic interventions (e.g., specialized physical therapy versus cognitive behavioural therapy) alter the prognostic trajectory of the disorder?

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS068
Project title:	**Staff and Patient Perspectives on Monitoring and Escalation After Surgery**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Ian Bissett (Primary Supervisor) Chris Varghese, William Xu, Cameron Wellsm Mikaela Law
Contact details	i.bissett@auckland.ac.nz
Skills Needed	• Interviewing skills, compassion, meticulous documentation, systematic thinking, writing, and writing.

Project description

Postoperative mortality is the third leading cause of death globally. Research from the University of Auckland has shown that Maori patients in Aotearoa New Zealand experience an avoidable, disproportionate burden of postoperative mortality, driven largely by failure to recognise and respond to deteriorating patients. Mortality after a complication is termed 'failure to rescue', and our goal is to improve our hospital's capacity to rescue pateints by improving the way we monitor patients after surgery.

Patients who do not feel confident or comfortable escalating concerns to nursing staff, or who face cultural barriers to doing so, are at greater risk of delayed intervention. The current standard of postoperative care involves four-hourly nursing observations of vital signs, and we know patients can deteriorate between these clinical touchpoints. Digital technologies including wearable vital sign sensors and AI-driven automated alert systems may offer an opportunity to transform monitoring, but must be designed with the needs and experiences of both patients and nurses at their centre.

Hence we are seeking to understand patient and staff perspectives on the current state of patient monitoring after surgery, and ideas and needs for future initiatives through this interview study of nursing staff, and patients after surgery.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS069
Project title:	**Does Prog Mets accurately predict prognosis for metastatic spine disease in the New Zealand population?**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Joe Baker (Primary Supervisor)
Contact details	joe.baker@auckland.ac.nz
Skills Needed	• Data collection and entry • Basic Excel experience

Project description

Student will be responsible for reviewing medical records of patients that have been treated for metastatic spine disease in the Department of Orthopaedic Surgery since 2006. They will extract demographic and clinical details, review treatments and complications and calculate survival. They will also calculate the ProgMets score, a new prognostic tool developed in Ireland by MCCabe et al. and determine if this has reliable predicative value in the New Zealand setting.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS070
Project title:	**Determining the feasibility of Antioxidant Challenge Test**
Discipline:	Clinical - School of Medicine
Supervisor(s)	John Albert Windsor (Primary Supervisor) Anthony R J Phillips Jiwon Hong
Contact details	j.windsor@auckland.ac.nz
Skills Needed	• Recruitment for pilot study of healthy volunteers (n=10) and patients (n=10) • Administration of intravenous antioxidant (with medically qualified supervisor) • Blood sampling / phlebotomy at intervals • Blood centrifugation and aliquoting • Plasma storage at -80°C and inventory • Urine collection and storage at -80°C • Use of StatOS platform for serial analysis of samples • Plotting decay curves of antioxidant levels and changes in oxidative stress biomarkers • Modelling effect of renal clearance of antioxidant levels • Data analysis • Presentation of results in appropriate forum • Drafting manuscript and Publication

Project description

This project will determine the feasibility of a standardised 'antioxidant challenge test' (ACT) to measure the degree of oxidative stress in patients following major surgery. Oxidative stress is an important and early disease mechanism, preceding the inflammatory response and physiological decompensation. This test has the potential to guide antioxidant supplementation and to predict postoperative complications. The ACT will involve the intravenous administration of an antioxidant. This will be consumed at a rate commensurate with the degree of oxidative stress. This is possible because of the development and translation of a voltametry technique by our group, and the production of a clinical grade diagnostic platform that allows serial measurement of oxidative stress using a suite of 4 biomarkers in near real-time. The project will involve establishing normal values in health volunteers (n=10) and conducting a pilot clinical study in patients after major surgery (using existing venous access) with both cohorts using the same protocol. The equipment is already being used in the hospital with a clinical trial, meaning that no set-up is required. Venous sampling will be at baseline, 15, 30, 60 and 120 minutes. This study will include establishing the adequacy of dosing, the strength of the output signal and the minimum duration of the test, all critical for the design of a definitive study in the future. The antioxidant levels decrease for two principal reasons: due to oxidative stress and due to renal clearance. Measuring the renal clearance of the antioxidant will be important to determine the loss of antioxidant due to oxidative stress. This will require sampling of urine at the same time points.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS071
Project title:	**Vaccination coverage in patients receiving haemodialysis in South Auckland**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Kalpa Jayanatha (Primary Supervisor) Dr Jamie Kendrick-Jones (Consultant Nephrologist, Department of Renal Medicine, Middlemore Hospital, Counties Manukau District, Health New Zealand)
Contact details	kalpa.jayanatha@auckland.ac.nz
Skills Needed	• Experience with data entry (i.e: MS Excel or equivalent) • Experience performing literature review using PubMed (including MeSH term searches) • Experience with medical writing

