



UNIVERSITY *of*
TASMANIA

MENZIES 
Institute for Medical Research

PhD projects

Menzies is always open for highly motivated individuals thinking of pursuing a career in medical research. The following PhD projects are available by application. Please contact the supervisor to inquire or apply.

Key to Theme acronyms:

PHPC = Public Health and Primary Care

CM = Cardio-Metabolic Health and Diseases

Neuro = Neurodegenerative Diseases/Brain Injury

CGI = Cancer, Genetics and Immunology

MSK = Musculoskeletal Health and Diseases

Theme	Supervisor	Title	Goal	Student background
PHPC	Prof Alison Venn alison.venn@utas.edu.au	Cardio-metabolic risk trajectories from childhood to midlife	Modifiable risk factors account for much of the burden of cardiovascular disease and type 2 diabetes (cardio-metabolic disease) and are very common in young Australians. Using data from the Childhood Determinants of Adult Health study, this project will define the trajectories of adiposity (body mass index and waist circumference) and physical fitness from childhood to adulthood that most strongly determine markers of cardio-metabolic	Health sciences

			disease in midlife, and ascertain the factors that predict and modify them.	
PHPC	Dr Amanda Neil Amanda.Neil@utas.edu.au	Assessment of the relationship between costs and functionality and quality of life in people with psychosis using the Study of High impact of Psychosis (SHIP) Costs Database.	A data analysis project with a strong health economics focus that will seek to establish the predictors of the costs of psychosis using a pre-existing data source; the Study of High Impact Psychosis (SHIP) Costs Database.	Health economics and/or psychiatry or psychology and/or biostatistics
PHPC	Dr Amanda Neil Amanda.Neil@utas.edu.au	Acute emergency care and other emergency care of current and prior clients of public sector specialized mental health services in Tasmania, by region, 2008-2014.	An epidemiological data linkage project that will aim to: 1)Assess the underlying cause of presentation for all acute emergency care, by region, care status and utilization of the MHHL in patients that are current or prior clients of public specialized mental health services in Tasmania 2)Assess the comparative importance of the Mental Health Helpline (MHHL) as a “gatekeeper” in the care pathway for emergency care in Tasmania, including, the proportion of people, by care status (open community episode; discharged community client; new client), using the MHHL prior to: a. Assessment by a Community Assessment Team (CAT) b. Presentation at an Emergency Department. c. Admission to hospital. 3) Assess the proportion of patients admitted to inpatient care from emergency departments; and waiting times until admission. 4) Assess the levels of representation and	Student background: health economics and/or psychiatry or psychology and/or biostatistics

			readmissions within 28 days, relative to care status and regionality, and discharge source.	
PHPC	Dr Amanda Neil Amanda.Neil@utas.edu.au	Assessment of the relationship between costs and functionality and quality of life in people with psychosis	Data analysis project with a strong health economics focus that will seek to establish the predictors of the costs of psychosis using a pre-existing data source	Health economics and/or psychiatry or psychology and/or biostatistics
PHPC	Prof Tania Winzenberg tania.winzenberg@utas.edu.au	Co-ordination of care for complex patients in primary care settings: what works for whom and why?	This project will entail a series of complex systematic reviews of the extensive controlled trial literature of different models of care co-ordination delivered for a range of conditions to people with complex medical needs. These in turn will inform a mixed method study examining current care co-ordination practices in Australian general practices from by a range of health professionals. The goal is to provide detailed evidence based advice on how to improve care co-ordination in Australian primary care settings.	Strong understanding of the Australian health system and in particular general practice, together with some experience in reading, critically appraising and interpreting scientific literature.
PHPC	Environment and Health Research Group Fay.Johnston@utas.edu.au or Amanda.Wheeler@utas.edu.au	Hazelwood Exposure Study	The Hazelwood Mine Fire Health Study is a research program that will investigate whether the smoke emissions from the 2014 Hazelwood coal mine fire has affected the health of local residents. To assess the exposures of infants and young children, parents are being asked to complete an extensive questionnaire on their home characteristics and activities during the fire as well as to submit samples of residential house dust and soil from their gardens. These samples can then be analysed for a suite of chemical markers to understand background and fire smoke exposures in the home. Recruitment is underway and will result in large, high quality datasets and samples that will inform understanding of exposures to emissions from such disasters. There is currently limited understanding	This work is highly suitable for somebody with a background in environmental health, chemistry, exposure assessment or medicine. An aptitude for biostatistics and chemistry is essential.

