2016 Honours Projects

List updated: Thursday 21st April 2016

Note: This list of projects is updated weekly, and there may be additional research projects available which are not reflected in this list. This list is therefore not exhaustive, so if you wish to discuss any other potential projects, please feel free to contact the relevant Honours Co-ordinator. A list of Honours Co-ordinators is available here:
Supervisor: Doctor Alan Freeman

Is there a specific project available? Yes

Project title: Neural mechanisms underlying visual orientation discrimination

Is this an existing project? Yes

Research question: How do orientation-selective neurons account for orientation perception and discrimination?

This project is appropriate for students in the following degree(s):
- Any discipline

Research group type: Discipline based


Primary research interests:
- Visual psychophysics
- Computational modelling of the visual system

Chief investigator: Alan Freeman

Research team:

Aims and background
Humans are very good at perceiving and discriminating the orientation of visual edges and contours. It is known that this ability depends heavily on orientation-selective neurons in primary visual cortex, but the relationship between orientation perception and orientation-selective neural activity is unclear. My laboratory has recently developed a technique, low-contrast psychophysics, which reveals the influences of single neurons in behavioral measurements. The aim of the project is to use this technique to model the way in which a small population of orientation-selective neurons can account for orientation perception and discrimination.

Proposed method of data collection: Human subjects will be presented with low-contrast edges and contours on a computer monitor, and their ability to discriminate one orientation from a slightly different one will be measured. An existing computational model will be used to find a best fit to the results.

Ethics approval needed? No

Ethics applied for? N/A

Type of study: Quantitative

Resources needed (all available): My laboratory has the basic requirements for this study.

Supervisor contact details: +61 2 9351 9321 / Alan.Freeman@sydney.edu.au
**Supervisor:** Doctor Alycia Fong Yan

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**

**Project title:** Investigating mechanics of dance movement

**Is this an existing project?** No

**Research question:**
- What are the unique characteristics of dance movement?
- What are the kinematic and kinetic demands on the body during dance movement?
- How do the mechanics of dance movement change with varying levels of skill?
- What are the mechanical risk factors for injury during dance movement?

**This project is appropriate for students in the following degree(s):**
- Any discipline

**Research group type:** Research Group based


**Primary research interests:**
- Dance
- Biomechanics

**Chief investigator:** Alycia Fong Yan

**Research team:** Richard Smith, Claire Hiller

**Aims and background**

This project aims to better understand the movement patterns and forces that dancers undergo during dance performance to inform injury prevention and teaching practices.

Dancers push their bodies to the physical limits of motion whilst maintaining the aesthetic requirements of the dance genre. The extreme technical requirements can take a toll on the body with many dancers, both professional and recreational, either injured or at risk of injury. Dancers only have a short professional career and the competition for performance roles and jobs is high. The purpose of this study is to investigate the mechanism for injuries, risk factors for injury, and movement variability.

**Proposed method of data collection:**

**Ethics approval needed?** No

**Ethics applied for?** No

**Is this already an existing project?** No

**Type of study:** Quantitative

**Resources needed (all available):**

**Supervisor contact details:** alycia.fongyan@sydney.edu.au

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CRICOS 00026A
**Supervisor:** Doctor Alycia Fong Yan

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:** Research integrating novel exercise delivery in chronic disease population but open to student suggestions

**Project title:** Validation of musculoskeletal assessment tools

**Is this an existing project?** No

**Research question:** How many musculoskeletal assessment tools are available to assess lower limb function and/ core stability?

- How valid are these assessment tools?
- What are the normative values for different population groups?

**This project is appropriate for students in the following degree(s):**
- Any discipline

**Research group type:** Research Group based


**Primary research interests:**
- Dance
- Biomechanics
- Musculoskeletal mechanics and injury prevention

**Chief investigator:** Alycia Fong Yan

**Research team:** Evangelos Pappas, Claire Hiller

**Aims and background**

Aim: To assess the validity of various musculoskeletal assessment tools for the lower limb and core stability.

Specificity and validity of musculoskeletal assessment tools are important aspects to consider when selecting the right tool for a client. New or modified assessments have not been thoroughly investigated for use in different population groups, and clinicians need to reliably implement the assessment tools appropriately. The purpose of this project is to establish normative values across different population groups, investigate the construct validity, specificity, and accuracy of the tests.

