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| PHPC | Neil | Sanderson | 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 | Sanderson | Neil, Oldenburg (Melbourne U) | Mood disruption following myocardial infarction: cost-effective strategies for identification and management | ADVENT is a prospective cohort study investigating the interplay between psychosocial and biological factors relevant to symptoms of depression and anxiety in post-myocardial infarction patients at 12- and 24-months. Aims of this PhD project are to examine:1) Efficacy and cost-effectiveness of methods for screening and diagnosis of mental health disorders in post-MI populations2) Patterns of mental health symptoms in post-MI populations3) Association of particular patterns of mental health symptoms with employment outcomes and quality of life. | Psychiatry, psychology or other allied health, epidemiology, public health |
| PHPC | Sanderson | Neil | The impact of mental health promotion initiatives on suicide and deliberate self-harm in Tasmania | This data linkage project will investigate the impact of mental health promotion initiatives on suicide and deliberate self-harm. It will bring together health service and community organisation data to inform mental health planning in Tasmania. | Psychiatry, psychology or other allied health, epidemiology, public health |
| PHPC | Turner | Simpson | Tasmanian Gynaecological & Anal Neoplasia Study | Evaluate distribution and predictors of anal cancer and anal carriage of oncogenic HPV types among women with a history of an HPV-mediated gynaecological neoplasia | Medicine, epidemiology/biostatistics, and/or public health |
| PHPC | Turner | Simpson | Tasmanian Gynaecological & Anal Neoplasia Study | Evaluate distribution and predictors of anal cancer and anal carriage of oncogenic HPV types among HIV+ living in Tasmania | Medicine, epidemiology/biostatistics, and/or public health |
| PHPC | Turner | Simpson | RUSSL-2 | Evaluate distribution and predictors of sexual literacy and sexual attitudes among students at the University of Tasmania | Medicine, epidemiology/biostatistics, and/or public health |
| PHPC | Cleland | Gall, Smith, Magnussen, Venn, Sanderson | Associations between health behaviour trajectories from childhood and adolescence into adulthood and cardiometabolic health outcomes  | Data analysis project drawing on CDAH and i3c data | Psychology, health sciences/promotion, exercise science, nutrition, public health, applied science, biostatistics |
| PHPC | Cleland | Gall, Smith, Magnussen, Venn, Sanderson | Weight trajectories, childbearing and mental health  | Data analysis project drawing on CDAH and Victorian Adolescent Health Cohort Study | Psychology, health sciences/promotion, exercise science, nutrition, public health, applied science, biostatistics |
| PHPC | Jose | McKercher | Psychosocial and behavioural interventions for people with chronic kidney disease (CKD) | Clinical trial to evaluate the efficacy of exercise and psycho-educational interventions as an adjunct to conventional medical management in people with CKD | Epidemiology and/or psychiatry or psychology and/or biostatistics |
| PHPC | Nelson | Zoungas | *Establishing symptom associations with the use of statins in the elderly.* | STAREE is a placebo controlled randomised clinical trial based in Australian general practice to examine the net effects (risks and benefits) of low-dose statin therapy (40mg atorvastatin) in apparently healthy elderly individuals free of established vascular disease, both of which impose a major and increasing health burden. It will also assess the efficacy of statin therapy in the prevention of need for institutional care and other conditions of the elderly such as diabetes, cognitive decline, cancer and hospitalisation. Statin therapy has been shown to reduce the risk of vascular events in those with manifest atherosclerotic disease or at high risk of vascular events. However the elderly have a high burden of morbidity and therefore symptoms that they often relate to drugs such as statins. This has implications for adherence to therapy and possible benefits. We have 2 opportunities to investigate the phenomenon. Firstly in those who come in through the drug withdrawal arm prior to randomisation and thence subsequent to randomisation. | Medicine, epidemiology/biostatistics, and/or public health |