			<p>of exposures from such events and findings will be used to develop public health practices. There is also the opportunity to apply findings to follow up analyses of health through the child respiratory and cardiovascular measures and through data linkage.</p>	
PHPC	<p>Environment and Health Research Group Fay.Johnston@utas.edu.au or Amanda.Wheeler@utas.edu.au</p>	AirRater	<p>AirRater is a Tasmania-wide air sensing project to monitor the key causes of environmental ill health in Tasmania - smoke particles, pollen and heat. It will do this by developing systems to provide timely alerts to key agencies (such as the Department of Health and Human Services), and to individuals who have health conditions such as asthma or allergies that can be affected by environmental conditions.</p> <p>The study has developed a smartphone app for individuals to use to track their symptoms and locations. Increased levels of air pollution (in the form of pollen and smoke particles) is a known trigger for respiratory symptoms, including hay fever and asthma symptoms. Severe air pollution and heat events have previously been linked to increases in ambulance call outs, hospital admissions and mortality. These data, in combination with the monitoring network, will be used to generate high quality data that can be used to evaluate the effectiveness of the monitoring network to spatially resolve exposures and health. Plans are to develop a suitable national monitoring network.</p> <p>The goal is to evaluate the major environmental drivers of adverse health outcomes and to evaluate the clinical and public health utility of the system.</p>	<p>This work is highly suitable for somebody with a background in environmental health, public health, GIS, epidemiology, medicine and exposure assessment. An understanding of epidemiology and statistics is beneficial.</p>
PHPC	<p>Dr Fay Johnston fay.johnston</p>	Understanding population level impacts	<p>This project is part of an ARC Linkage Project. Our team of collaborators from Canada, Victoria and NSW has specific expertise in fire ecology, fire</p>	<p>Particularly appropriate for a student familiar with R</p>

	u@utas.edu.au	of landscape fire smoke	smoke modelling, epidemiology, land management, environment protection and public health practice. We will use regulatory air quality monitoring, mobile smoke monitoring, remote sensing and atmospheric modelling, to determine how different types of landscape fire regimes affect community exposures to smoke. The aim is to understand if more people will be subject to unacceptable exposures of smoke pollution from occasional bushfires, or from a program of regular planned burns. We will use spatial datasets of ambulance and emergency calls to map how the intensity and duration of smoke exposure influences important health outcomes and which population groups are at greatest risk. New practical approaches to determining smoke exposures for public health management will be developed and evaluated.	including spatial analysis in R or ARC GIS.
PHPC	Professor Wendy Oddy	Infant feeding and long-term outcomes.	A large body of literature suggests that early infant feeding has long-term impacts on adult health outcomes. Using data from the West Australian Pregnancy Cohort Study followed from before birth to now 26 years. In this project the candidate will examine the impact of early infant feeding (breastfeeding, formula feeding) on long-term cardio-metabolic outcomes including anthropometry data collected throughout childhood, adolescence and into young adulthood.	
PHPC	Professor Matthew Jose & Dr Charlotte McKercher mailto:matthew.jose@utas.edu.au ; Charlotte.McKercher@utas.edu.au	The psychosocial determinants of treatment pathways, clinical outcomes and costs in adults with chronic kidney disease (CKD)	Utilising a range of individual level, registry and administrative health data this prospective cohort study will evaluate the relative influence of both biomedical and psychosocial factors on the rate of kidney disease progression, the choice of treatment pathways, hospitalisation, mortality, health-related quality of life and economic outcomes in adults living with CKD. A number of projects are available with specific focus depending on research interests.	Psychiatry, psychology or other allied health and/or epidemiology and/or public health and/or health economics. An aptitude for biostatistics is essential.
PHPC	Professor	Omega 3 fatty	We have previously shown pathways to	