Project description

Although patients with end stage kidney disease (ESKD) have access to vaccinations through both primary and secondary care, there is limited data on vaccination coverage and gaps. "Vaccination coverage in patients receiving haemodialysis in South Auckland" is a retrospective observational study. The aim is to quantify the percentage coverage for common vaccinations (including influenza, pneumococcal, hepatitis B virus, varicella zoster) in a cohort of 600 - 800 patients with ESKD receiving intermittent haemodialysis at Middlemore Hospital, Counties Manukau District, Health New Zealand. The secondary aim is to explore differences in vaccination coverage stratified by age, sex, and ethnicity. The successful summer student will work with the study team to enter data into a secure RedCap database, perform a literature review relevant to Australiasia, and assist in writing a draft manuscript for the study. The summer student will be listed as a co-author in any publication(s) and will also have an opportunity to present the study as a poster at the Middlemore Hospital Research Week in 2027.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS072
Project title:	**Exploring Sleep Apnoea During Pregnancy With Digital Storytelling**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Kathleen Antony (Primary Supervisor) Elizabeth Broadbent Antalya Stevens
Contact details	kathleen.antony@auckland.ac.nz
Skills Needed	• No prerequisite skills. We will teach you what you need to know. If you have background with video and audio-visual editing, that is lovely. If not, we can teach you.

Project description

The project uses digital storytelling (DST) as a participatory research method to explore patients' experiences of obstructive sleep apnoea (OSA) care during pregnancy and as a tool for health communication.

OSA during pregnancy increases the chance of preeclampsia and may impact fetal growth. Treating OSA may help prevent preeclampsia. OSA remains under-diagnosed. This is partly due to diagnostic sleep testing. We have found that, despite eliminating financial and transportation barriers, sleep test completion is <50%. Research is needed to develop approaches to increasing uptake.

DST is an emerging method in health research. It involves a workshop process where people with lived experience write and share personal stories that are turned into 3-5-minute visual narratives. Participatory approaches to health research recognise that knowledge about health that is grounded in the local contexts and experiences of patients is vital for enhancing the relevance and impact of interventions. We aim to use DST to to co-create an educational intervention with pregnant people, maternity care providers, and Māori partners.

The student's role/ responsibilities will be to assist with: 1) running storytelling workshops, 2) video editing to create the final digital stories 3) data collection (survey distribution and observation) 4) data entry and possibly interpretation.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS073
Project title:	**Impact of gender and ethnicity on outcomes following coronary artery bypass grafting: has anything changed?**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Krish Chaudhuri (Primary Supervisor)
Contact details	krishanuc@adhb.govt.nz
Skills Needed	• *Statistical analysis of retrospective data available from database under supervision and guidance of primary supervisor • *Write a manuscript for peer-reviewed publication • *Deliver an oral or poster presentation at a local or international conference •

Project description

The aim of this single centre retrospective cohort study is to investigate whether there have been any changes in the last 5 years in outcomes in male and female patients according to ethnicity who have undergone isolated coronary artery bypass grafting (CABG). It has previously been described that women undergoing coronary artery bypass grafting (CABG) have poorer outcomes compared to men and that outcomes for indigenous populations have also been poorer. Other studies have contended that adjusted mortality rates may be similar between these groups, but post-operative morbidity rates are worse. In this research, the student will conduct statistical analyses of a dataset under supervision and be mentored while they write a paper for publication and presentation at a conference.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS074
Project title:	**Understanding Waitlist Failure in Pacific Peoples: An Analysis of the New Zealand Liver Transplant Programme**
Discipline:	Clinical - School of Medicine
Supervisor(s)	louise barbier (Primary Supervisor) Matthew McGuiness
Contact details	lbarbier@adhb.govt.nz
Skills Needed	• No specific skills are required • Familiarity with statistically analysis would be beneficial