| PHPC | Nelson |  | *SHOPPE (Systematising Home blOod Pressure in PracticE)* | Too often guidelines/consensus statements languish rather than influence clinical practice. We wish to conduct a pragmatic evaluation trial using a cluster randomised controlled study design to establish a method for the effective and efficient uptake of the NHFA/HBPRCA consensus statement on home blood pressure (HBP) into clinical practice that is generalisable to other practice guidelines directed at primary care. Measurement of blood pressure (BP) by a doctor in the clinic has limitations that may result in an unrepresentative measure of underlying BP and this may have consequences for appropriate diagnosis and management of high BP. HBP is the self-measurement of BP (usually in the morning and evening) over a defined period (e.g. 7 days) under the direction of a health care provider. HBP is often ad hoc in routine practice and therefore unreliable to guide management. When done systematically HBP has good reproducibility, is well tolerated, relatively inexpensive and is superior to clinic BP for prognosis of cardiovascular events and mortality. HBP can be used in combination with clinic BP to identify different forms of hypertension (‘white coat’ and ‘masked’). Another advantage of HBP is that patients are engaged with their BP management, resulting in increased adherence to therapy and lower achieved BP levels. We will conduct a cluster randomised controlled trial of an implementation strategy to embed systematic collection of HBP for clinical management of community treated high blood pressure. | Medicine, epidemiology/biostatistics, and/or public health |
| PHPC | Taylor | Van der Mei | 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 | Epidemiology, analytical background highly desirable. Clinical background would also be useful but not essential. |
| PHPC | Taylor | Van der MEI | 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. | Epidemiological/ Analytical background desirable. Clinical background would be suitable. |
| PHPC | Venn | Wills, Neil, Stokes | The epidemiology and costs of multiple primary cancers. | Using population –based data from the Tasmanian cancer registry to investigate: (1) trends in the diagnosis of multiple primary cancers in Tasmania; (2) the extent to which increased cancer survival times and advances in radiological imaging are contributing to any increase in incidence rates; (3) health system costs associated with multiple primary cancers | Epidemiology, biostatistics, oncology or radiography/radiology |
| PHPC | Venn | Otahal, Stokes | The epidemiology of non-melanoma skin cancer (NMSC) in Tasmania | Using data from the Tasmanian Cancer Registry to investigate trends in the incidence of NMSC and test new methods of automated data capture from pathology reports | Epidemiology, biostatistics, health information systems, dermatology or pathology |
| PHPC | Venn | Gall, Magnussen | Morbidity and mortality associated with cardiovascular disease and type 2 diabetes in the Childhood Determinants of Adult Health (CDAH) Study | To determine (1) whether self-reported CVD and diabetes in a cohort of young adults can be verified with medical records and health system administrative data; (2) the childhood predictors of CVD and type 2 diabetes in young adults. | Epidemiology, biostatistics, health information systems, cardiology, endocrinology |
| PHPC | Smith | Gall, Venn | Does childhood diet influence cardiometabolic health in adulthood? | Using data from the Childhood Determinants of Adult Health (CDAH) study, this novel project will provide important information on whether diet in childhood (aged 10-15 years) affects cardiometabolic health in young adulthood (aged 26-36 years), independently of adult diet.  | Nutrition, biostatistics, health science, public health |
| PHPC | Smith | Magnussen, Venn | 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 CDAH study and other studies that began in childhood and have prospectively followed their cohort into adulthood (i3C consortium). | Biochemistry, nutrition, biostatistics, health science, public health |
| PHPC | van der Mei | Taylor | 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. | Epidemiology and Statistics |
| PHPC | van der Mei | Taylor | 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 | Epidemiology and Statistics |
| PHPC | Gall | Venn | 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. | Health science, medicine, public health, biostatistics |
| PHPC | Blizzard | Wills, Hosmer | Assessment of goodness-of-fit of binary and multinominal 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 multinomial and ordinal logit-link models and binary, multinomial and ordinal log-link models. | Undergraduate training or a postgraduate qualification in statistics or quantitative methods |
| PHPC | Blizzard | TBC | 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. | Undergraduate training or a postgraduate qualification in statistics or quantitative methods |
| Health Economics | Neil | Sanderson, members of the SHIP study group. | 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 |
| Health Economics | Neil | Sanderson | 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 Tasmania2 )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: * 1. Assessment by a Community Assessment Team (CAT)