	Wendy Oddy	acids and inflammation.	inflammation through nutrition. In this project, the candidate will examine the role of fatty acids that potentially leads to a suite of inflammatory markers such as hs-CRP, cytokine biomarkers and leptin. The range of dietary intake of omega 3 and 6 fatty acids collected at 3 time-points (ages 14, 17 and 20 years), as well as erythrocyte fatty acids collected at these same time-points will be applied in this project. Data collected within the West Australian Pregnancy Cohort Study are available for these analyses. Other studies based at the Menzies Institute for Medical Research may be used to answer some of the research questions.	
PHPC	Professor Wendy Oddy	Nutritional pathways to adiposity, inflammation and depression.	Any other topic related to dietary intake or nutritional influence on health and disease.	
PHPC	Professor Bruce Taylor Bruce.Taylor@utas.edu.au	Genetic and environmental factors involved in the onset and progression of MS	To establish how known and novel MS risk factors are associated with the onset and progression of MS, and how these factors interact to increase risk	
PHPC	Professor Bruce Taylor Bruce.Taylor@utas.edu.au	The role of vitamin D, ultraviolet radiation and latitude in the progression of MS	To establish how these factors act in increasing the risk of MS and how they influence the progression of MS.	
PHPC	Dr Kylie Smith and Professor Alison Venn k.j.smith@utas.edu.au	Associations between lifestyle behaviours and serum metabolomic profiles	An opportunity exists to examine the childhood and young adult factors that associate with healthy and unhealthy metabolic profiles and novel biomarkers, using data from the Childhood Determinants of Adult Health study and other studies that began in childhood and have prospectively followed their cohort into adulthood (i3C consortium).	Epidemiology, bio-chemistry analytical background highly desirable. Clinical background would also be useful but not essential.

	alison.venn@utas.edu.au			
PHPC	Professor Andrew Palmer Andrew.palmer@utas.edu.au	Health Economics in Bariatric Surgery	<p>Major gaps exist in our knowledge of the long term impact of morbid obesity on quality of life and costs. We are currently collecting from a cohort of approximately 400 patients who enrol for bariatric surgery in Tasmania.</p> <p>Specific PhD tasks</p> <ol style="list-style-type: none"> 1. Analyze prospective costs collected using data linkage 2. Analyze the impact of bariatric surgery on quality of life 3. Compare sensitivity, concurrent and convergent validity of quality of life instruments in morbidly obese patients both pre-and post-bariatric surgery 4. Develop a health economics model of the long term consequences of bariatric surgery, quantifying impact on CVD and other important complication rates, life expectancy, quality-adjusted life expectancy, total lifetime costs, and incremental cost-effectiveness of bariatric surgery versus no surgery. 	Epidemiological/ Analytical background desirable. Clinical background would be suitable.
PHPC	Dr Ingrid van der Mei Ingrid.vanderMei@utas.edu.au	Examining early retirement in the Australian Multiple Sclerosis Longitudinal Study	Data analysis project that aims to examine which factors are associated with early retirement and change in employment status in people with Multiple Sclerosis, a chronic disabling disease.	Biochemistry, nutrition, biostatistics, health science, public health
PHPC	Dr Ingrid van der Mei Ingrid.vanderMei@utas.edu.au	Can diet reduce the progression of Multiple Sclerosis	Data analysis project which aims to examine which dietary factors are associated with the progression of Multiple Sclerosis using factor analysis	Health economics and/or statistics and/or epidemiology
PHPC	Dr Ingrid van der Mei	Comorbidities	Data analysis projects available around	Epidemiology and Statistics