**Proposed method of data collection:**

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Is this already an existing project?** No

**Type of study:** Quantitative

**Resources needed (all available):**
Additional information:

Supervisor contact details: alycia.fongyan@sydney.edu.au
Supervisor: Doctor Anne Honey

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Going home: Experience of international students transitioning to practice in non-Western countries

Is this an existing project? Yes

Research question: How do international occupational therapy students transfer the skills they have learned in Australia to the different cultural contexts of their home countries?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/anne.honey.php

Primary research interests: International student experiences of OT

Chief investigator: Anne Honey

Research team:

Aims and background

Studying occupational therapy requires students to think and behave in ways that may come more or less “naturally” to students depending on culture. A previous study found that international OT students from Asian backgrounds were concerned about how what they learned in Australia would translate into practice in their home countries. Little is known about how international students from CALD backgrounds experience the transition to practice in their home countries.

Proposed method of data collection: Method can be negotiated. Participants will be OT Alumni from the University of Sydney who were international students from non-western backgrounds and are now working in non-western countries. Methods could involve a survey of all alumni or skype interviews with a smaller sample.

Ethics approval needed? Yes

Ethics applied for? No

Type of study: Could be qualitative or quantitative.

Supervisor contact details: 93519370 / Anne.honey@sydney.edu.au
Supervisor(s): Anne Honey, Nicola Hancock

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Use and helpfulness of parent practices to support young people with mental illness

Is this an existing project?

Research question: What practices do parents find helpful for supporting young people with mental illness?

This project is appropriate for students in the following degree(s):

- Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/anne.honey.php

Primary research interests:

- Parent support for young people with mental illness

Chief investigator: Anne Honey

Research team: Nicola Hancock

Aims and background

Parents use a variety of different practices to try to support a young people with their mental illness. Seventy-eight such practices have been identified, but little is known about which practices are used most frequently and which are likely to be experienced as helpful. This study will result in identification of a suite of practices that parents have found most helpful in different circumstances.

Proposed method of data collection: The student will develop an online parent survey to identify the frequency with which they report using specific practices and the perceived helpfulness of these practices. This survey data will be analysed using a variety of quantitative methods

Ethics approval needed? Yes

Ethics applied for? No

Type of study:

Resources needed (all available):

Additional information:

Supervisor contact details: 93519370 / Anne.honey@sydney.edu.au
Supervisor: Doctor Anne Honey

Project title: What does recovery look like for people with co-experiences of mental illness and addiction?

Is this an existing project? No

Research question: What does recovery look like for people with co-experiences of mental illness and addiction?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/anne.honey.php

Primary research interests:
- Families in which a member is living with mental illness
- Mental health consumer perspectives/recovery
- Adolescent mental health
- Experiences of international OT students

Chief investigator: Anne Honey & Francesca Coniglio

Research team: Francesca Coniglio

Aims and background

A recovery based approach is currently recognised as best practice in both mental health and addiction services. Considerable research on consumers’ experiences in each of these fields has contributed to current understandings of what recovery is and what contributes to recovery. However, concepts of mental health and addiction recovery have developed independently of each other and little research has been done to understand recovery from the perspectives of people who experience both mental illness and substance addiction, referred to clinically as dual diagnosis. A myriad of personal testimonies exist in various online forums, which document individuals’ journeys in recovery from mental illness and substance addiction, however these remain at an anecdotal level.

Proposed method of data collection: The student will conduct a qualitative analysis of stories of recovery from the perspectives of people who experience both mental illness and addiction. This will involve scoping the available online testimonies from around the world, selecting a purposive sample of testimonies and analysing the data using a rigorous and well-established qualitative method.

Ethics approval needed? Yes

Ethics applied for? No

Type of study: Qualitative
Any additional information: Supervisory team consists of Anne Honey, an academic from the discipline of OT, and Franca Coniglio, a mental health clinician who is currently conducting her PhD research in the area of recovery for people with co-experiences of mental illness and addiction.

Supervisor contact details: 93519370 / Anne.honey@sydney.edu.au
Supervisor: Doctor Cate Madill

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Does auditory-perceptual discrimination ability predict risk and/or presence of voice disorder

Is this an existing project? No

Research question: Does auditory-perceptual discrimination ability predict risk and/or presence of voice disorder

This project is appropriate for students in the following degree(s):

- Bachelor of Health Sciences (Honours), Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/cate.madill.php

Primary research interests:

- Voice science
- Voice disorders
- Motor Learning
- Acoustic analysis
- Clinical Education

Chief investigator: Cate Madill

Research team: Disability & Community

Aims and background

Voice disorders occur in approximately 7% of the population. The majority of these disorders are so-called functional disorders, that is, movement based, repetitive strain injuries. This type of disorder requires perceptual training as well as instruction in how to produce the movement more efficiently. In many cases the disorder is acquired without the occurrence of an organic condition. This raises the question of whether the disorder occurs because of a lack of awareness of the movement such that sub-optimal performance is not detected until the emergence of aversive symptoms such as pain or loss of voice. This project aims to assess the auditory-perceptual discrimination abilities of people with and without voice disorder to discover if there is a relationship between auditory-perceptual awareness and risk / presence of a voice disorder.