	2. Presentation at an Emergency Department.
	3. 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 readmissions within 28 days, relative to care status and regionality, and discharge source.  | Student background: health economics and/or psychiatry or psychology and/or biostatistics |
| PHPC | Palmer | Van de MeiTaylorSimpson | Health economics of Multiple Sclerosis in Australia | data analysis project of the Australian Multiple Sclerosis Longitudinal Study database updating the costs and quality of life impacts of increasing disability due to multiple sclorisis | health economics and/or clinical neuroscience and/or and/or public health |
| PHPC/Cardiometabolic | Gall | Magnussen | Social determinants of cardiometabolic health | This project will use data from two longitudinal cohort studies: the Childhood Determinants of Adult Health Study and the Tasmanian Infant Health Study. The project will examine the role of early life socioeconomic position (SEP) and social mobility on preclinical markers of cardiovascular health (e.g. carotid IMT; cardiac structure and function). The project will also consider what mediates or modifies the effect of low SEP on these outcomes including health behaviours. | Health science, medicine, public health, biostatistics |
| PHPC/Cardiometabolic | Magnussen | VennHuynh | The association of muscular fitness in childhood with adult cardio-metabolic outcomes | Using data from a unique cohort study with measures from participants in childhood and adulthood, the successful candidate will have the opportunity to examine associations between muscular fitness phenotypes (strength, power, endurance) in childhood on later cardio-metabolic outcomes such as preclinical markers of atherosclerosis, CVD risk factors, metabolic syndrome and insulin resistance. Emerging data suggests that muscular fitness may provide additional cardio-protective effects over and above cardiorespiratory fitness, but the link between child muscular fitness and adult cardio-metabolic outcomes has not been shown. | Outstanding candidates would normally be able to demonstrate a background in health science, particularly exercise science and/or medicine. A demonstrated interest/experience in (bio)statistics and/or public health would also be advantageous. |
| PHPC/Cardiometabolic | Magnussen CG | Thomson R, Venn A | Development of risk prediction models for pediatric prediction of adult cardio-metabolic disease risk | The successful candidate will have the opportunity to use data from a major international collaboration, the International Childhood Cardiovascular Cohort (i3C) Consortium (<http://i3cconsortium.org>), to: (i) develop and contrast algorithms that consider the effects of multiple youth risk factors, and their interactions, to predict cardio-metabolic outcomes in adulthood; (ii) quantify the impact of modifying a risk factor to prediction of adult risk of cardio-metabolic outcomes; and (iii) use these models to help inform the development of digitised applications (apps) for use in the preventive health care setting. | Outstanding candidates would normally be able to demonstrate a background in statistics, programming and health sciences. |
| Cardio-metabolic | Sharman | Schultz | Cardiac syndrome X: central haemodynamic mechanisms and role of exercise | A series of studies in patients with cardiac syndrome X  to determine: 1) The contribution of central large artery haemodynamics on coronary micro vascular function under resting and ambulatory/light exercise conditions. 2) The effect of exercise training on the above factors as well as quality of life, clinical signs and symptoms in a randomised controlled trial of 6 months intervention. | Physiology or Medicine or Exercise Science |
| Cardio-metabolic | Sharman | Schultz | 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  |
| Cardio-metabolic | Negishi | Marwick | Air pollution, endothelial function and Cardiovascular disease | Data linkage exercise and data analysis that will seek the effect of Air-pollution on cardiovascular system. | Medicine, preferably some background of cardiology, and/or epidemiology/ biostatistics |
| Cardio-metabolic | Keske | Rattigan | Role of novel polyphenols on insulin action | Animal studies assessing the impact of plant derived polyphenols on insulin’s metabolic and vascular actions. | Animal research, biochemistry, nutrition and medicinal chemistry |
| Cardio-metabolic | Keske | Premilovac, Rattigan | Dietary sodium and cardio-metabolic outcomes in obesity | Animal and clinical studies assessing the impact of dietary sodium (ie salt) on insulin resistance, hypertension and cardiovascular disease risk; and how obesity interacts with these outcomes | Animal research, clinical research, nutrition background. |