	Ingrid.vanderMei@utas.edu.au	in Multiple Sclerosis	comorbidities and MS (e.g. influence on disability, quality of life, and burden of disease) using different high quality datasets.	
PHPC	Dr Ingrid van der Mei Ingrid.vanderMei@utas.edu.au	Developing a Cognitive Behavioural Intervention for people with MS in the workforce: The MS WorkSmart Program	Assist with the development of this intervention, analyse different sets of data and create publications.	Epidemiology and Statistics
				Skills in epidemiology and statistics or related.
PHPC	Dr Seana Gall seana.gall@utas.edu.au	Alcohol consumption across the life course: the Childhood Determinants of Adult Health study	1. Identify childhood (physical, behavioural, environmental) factors that predict adult alcohol consumption (including changes over time and alcohol use disorders) 2. Examine the relationship between alcohol consumption, including types of alcohol, and cardiometabolic health of young adults (blood pressure and biochemistry, atherosclerosis) to establish whether beneficial effects do exist.	Psychology or related, some expertise in analysis of qualitative and quantitative data.
PHPC	Professor Peter Dargaville Tanya.OByrne@utas.edu.au	Minimally-invasive surfactant therapy in preterm infants on CPAP	Studies are based at MCRI in Melbourne, and would depend on NHMRC funding	
PHPC	Peter Dargaville Tanya.OByrne@utas.edu.au	Studies of non-invasive respiratory support in the preterm lamb model of the		Health science, medicine, public health, biostatistics

		preterm infant		
PHPC	Assoc Prof Leigh Blizzard	Assessment of goodness-of-fit of binary and multinomial regression models	The proposed research builds on an established research program in a continuing collaboration with a noted international authority in the field to extend summary measures of goodness-of-fit developed for logistic regression models to binary and multinomial log-link models. Future work is to develop statistical approaches and testing strategies to detect lack of fit at the level of individual observations.	
PHPC	Assoc Prof Leigh Blizzard	Chronic disease benchmarking in Tasmania	The first phase of the proposed work involves the use of hospital separation and clinical costing data to estimate, and monitor trends in, the prevalence of hospital-treated chronic disease (HTCD) in Tasmania. The second phase involves estimation of within-hospital resource use by HTCD patients with an eventual goal of determining levels and costs of avoidable hospitalisations and complications and developing methodology to monitor trends and evaluate interventions.	
PHPC	Assoc Prof Leigh Blizzard	Power calculations and sample size determination	An important component of the design of a project is the determination of the appropriate number of subjects to be included in the study. A number of simple approaches exist, and there are a plethora of websites that provide free or subscription-based calculators. Even for essentially the same design, the estimation method differs according to the test statistic proposed and the distributional assumptions made. Additionally, there are a surprising number of applications for which no simple approach is available. One example is linear regression. Sophisticated data simulations with existing or artificial data may be required in those circumstances. The proposed work will compare the performance of alternative estimation methods and provide published resources and web-based calculators in respect of applications in which existing approaches are deficient or lacking.	

PHPC	Assoc Prof Leigh Blizzard	Analysis of missing data	<p>Statistical analyses with missing data raise issues of great importance. Many techniques have already been developed, and many more will be forthcoming, to handle missing data. Understanding these techniques, and developing new ones where existing approaches are too limited or circumscribed to be reliable, is of great importance to researchers at the Menzies Institute for Medical Research. One of the major research platforms at the Institute is the Childhood Determinants of Adult Disease (CDAH) cohort. The eligible subjects for this cohort are the 8,484 participants in the Australian Schools Health and Fitness Survey of 1985. Some of them have participated in follows-up during 2004–06 (CDAH1) and 2009-10 (CDAH2), and we are seeking funding for a third follow-up commencing in 2016 (CDAH3). There are substantial numbers of eligible subjects who have not participated at one or more of the follows-up or will not participate at the next follow-up. Making best use of the data collected from participants requires assessment of missing data mechanisms and determination of the best ways of handling the missing data.</p>	
PHPC	Assoc Prof Leigh Blizzard	Analysis of physical activity data	<p>In many applications, analysts are confronted with data that are mal-distributed or implausible. In measurement of physical activity by self-report, for example, the data are typically zero-inflated and right-skewed and some respondents will have reported an implausibly large number of hours of activity. Similar problems arise in the measurement by self-report of diet, cigarette smoking and alcohol consumption. A variety of ad hoc approaches have been used (for example, by truncating total hours of physical activity per day to a maximum of 16 hours). These ad hoc methods are rarely tested in any systematic manner. Primarily using physical activity data from a variety of sources, the proposed work will assess the sensitivity of</p>	