Project description

The New Zealand Liver Transplant Unit (NZLTU) is based at Auckland City Hospital and serves as the country's sole national liver transplant service. Pacific Peoples represent 8% of liver transplant assessments at the NZLTU which is consistent with their share of the national population. However, despite a higher rate of progression to waitlisting, Pacific Peoples experience a significantly higher waitlist failure rate of 18%, compared to 10–11% in other patients. Waitlist failure is defined as delisting due to clinical deterioration, disease progression, or death while awaiting transplantation. The drivers of this disparity are unknown but may include differences in disease trajectory at listing, comorbidity burden, socioeconomic barriers to follow-up, geographic access, and differential rates of clinical deterioration between assessment and transplantation. This project will conduct a detailed case-level review of waitlist failures to characterise the clinical, demographic, and systems-level factors contributing to this disparity. The aim of this project is to identify targeted interventions to improve equity in transplant access and outcomes for Pacific Peoples in New Zealand.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS075
Project title:	**Cumulative Five-Year Outcomes After the FIIX Trial: A Follow-Up Study of Couples With Unexplained Infertility**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Lucy Prentice (Primary Supervisor) Cindy Farquhar Lynn Sadler
Contact details	lucy.prentice@auckland.ac.nz
Skills Needed	• Data management — Accurate handling of participant responses, secure data entry, and maintaining organised datasets for analysis. • Participant communication — Professional, empathetic communication when sending surveys and following up with non-responders. • Research ethics — Awareness of confidentiality, consent, and ethical handling of sensitive reproductive health information. • Literature review — Ability to read and summarise scientific papers, including the original FIIX trial protocol. • Basic statistical literacy — Understanding of core concepts such as primary outcomes, cumulative live birth, and follow-up measures. • Scientific writing — Interest in contributing to abstracts, reports, or manuscripts as the project progresses. • Organisation and time management — Coordinating survey waves, tracking responses, and meeting project timelines.

Project description

This summer scholarship project forms part of the extended follow-up of the FIIX Trial, a large randomised controlled trial comparing IVF, IUI, and sequential treatment strategies for couples with unexplained infertility. The original trial randomised 737 couples and followed them for two years, with cumulative live birth as the primary outcome. We are now seeking ethics approval to extend follow-up to five years, allowing us to understand longer-term reproductive outcomes beyond the initial study period.

The student will help deliver a nationwide survey to all original participants, including those who achieved a live birth and exited the study early. Outcomes of interest include additional live births, further fertility treatment, natural conceptions, and utilisation of public or private fertility treatment. The student will be responsible for sending surveys, tracking responses, following up with non-responders, and performing accurate data entry.

This role offers hands-on experience in clinical research operations, participant engagement, and data management. As the project progresses, the student will have the opportunity to contribute to data interpretation and manuscript preparation. This is an excellent opportunity for a student interested in reproductive medicine, epidemiology, or clinical trials to gain meaningful research experience.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS076
Project title:	**Characterising the clinical and genetic landscape of phaeochromocytomas and paragangliomas in Waikato Aotearoa/New Zealand**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Marianne Elston (Primary Supervisor) Dr Veronica Boyle Dr Jade Tamatea Dr Susan Richter
Contact details	m.elston@auckland.ac.nz
Skills Needed	• Desired skills/attributes: • Interest in endocrinology, genetics, oncology, endocrine surgery or clinical research • Strong attention to detail and ability to work accurately with clinical data • No prior research experience is required, and training and supervision will be provided throughout the project.