| Cardio-metabolic | Rattigan | Keske | Micro vascular blood flow and metabolic regulation in skeletal muscle | Vasomotion and the resultant flow motion of blood flow in tissues is a fundamental physiological phenomenon that has been poorly understood. This project combines the use of two innovative techniques of laser Doppler flowmetry and real-time contrast-enhanced ultrasound that enables determination of flow motion, with methodology that provides information on tissue metabolism in skeletal muscle in vivo. A major aim of this project will be to gain new knowledge about how flow motion regulates the microvascular blood flow and nutrient delivery to muscle and the control of muscle metabolism. As flow motion is a fundamental physiological process, the outcomes will be important in a number of medical conditions, such as sarcopenia, vascular derived dementia, athletic performance, injury recovery, sepsis and critical care where blood flow and nutrient delivery are critical determinants of these pathological conditions. In particular this project will have a focus on understanding the development of insulin resistance, the underlying condition associated with obesity, hypertension and type 2 diabetes. The PhD candidate will be expected to have a strong background in physiology and mathematics and be expected to undertake studies in experimental animal models and human clinical research. | This research projects is most likely to be successfully completed by candidates with a biomedical, clinical or bioengineering background with a mathematical interest (eg. physiology, biochemistry, or biophysics). |
| Cardiometabolic | Rattigan | Dickson and Keske | Neural regulation of muscle glucose uptake | Regulation of muscle glucose metabolism.The project will investigate:• whether insulin-mediated glucose uptake of cultured muscle constructs will be significantly increased as neuromuscular junctions are formed.• whether optimal myocyte insulin sensitivity requires myocyte contraction (exercise) and neural stimulation.The discoveries from this model and the system itself will provide new fundamental knowledge about the regulation of skeletal muscle glucose metabolism that is particularly relevant to aging, to health consequences of physical activity, and spinal cord injury. | This research projects is most likely to be successfully completed by candidates with a biomedical background with experience in cell culture and molecular biology techniques. |
| Cardio-Metabolic | Schultz |  | Linking blood pressure abnormalities, and modifying with exercise intervention | Clinical data collection and analysis to determine:1. The likelihood (sensitivity and specificity) that those with *borderline hypertension* also have *masked hypertension* and *exercise hypertension*
2. The physiological factors (e.g. central haemodynamics, cardiac structure and function) that link and/or differentiate cardiovascular risk between *borderline hypertension*, *masked hypertension* and *exercise hypertension*
3. If all 3 BP conditions can be improved (lowering cardiovascular risk) via exercise intervention.
 | Exercise science/physiologyand/or  medicine/physiology |
| Neuro | Dickson | Young | Inhibitory Regulation Of Motor Neurons: A New Target Mechanism For Motor Neuron Diseaseneuro | 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 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’***AIM 1: We will determine the precise time course of interneuron dysfunction, pathology and loss relative to motor neuron pathology and ALS disease progression. AIM 2: We will determine if expression of ALS genetic mutations in interneurons is sufficient to drive excitability changes and pathogenic processes.  | Neuroscience, basic laboratory science, tissue histology, primary culture |
| Neuro | Dickson | Blizzard, C | Synaptic Dysfunction: An Early Mechanism Of Tdp-43 Pathogenesis In Als **?** | Amyotrophic Lateral Sclerosis (ALS) is a devastating neurodegenerative disease with no cure. ALS is caused by the selective death of central nervous system motor neurons. The disease is characterised by the presence of large ubiquitinated inclusions. The protein TDP-43 has been identified as the major component of these inclusions. Furthermore, autosomal dominant point mutations in *TARDBP,* the gene encoding TDP-43, have been identified as a genetic cause for ALS, highlighting the importance of this protein in the pathogenesis of ALS. Previous research on TDP-43 has focused on its action in the nucleus under normal conditions and the inclusions in the cytoplasm in pathological conditions. However, we and others have determined that TDP-43 function is also localised to the synapse of motor neurons and within dendritic spines, where it is thought to have a role in regulating spine homeostasis. Most recently, our analysis of the TDP-43A315T mouse model of ALS, has revealed a decrease in synaptic vesicle transporters, and the mislocalisation of synaptic scaffolding proteins early in the disease process. These data suggest a new route by which TDP-43 misprocessing can cause neuronal dysfunction, potentially independent of its role in the nucleus and its aggregation state. We will investigate this through three complimentary aims.AIM 1: Characterise the pre- and post-synaptic pathology occurring in the TDP-43A315T mouse model of ALS and tissue from ALS patients. AIM 2: Use two-photon laser scanning microscopy to determine mutant TDP-43A315T effect on pre- and post-synaptic pathology, in real-time, in upper and lower motor neurons.AIM 3: Employ primary cultures and microfluidic device technology to isolate pre- and post- synaptic functional consequence of TDP-43 mutations in cortical and motor neurons *in vitro.* | Neuroscience, basic laboratory science, tissue histology, culture, advanced microscopy |