			estimates to the particular assumptions made in data handling and analysis.	
PHPC	Dr Verity Cleland verity.cleland@utas.edu.au	Physical activity, sedentary behaviour and obesity epidemiology	There are a number of opportunities to work across a range of projects in relation to physical activity, sedentary behaviour and weight/obesity across the lifecourse. Particular areas of interest include women, children, socioeconomic and geographic (urban-rural) differences in behaviour, environments supportive of healthy behaviours, and active transport. Within a behavioural epidemiologic framework, this program of work aims to establish the links between behaviour and health, ensure appropriate and accurate measurement of behaviour and health outcomes, identify the factors that influence behaviour, develop and evaluate strategies to change behaviour, and translate findings into practice and policy. Projects may be quantitative or qualitative in nature, and students may be involved in analysing existing data and/or collecting new data. Students will be able to apply principles of epidemiology and public health, will become proficient in analysing data using appropriate software packages, and will gain experience in academic writing.	
CM	Dr Seana Gall seana.gall@utas.edu.au	Socio economic determinants of cardiometabolic health	aSAH is associated with very poor outcomes. Access to early medical and surgical care may improve outcomes but the level of access to rapid care is unknown in Australia. The aims of the study are to understand the length of delays in presentation and treatment for aSAH, as well as the patient-level and system-level factors that influence delays. This project involves both a quantitative and qualitative components. The quantitative part of the study involves the collection of data on delays in presentation and management for a retrospective cohort of people with aSAH in Tasmania using medical records, along with collection of data from the ambulance service on transport and management. The qualitative part of	Medical, allied health, nursing, public health, social sciences.

			the study involves semi-structured, in depth interviews with people that suffer aSAH, along with their family, treating doctors and ambulance officers. The objective is to understand, from different perspectives, what might contribute to delays in seeking or receiving care following an aSAH.	
CM	Dr Seana Gall	Sex differences in stroke incidence, management and outcomes		Medical, allied health, nursing, public health, social sciences.
CM	Dr Seana Gall	Understanding delays in the presentation and treatment of aneurysmal subarachnoid haemorrhage (aSAH)		Medical, allied health, nursing, public health, social sciences.
CM	Prof James Sharman James.Sharman@utas.edu.au	Clinical and health economic usefulness of automated in-clinic blood pressure	A series of studies in patients having blood pressure assessed in general practice, as well as a specialist blood pressure clinic, to determine: 1) Feasibility and clinical usefulness of automated in-clinic blood pressure measurement. 2) Patient outcomes using this different model of care. 3) Cost effectiveness of this model of care in comparison to conventional medical approaches.	Physiology or Medicine
CM	Dr Martin Schultz (martin.schultz@utas.edu.au) & Associate Professor James Sharman	Exercise Physiology in the Identification and Control of high Blood Pressure: the EPIC BP study.	An exaggerated exercise blood pressure (EEBP) response to submaximal exercise independently predicts cardiovascular (CV) events and mortality, incident hypertension, and reveals BP abnormalities that are otherwise not detectable via standard screening methods at rest (i.e. masked hypertension). Thousands of individuals are referred for exercise physiologist (EP) services each year, who routinely undertake submaximal exercise testing with BP measurement a mandatory component. Whether BP readings taken during EP led exercise testing can aid in the	Completed a Bachelor Degree (preferably in exercise science/physiology) with First Class Honours or equivalent degree; or equivalent industry/research experience. - A flexible and team-oriented approach