Project description

Phaeochromocytomas and paragangliomas (PPGLs) are fascinating but potentially deadly tumours. Due to excess catecholamines (i.e. “fight or flight" hormones) tumours can cause severe hypertension, heart failure, and occasionally sudden death. Tumours may metastasize and then treatment options are limited. Early diagnosis and surgery provide the best chance of cure, but tumours are often diagnosed late.

Around one third of PPGLs are linked to inherited genetic variants. Variants in the SDHB gene are associated with particularly aggressive disease. Preliminary data suggest a high proportion of patients with SDHB-related disease identify as Māori, although further research is needed to better understand the epidemiology and genetics of PPGL.

This project will investigate the incidence, clinical features, genetic testing, and outcomes of patients with PPGL in the Waikato/Midlands region over a 20-year period. The study will involve reviewing clinical records and collecting demographic, tumour, genetic, treatment, and survival data using a REDCap database.

The student will gain experience in endocrine and genetic research, including exposure to tumour genetics, clinical presentation, and treatment of PPGLs. There will also be opportunities to attend endocrine clinics. This project is based at Waikato Hospital, has ethical approval, and is expected to result in a peer-reviewed publication with the student as an author.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS077
Project title:	**Cognitive impairment in women with breast cancer: MRI analysis**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Marta Seretny (Primary Supervisor) Hanna van Waart Jo Lin
Contact details	m.seretny@auckland.ac.nz
Skills Needed	• Understanding of fMRI analysis • Familiarisation with MATLAB (preferably with the RESTPlus toolkit) • Knowledge of MR physics and FSL software • Knowledge of RStudio for statistical analyses • Familiarisation with statistical concepts such as generalised linear models, ANOVA, and T-tests.

Project description

Cancer related cognitive impairment occurs in up to 70% of women with breast cancer. The pathophysiological mechanisms are still poorly understood. Inflammation is considered a major driver for these cognitive changes. Neuroimaging can help understand the mechanisms underpinning cognitive impairment.

Methods

In this prospective case control study 20 patients with breast cancer and 20 age-matched health volunteers underwent an MRI scan of their brain. Patients came in at baseline (just after diagnosis) and after the completion of their second cycle of chemotherapy. Healthy volunteers made two visits at the same time points. Participants completed cognitive and quality of life questionnaires and donated blood at both visits.

The work

- MRI data preprocessing (bias field correction, brain extraction, motion correction, bias field correction, slice-timing correction, spatial smoothing, high-pass temporal filter),
- Utilisation of interpolation methods in transformation (KNN, trilinear, spline),
- Identifying nuisance components in fMRI data based on:
  - Spatial distribution, time course, and power spectrum,
  - Vertex analysis of subcortical structures with FSL-FIRST,
  - Grey matter density analysis with FSL-VBM,
  - Functional activity analysis with fALFF in RESTPlus, MATLAB,
- Designing a protocol for mean subcortical activity by transforming native subcortical masks into MNI and overlaying fALFF data for ROI analysis,
- Training a machine learning model for nuisance regression with FSL-FIX

Impact

Demonstrating the utility and feasibility of neuroimaging as a marker of cognitive impairment is the first step in assessing the usefulness of this technique in understanding this condition.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS078
Project title:	**The burden of infective endocarditis in the Waikato, Hauora a Toi Bay of Plenty and Northern regions; June 2025 to November 2026.**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Prof Martin Stiles (Primary Supervisor) Dr Hugh McGann
Contact details	martin.stiles@waikatodhb.health.nz
Skills Needed	• Access and interpret electronic clinical records • Use of Microsoft excel

Project description

Endocarditis places a significant burden on the populations of the Northern parts of Aotearoa New Zealand. This burden is increased for populations affected by significant health care inequity and rheumatic heart disease. We aim to review all people presenting with endocarditis in these regions, which serves a population of approximately 2.6 million people, and assess their outcomes.