| Neuro | Dickson | Breadmore | Microfluidic Technology To Help Understand Physical Damage To Brain Cells | 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.The specific aims of the proposal are to: 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. | Neuroscience, basic laboratory science, primary culture This is an interdisciplinary project combining basic neuroscience with microfabrication and analytical chemistry. |
| Neuro | Young | Gasperini | Understanding How Contact-Mediated Signalling Regulates Oligodendrocyte Progenitor Cell Behaviour.  | Myelination is absolutely essential for normal vertebrate function. Oligodendrocyte progenitor cells (OPCs) exist throughout the central nervous system (CNS), and generate a large number of new myelinating, oligodendrocytes throughout life. These progenitor cells comprise ~5% of all cells in the CNS, and are roughly evenly spaced throughout the optic nerve, brain and spinal cord. However we do not fully understand the signalling mechanisms that are responsible for maintaining this consistent distribution of cells. Furthermore each OPC receives synaptic input from a number of nearby neurons. However we do not know which signalling mechanisms allow the OPC to recognise the presynaptic neuronal site and form its post-synaptic density. This project aims to identify key signalling pathways that mediate these interactions.  | Biomedical science / neuroscience. |
| Neuro | Young | Gasperini |  | Myelination is absolutely essential for normal vertebrate function. Oligodendrocyte progenitor cells (OPCs) exist throughout the central nervous system (CNS), and generate a large number of new myelinating, oligodendrocytes throughout life. These progenitor cells comprise ~5% of all cells in the CNS, and are roughly evenly spaced throughout the optic nerve, brain and spinal cord. However we do not fully understand the signalling mechanisms that are responsible for maintaining this consistent distribution of cells. Furthermore each OPC receives synaptic input from a number of nearby neurons. However we do not know which signalling mechanisms allow the OPC to recognise the presynaptic neuronal site and form its post-synaptic density. This project aims to identify key signalling pathways that mediate these interactions.  | Biomedical science / neuroscience. |
| Neuro | Young | Wang | Myelin Remodelling: A Mechanism for Fine Tuning Conduction Velocity | Oligodendrocytes are the myelinating cells of the central nervous system (CNS). While the majority of oligodendrocytes are born during early postnatal development, new myelinating oligodendrocytes continue to be added throughout life. We propose that these new oligodendrocytes are engaged in the myelination of previously naked axons, but we also propose that they adjust the pattern of myelination of already myelinated axons. All axons within the adult mouse optic nerve are myelinated during development, yet adult-born oligodendrocytes continue to add numerous short internodes to axons in this region. We do not yet know how these new short internodes intercollate with the longer pre-existing myelin internodes along an axon, but such changes would be predicted to alter the conduction velocity of action potentials traversing the axon. This project will further investigate myelin remodelling in the CNS, and determine the effect of this novel form of CNS plasticity on conduction velocity. | Biomedical science / neuroscience |
| Neuro | Young | Wang | What is the Role of Oligodendrocyte Progenitor Cells in Mediating Disease-Induced Demyelination? | There is growing evidence that amyloid toxicity induces significant neurodegeneration, and that the level of soluble amyloid correlates with memory deficits and disease severity in Alzheimer's Disease (AD). Most research into AD investigates the consequences of amyloid toxicity for neurons. However recent experimental evidence indicates that glial cells are also affected. Early oligodendrocyte and/or myelin damage may contribute directly to AD-induced neuronal loss, and accelerate the disease progression. This project tests the hypothesis that Oligodendrocyte Progenitor Cells and oligodendrocytes are susceptible to AD-pathology.  | Biomedical science / neuroscience |
| CGI | DickinsonBurdonCharlesworthThomsonHolloway | DickinsonBurdonHollowayCharlesworthThomsonBrettingham-MooreMcWhirter | Elucidation of the genetic and epigenetic drivers of complex disease using established familial and/or case control human genetic resources | 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. | Molecular biological techniques, cell biology and biostatistical/bioinformatic expertise |