			<p>identification of those at increased CV risk related to EEBP is unknown. Furthermore, it is unknown whether targeted EP exercise intervention can reduce the CV risk associated with EEBP. Thus, the broad aims of the EPIC BP study program are to 1) identify those with EEBP at the time of referral to EP services in the community, as well as to determine the effect (and optimisation) of EP intervention on BP control and other hypertension-related markers of CV risk by randomized clinical trial in the EP community sector.</p> <p>This program of research holds excellent potential to influence patient care whilst exploring fundamental cardiovascular physiology in a world-class clinical research setting. The project will comprise part of an existing research program built around determining the clinical relevance of EEBP. Participation will involve data collection in the Menzies BP clinic, and community, in addition to analysis of existing human physiological data to understand the prevalence and CV risk associated with EEBP.</p> <p>The successful applicant will publish research findings and disseminate results at national and international scientific forums. Collaborative research and travel opportunities may also be available.</p> <p>It is the intention that this position will start in January 2017, or negotiated with applicants.</p>	
Neuro	<p>Assoc Prof Tracey Dickson</p> <p>Tracey.Dickson@utas.edu.au</p>	<p>Inhibitory Regulation Of Motor Neurons: A New Target Mechanism For Motor Neuron Disease</p>	<p>Amyotrophic lateral sclerosis (ALS) is the most common phenotype of motor neuron disease, and is a devastating neurodegenerative disease for which there is no effective treatment or cure. It involves the progressive loss of movement due to the dysfunction and loss of motor neurons, which universally results in paralysis and death, due to respiratory failure. ALS has a median survival of only three years from symptom onset, with only 4% of people living longer than ten years. There is new clinical, histological and electrophysiological evidence from our research team and others</p>	<p>Neuroscience, basic laboratory science, tissue histology, primary culture</p>

			<p>indicating that reduced inhibitory neuronal influences may be at the root of the disturbed glutamatergic transmission occurring in ALS. Through a combination of human and transgenic pathological investigations, performed in parallel with novel targeted in vitro experimental models we will address the novel hypothesis: 'Interneuron pathogenesis is a central mechanism of ALS'</p>	
Neuro	<p>Assoc Prof Tracey Dickson</p> <p>Tracey.Dickson@utas.edu.au</p>	<p>Microfluidic Technology To Help Understand Physical Damage To Brain Cells</p>	<p>Understanding the organisation, structure and cellular mechanisms that underpin the complexity of the human brain remains one of the biggest challenges of science - in particular, the jump from understanding the workings of an individual cell to how groups of these cells interact to make up a functioning system. In this proposal we will develop microfluidic technology to allow us to understand changes in brain function at the levels of the cell and the circuit in response to a physical stretch injury. This will serve as a model for traumatic brain injury (TBI) – traumatic damage to the brain that occurs in response to an external force, such as in falls, accidents, violence and sport.</p> <p>The specific aims of the proposal are to:</p> <p>i) construct directional neuronal networks with molecularly defined populations of primary neurons and glia, physically stretch discrete areas of the network and monitor changes using live imaging; and ii) construct a stretchable microelectrode array to evaluate changes in electrophysiology throughout the network after the physical stretches.</p>	<p>Neuroscience, basic laboratory science, primary culture</p> <p>This is an interdisciplinary project combining basic neuroscience with microfabrication and analytical chemistry.</p>
Neuro	<p>Dr Kaylene Young</p> <p>Kaylene.young@utas.edu.au</p>	<p>Understanding the role of protocadherins in regulating brain function and tumour formation</p>		

Neuro	Dr Kaylene Young Kaylene.young@utas.edu.au	What is the role of calcium in activity-dependent myelination?		
Neuro	Dr Kaylene Young Kaylene.young@utas.edu.au	Using transcranial magnetic stimulation to direct myelin repair in multiple sclerosis		
Neuro	Dr Kaylene Young Kaylene.young@utas.edu.au	Using rare genetic mutations to uncover novel therapeutic targets for multiple sclerosis		
Neuro	Dr Kaylene Young Kaylene.young@utas.edu.au	Genome editing and induced pluripotent stem cells - how can we model multiple sclerosis?		
Neuro	Dr Owen Marshall (owen.marshall@utas.edu.au)	Investigating epigenetic changes during Alzheimer's Disease progression	Neurodegenerative diseases have a major impact upon society, with dementia being the third leading cause of death in Australia. Although there are many different causes of dementia, epigenetic changes in the chromatin of neurons have recently been implicated in the progression of a number of neurodegenerative diseases, including Alzheimer's Disease. We have developed a powerful new technique for profiling genome-wide chromatin changes in the brain, using the fruit fly as a model organism. We will apply this technique to specific populations of neurons at both early and late stages of disease progression. The epigenetic	