The study will include those with confirmed or probable endocarditis between June 2025 and November 2026. The data is being collected prospectively with subsequent retrospective data collection and review from the summer students. This will include the review of cardiology, cardiothoracic surgery, infectious disease, microbiology, radiology, neurology and rehabilitation aspects of each person's care. The data for 2025 was collected by summer students and the summer student in 2026 will help collect the data for this year

The student will be based in Waikato but will also need to collect data from the Bay of plenty

This project will be the first step in implementing the new Australians endocarditis database. We hope that would lead to a presentation at an Australasian cardiac/endocarditis conference and may lead to a publication.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS079
Project title:	**Non-invasive brain stimulation as a novel treatment for nausea**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Prof. Greg O'Grady (Primary Supervisor) Dr. Charlotte Daker
Contact details	greg.ogrady@auckland.ac.nz
Skills Needed	• Patient contact • Communication skills • Experimental protocols • Data analysis • Write-up

Project description

Chronic nausea is a debilitating symptom affecting many patients with gut disorders, and current drug treatments often have limited efficacy or significant side effects. Emerging neuroscience research has shown that the dorsolateral prefrontal cortex (dlPFC) exerts top-down inhibitory control over brain regions involved in nausea processing, and that non-invasive transcranial Alternating Current Stimulation (tACS) of the dlPFC can significantly reduce nausea in healthy volunteers. This project aims to translate these findings into a clinical population for the first time.

The student will contribute to a sham-controlled crossover clinical study in patients with chronic gastrointestinal symptoms (e.g. gastroparesis, functional dyspepsia, chronic nausea and vomiting syndrome). Participants receive both active tACS (targeting the right dlPFC) and sham stimulation in a single session, with simultaneous non-invasive Body Surface Gastric Mapping (Gastric Alimetry) and autonomic physiological monitoring. The student's work may include participant recruitment and clinical data collection, data processing and analysis of gastric myoelectric and autonomic data, and/or statistical analysis of symptom outcomes. The student will gain hands-on experience in clinical research protocols, clinical neurostimulation, gastrointestinal electrophysiology, and translational research methods within a multidisciplinary team

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS080
Project title:	**Metabolism in COSMOS**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Prof. Max Petrov (Primary Supervisor) Yutong Liu
Contact details	m.petrov@auckland.ac.nz
Skills Needed	• Working in a clinical research team environment • Analysis of metabolism-related data • Preparation of a manuscript for publication in an international peer-reviewed journal

Project description

Fatty pancreas disorder is the most common pathology of the pancreas. There has been a fundamental shift in our understanding of the pathogenesis of fatty pancreas disorder over the past decade. The overall aim of this project is to provide deeper insights in relation to the metabolic pathways underlying fatty pancreas disorder. Depending on the learning goals of the successful candidate, the project will involve a quantitative analysis of the existing clinical and laboratory data or a meta-analysis of published studies. Either way, it is expected that results will be published in an international peer-reviewed journal. The project is part of the COSMOS (Clinical and epidemiOlogical inveStigations in Metabolism, nutritiOn, and pancreatitic diseaseS) programme. The programme offers a vibrant research environment, comprehensive research training, and clinical research experience.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS081
Project title:	**Eyes on the Brain: Eye Tracking in Neurological Disease**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Professor Dame Helen Danesh-Meyer (Primary Supervisor)
Contact details	h.daneshmeyer@auckland.ac.nz
Skills Needed	• Interest in neuroscience, ophthalmology, or brain health • Attention to detail and accuracy • Good communication and interpersonal skills • Ability to work independently and as part of a team • Basic computer and data entry skills • Organised and reliable • Willingness to learn new technology and research methods • Confidence interacting with research participants and clinical staff

Project description

This summer research project explores the use of advanced eye-tracking technology as an objective biomarker of neurological dysfunction. The eyes are closely linked to brain networks controlling movement, attention, cognition, and balance, meaning subtle abnormalities in eye movements may provide early indicators of neurological disease or injury. The project is part of ongoing research investigating portable high-frequency eye tracking for conditions such as concussion, dementia, multiple sclerosis, and other neurological disorders.

Students will work within a multidisciplinary clinical and research team and gain exposure to neuro-ophthalmology, neuroscience, and translational medical technology. The role may involve recruiting participants, collecting and analysing eye movement recordings, reviewing clinical data, assisting with development of normative databases, and contributing to scientific reports or publications. Depending on the student's interests and background, there may also be opportunities to work with data visualisation, artificial intelligence, or machine-learning approaches used in digital biomarker research.