| CGI | Heinrich Korner | Bruce Taylor (would be the logical co-supervisor but could not be reached for comment) | Do MS-associated genetic changes in Vitamin D metabolism affect the function of T cells | To bring genetic polymorphisms and biological phenotype into a context.   | Immunology, biostatistics |
| CGI | Rathjen, J. | Rathjen, P. | The regulation of pluripotent lineage development by the amino acid l-proline. | To determine the molecular regulation of the Slc38a2 gene, encoding the primary l-proline transporter in pluripotent cells, and how gene regulation modulates pluripotent cell lineage progression. | Biochemistry / Cell Biology  |
| CGI | Rathjen, J. |  | The metabolism of pluripotent cells: defining the changes in metabolism that accompany pluripotent lineage development. | To determine the changes in carbohydrate use and mitochondrial activity in pluripotent cells in culture as they progress from early ES cells to late primitive ectoderm cells. | Biochemistry / Cell Biology |
| CGI | Woods | Lyons (Medicine) | 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 | Woods | Lyons (Medicine) | Analysis of factors produced by DFTD\* cancer cells that could influence the immune response | 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. | Immunology, cancer biology, molecular genetics, protein biology |
| \*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 prevents 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 antobodies. |
| CGI | Rathjen, J | Rathjen, P | The regulation of pluripotent lineage development by the amino acid l-proline | To determine the molecular regulation of the *Slc38a2* gene, encoding the primary l-proline transporter in pluripotent cells, and how gene regulation modulates pluripotent cell lineage progression. | Biochemistry / Cell Biology |
| CGI | Rathjen, J |  |  | To determine the changes in carbohydrate use and mitochondrial activity in pluripotent cells in culture as they progress from early ES cells to late primitive ectoderm cells. | Biochemistry / Cell Biology |
| Musculoskeletal  | Jones | Wizenberg | Tbone study- bone development in children from birth to age 25 years |  |  |
| Musculoskeletal  | Jones | Ding, Aitken, Laslett | TASOAC study 10 year study of osteoarthritis, osteoporosis, falls, vitamin D and bone architecture |  |  |
| Musculoskeletal  | Wizenberg | Jones, Smith | The role of diet patterns in the prevention and development of musculoskeletal disease. | While there has been substantial investigation in the role of individual dietary components into a range of musculoskeletal conditions including osteoporosis and osteoarthritis, a more holistic approach looking at the impact of dietary patterns on musculoskeletal conditions has yet to be fully explored.  This study will use data from existing longitudinal cohorts in different ages to:1. Using factor analysis of comprehensive dietary questionnaire data, identify potential patterns of healthy and unhealthy diet in population based cohorts with different age and sex distributions
2. Compare the components of these patterns across the life course
3. Examine the associations of dietary patterns with measures of musculoskeletal health, including bone density, radiographic osteoarthritis, knee structural change and falls risk.
 | nutrition, epidemiology, public health |
| Musculoskeletal | Winzenberg | Sanderson | The impact on multimorbidity on the prescription of exercise and physical activity for the prevention and management of chronic diseases. | Physical activity guidelines typically refer to population health recommendations for physical activity required in the general population for good health.  Prevention and treatment guidelines by contrast, focus on the exercise/physical activity requirements to improve the management of specific chronic diseases.  However, the requirements for different diseases vary and in some cases might result in conflicting advice, which is problematic in the setting of multimorbidity.  This project will aim to scope and analyse current Australian guidelines for major chronic diseases with regards to physical activity recommendations and exercise prescription, to determine:* 1. if and/or how the impact of multimorbidity is considered in each guideline;
	2. the potential for conflicting advice to be generated in the different combinations of diseases in multimorbidity.

From this, we will identify, design and test a clinically appropriate method of incorporating physical activity and exercise recommendations for different combinations of chronic diseases to enable clinicians to offer their patients a holistic approach to the use of physical activity advice/exercise prescription for the prevention and treatment of chronic disease in the setting of multimorbidity.  | clinical background, epidemiology, public health, physical activity/exercise |
| Musculoskeletal | Ding | Jones | Metabolic inflammation in knee osteoarthritis | Clinical and data analysis project with a strong clinical epidemiological focus that will seek to establish the associations between metabolic inflammation and knee osteoarthritis | Clinical, epidemiological  and/or biostatistics |