			<p>changes we observe will help identify candidate genes and chromatin factors that play a role in Alzheimer's Disease.</p>	
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CGI	<p>Assoc Prof Joanne Dickinson Jo.Dickinson@utas.edu.au A/Prof Kathryn Burdon kathryn.burdon@utas.edu.au Dr Jac Charlesworth jac.charlesworth@utas.edu.au Dr Liesel Fitzgerald liesel.fitzgerald@utas.edu.au Dr Rebekah McWhirter</p>	<p>Elucidation of the genetic and epigenetic drivers of complex disease using established familial and/or case control human genetic resources</p>	<p>To identify key contributors to complex disease risk and disease progression through the study of large families with a dense aggregation of disease and/or case/control genetic resources ascertained on the disease of interest.*</p> <p>*This is a general overview of a range of projects available in complex diseases including cancer and eye disease.</p>	<p>Molecular biological techniques, cell biology and biostatistical/bioinformatic expertise</p>
CGI	<p>Prof Heinrich Korner Heinrich.Korner@utas.edu.au</p>	<p>TNF in alternative versus inflammatory activation; A comparison between mouse and human macrophages in inflammatory models</p>	<p>TNF has a central, non-redundant role in macrophage differentiation and in the perpetuation of the host-protective inflammatory phenotype. Our results demonstrate that the proinflammatory TNF-TNFR1 signalling pathway directs the differentiation of monocytes towards inflammatory macrophages (M1) by repressing the development of alternatively activated (M2) macrophages. Failure to suppress the alternative pathway results in the co-expression of the M2 enzyme Arg1 and the M1-associated enzyme inducible or type 2 nitric oxide (NO) synthase (iNOS or NOS2). The enzymes are metabolic competitors. To explore the breadth of this new concept it needs to be investigated if TLR activation can overrule the role of TNF and if human macrophages respond in a comparable way when TNF is blocked.</p>	
CGI	<p>Prof Heinrich Korner</p>	<p>Do MS-associated genetic</p>	<p>To bring genetic polymorphisms and biological phenotype into a context.</p>	<p>Immunology, biostatistics</p>

	Heinrich.Korner@utas.edu.au	changes in Vitamin D metabolism affect the function of T cells		
CGI	Prof Woods G.M.Woods@utas.edu.au	Development of monoclonal antibodies to understand the phenotype and function of the immune response to DFTD*	The goal of this project is to produce monoclonal antibodies against key antigens to study the phenotype and function of devil immune cells.	
CGI	Prof Greg Woods G.M.Woods@utas.edu.au	Analysis of factors produced by DFTD* cancer cells that could influence the immune response	<p>The goal of this project is to understand more of the DFTD cancer cells to determine if they express factors that suppress the immune response or inhibit lymphocyte migration, preventing lymphocytes from entering the tumour.</p> <p>*Devil facial tumour disease (DFTD) is a unique cancer because it is contagious. The cancer cells are transmitted between devils when they bite. It is killing Tasmanian devils and could cause their extinction. There is something special about the tumour cells that prevent the immune system from responding to the DFTD cancer cells. A limitation to studying devil facial tumour disease is a shortage of biological reagents, such as monoclonal antibodies.</p>	Immunology, cancer biology, molecular genetics, protein biology
MSK	Prof Graeme Jones G.Jones@utas.edu.au	Tbone study-bone development in children from birth to age 25 years		Medicine, epidemiology/biostatistics, and/or public health
MSK	Prof Graeme	TASOAC		Medicine,

	<p>Jones</p> <p>G.Jones@utas.edu.au</p>	<p>study 10 year study of osteoarthritis , osteoporosis, falls, vitamin D and bone architecture</p>		<p>epidemiology/biostatistics, and/or public health</p>
MSK	<p>Prof Changhai Ding</p> <p>changhai.ding@utas.edu.au</p>	<p>Synovitis, inflammatory makers and knee osteoarthritic changes over 10 years</p>	<p>This project, based on 2 established cohort study with 10 years' follow-up, will examine the associations between MRI-detected effusion-synovitis, Hoffa's synovitis, serum levels of hs-CRP, IL-6, TNF-alpha, knee structural changes including cartilage defects, bone marrow lesions, cartilage loss, and knee symptoms over 10 years.</p>	<p>Medicine, epidemiology, biostatistics, or public health</p>