This project provides hands-on experience in cutting-edge clinical research and offers insight into how emerging technologies may transform neurological diagnosis and monitoring. It is ideally suited to students interested in medicine, neuroscience, engineering, psychology, computer science, data science, or health technology innovation.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS082
Project title:	**Working while on methotrexate**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Rachel Murdoch (Primary Supervisor) Dr Chiara Gasteiger Professor Nicola Dalbeth
Contact details	rachel.murdoch@auckland.ac.nz
Skills Needed	• Verbal communication and interviewing skills • Active listening and open-ended questioning • Academic writing • Organisation and time management • Qualitative data analysis • Attention to detail and confidentiality

Project description

Methotrexate is commonly prescribed for inflammatory arthritis, including rheumatoid arthritis, due to its effectiveness in controlling disease activity. However, many patients experience side effects such as nausea and fatigue. These symptoms can affect a person's ability to engage in paid employment, influencing productivity, attendance, and overall work capacity. Despite its widespread use, the specific impact of methotrexate intolerance on employment remains poorly understood. Understanding these experiences may help inform clinical care and workplace support.

This project builds on a larger study of 200 patients with inflammatory arthritis that explored reasons for taking methotrexate.

The student researcher will conduct 10–20 semi-structured interviews with participants to examine how taking methotrexate affects their working and social lives in greater depth. This may include challenges related to maintaining employment and productivity, balancing disease control and side effects and navigating employer expectations, flexibility, and available support. The project will also explore how individuals adapt their work practices or make decisions about employment in response to treatment-related side effects.

The student will transcribe and analyse interview data using thematic qualitative methods to identify key employment-related themes. The student will also assist in drafting a manuscript for publication and contribute to dissemination of findings.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS083
Project title:	**Developing and testing an AI-driven digital support for family carers of people with dementia**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Sarah Cullum (Primary Supervisor) Gary Cheung Jing Sun
Contact details	sarah.cullum@auckland.ac.nz
Skills Needed	• Comfortable working with older people and family carers, some may require IT support • An interest in AI for healthcare • An interest in LLM agent development techniques is desirable but not essential

Project description

This project will extend an existing AI-powered digital resource management prototype designed to support family carers of people with dementia. The majority of people with dementia are living in their own homes, supported by whānau, particularly in Māori, Pacific and Asian communities. Family carers provide most of the care with little training or support: our tool will provide much-needed assistance. The extended platform will help users access and tailor dementia care resources, including managing changed behaviours and self-care materials. By integrating dementia-specific knowledge, conversational AI, adaptive personalisation, and secure data management, the system will deliver timely, relevant, and user-centred support.

The student will help obtain user feedback on the tool as it is developed which will support its iterative development. They will also help develop and test strategies to assess the system's reliability, accuracy, safety, robustness, and quality of responses across different user scenarios. In addition, an ethical evaluation will be conducted to examine privacy, transparency, fairness, accessibility, and responsible use, ensuring that the platform is trustworthy and appropriate for dementia care contexts.

The student will liaise with family carers either in person or online, supported by project manager Tara Sani who has experience in supervising students in this area.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS084
Project title:	**International, prospective, multi-centre study on patient reported outcome measures in children with inherited retinal disorders**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Sarah Hull (Primary Supervisor) Andrea Vincent
Contact details	sarah.hull@auckland.ac.nz
Skills Needed	• Good communicator with children and parents • Organised • Experience with REDCap online research data capture tool preferable but not essential

Project description

Inherited retinal disorders (IRDs) cause irreversible visual impairment due to progressive degeneration of rod and cone photoreceptors in the retina. This impacts the daily functioning and quality of life (QoL) of patients, which may not be captured by standard clinical tests. Patient-reported outcome measures (PROMs) are questionnaires used to assess outcomes such as QoL, and such measures have not yet been validated in children. Obtaining natural history information on the PROMs for IRD will be critical in evaluating the benefits of novel treatments on the patient QOL. As the development of novel therapies for IRD is rapidly evolving, there is an urgency to identify reliable, reproducible PROMs validated for our patient population.

We are taking part in a prospective, non-interventional, international multi-centre study of PROMs in children (ethics already in place). As part of this, the summer student would be instrumental in recruiting patients, conducting the questionnaires with children and their parents/caregivers, and accurately documenting and recording the data for the study centre in Toronto. This summer studentship would give invaluable hands-on experience in how a research study is designed and conducted with close supervision and support.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS085
Project title:	**Novel targets for the treatment of faecal incontinence**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Wal Baraza (Primary Supervisor) Jonathan Hew, Consultant Surgeon, Tweed, Australia
Contact details	wal.baraza@auckland.ac.nz
Skills Needed	• Organisational skills • Good communication skills and empathy • Basic statistical knowledge

Project description

We are conducting a novel study looking at the relationship between visceral sensitivity and faecal incontinence in women. Preliminary data suggest that visceral sensitivity has a significant association with faecal incontinence and obstructed defaecation. We are looking for a suitable student to help us determine whether sacral neuromodulation, as a treatment modality, has a beneficial effect on visceral sensitivity.

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS086
Project title:	**Women in diving**
Discipline:	Clinical - School of Medicine
Supervisor(s)	Xavier Vrijdag (Primary Supervisor) Hanna van Waart Reja Schaaf
Contact details	x.vrijdag@auckland.ac.nz
Skills Needed	• Curiosity for diving and female specific issues • Critical appraisal of the literature • RedCap questionnaire drafting (can be learned during the project)

Project description

Women are underrepresented in most forms of research. Scuba diving is a historically male-dominated industry, with much of the research focussing on and undertaken with males. This summer research project focusses solely on female scuba divers. We aim to identify gaps in our knowledge and potential challenges and needs specific to women in diving.

The work

You will make an online questionnaire in RedCap, which will subsequently be disseminated among female divers in the wider international diving community. This questionnaire will help identify specific research questions and queries women in the diving community may hold. You will both quantitatively (SPSS) and qualitatively analyse these results and synthesize these insights with the current knowledge about women in diving in the literature.

Output and impact

The output will be structured in the form of a scientific paper, with an overview of the literature, methods, results and discussion for future research. This research project will serve as a starting point identifying questions relevant for and identified by female divers.

Skills learnt

- How to set up and conduct a research project
- Teamwork and research coordination skills
- Use of scientific software like RedCap and SPSS
- Oral presentation and scientific writing skills

Faculty of Medical and Health Sciences
Summer Research Scholarships

2026/2027 Projects (Clinical)

Project code:	MHS087
Project title:	**"Counting the beat" A scoping review of the neuroscientific basis of music's effects on tinnitus.**
Discipline:	Clinical - School of Population Health
Supervisor(s)	Grant D Searchfield (Primary Supervisor) Luc Vitk
Contact details	g.searchfield@auckland.ac.nz
Skills Needed	• Fundamental understanding of sensory neuroscience and knowledge of electrophysiology. Some background knowledge of music would be beneficial. Familiarity with database searching for scientific articles (e.g google scholar, pubmed, scopus.

Project description

This project explores the neuroscientific basis of how music may benefit individuals with tinnitus. Tinnitus is linked not only to auditory pathways but also to brain networks involved in attention, emotion, and memory. Music-based interventions are increasingly used in tinnitus management, yet the underlying neural mechanisms remain unclear. The student will conduct a scoping review of existing research examining how music influences brain activity and tinnitus-related outcomes. This includes identifying key theories (e.g., neural plasticity, auditory-limbic interactions), summarising neuroimaging and behavioural findings, and mapping how music-based approaches (e.g., sound therapy, music training, tailored listening programs) affect tinnitus perception and distress.
Over the 10-week (≈400-hour) scholarship, the student will:
Search and screen relevant scientific literature
Extract and synthesise key findings
Identify gaps in current knowledge
Contribute to developing a conceptual framework linking music, brain processes, and tinnitus outcomes
The project is suitable for students interested in neuroscience, psychology, audiology, or music science. Outcomes may include a literature review report and groundwork for future research publications. Students will gain experience in evidence synthesis, critical thinking, and interdisciplinary research, while contributing to improved understanding of non-invasive treatments for tinnitus.