Proposed method of data collection: The study is a 2 group comparison of pitch discrimination. Thirty normal subjects will be recruited locally from within the University population and 30 disordered subjects will be recruited from the on-campus Speech Pathology Clinics and University affiliated clinics. All participants will be required to complete a pitch discrimination task using a computer-based program. Error patterns in each group will be analysed using ANOVA.
Ethics approval needed? Yes
Ethics applied for? No
Is this already an existing project? No
Type of study: Quantitative

Resources needed (all available): Access to the Voice Research Laboratory and high quality recording equipment.

Additional information: I have been an honours supervisor for 12 years, and have successfully supervised 17 honours student, 2 of which have gone onto undertake PhDs, and have resulted in presentations at 8 international conferences, 9 national conferences and 5 peer-reviewed publications. Honours students are included in the activities and culture of the Voice Research Laboratory research team. This project will also involve working with an academic from the University of Queensland, Prof Paul Carding, who is internationally recognized as a leader in voice research.

Supervisor contact details: cate.madill@sydney.edu.au
**Supervisor:** Doctor Che Fornusek

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**

**Project title:** Electrical Stimulation (ES) Cycling Exercise for Persons with Advanced Multiple Sclerosis

**Is this an existing project?** Yes

**Research question:** Does electrically stimulated exercise benefit persons with severe multiple sclerosis?

**This project is appropriate for students in the following degree(s):**
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

**Research group type:** Research Group based

**University Profile:** [http://sydney.edu.au/health-sciences/about/people/profiles/che.fornusek.php](http://sydney.edu.au/health-sciences/about/people/profiles/che.fornusek.php)

**Primary research interests:**
Ché’s research is focused on exploring the long term benefits of exercise and physical activity for persons with neurological injury or disease (e.g. spinal cord injury, multiple sclerosis, peripheral nerve disease, cerebral palsy).

**Chief investigator:** Che Fornusek

**Research team:** Joshua Burns

**Aims and background**

The objective of this project is to investigate whether electrical muscle stimulation can assist persons with severe multiple sclerosis to perform exercise. Exercise is beneficial for maintaining strength, function, quality of life and mental health in people with MS. However, the advancing paralysis soon reduces then eliminates the ability to exercise effectively and those with severe MS are often wheelchair bound and very inactive. Such an inactive lifestyle accelerates deterioration in fitness, quality of life, function, and independence. This research pilot trial will evaluate the benefits of electrical stimulation cycling exercise program for persons with advanced MS.

**Proposed method of data collection:** Evaluation will be performed via a training study. ES-cycling will be compared to current practice rehabilitation regarding potential improvements in muscle mass, leg strength, mobility, and quality of life. This may put them at risk of cardiovascular disease and secondary deconditioning. The ES-cycling will be performed on a special ES-cycle constructed by Dr Fornusek to maximise exercise intensity for persons with paralysis/paresis.

**Ethics approval needed?** No

**Ethics applied for?** Yes

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Supervisor contact details:** Che.Fornusek@Sydney.edu.au
Supervisor: Doctor Che Fornusek

Is there a specific project available?

Is there a broad research topic/s for students to consider:

Project title: Investigation of the Demands of Participation in Physical Disability Rugby League

Is this an existing project?

Research question: What are the demands of playing Physical Disability Rugby League? Does participation lead to improvement in health, fitness and quality of life?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/che.fornusek.php

Primary research interests:
- Ché’s research is focused on exploring the long term benefits of exercise and physical activity for persons with neurological injury or disease (e.g. spinal cord injury, multiple sclerosis, peripheral nerve disease, cerebral palsy).

Chief investigator: Fornusek

Research team: Orr, Hackett, English, Sanders

Aims and background
Physical Disability Rugby League is a sport that was created in Sydney to allow persons with physical disability to play league (https://www.youtube.com/watch?v=yV04gbXUURo). The majority of players with disability have cerebral palsy but players with other disabilities play (e.g. stroke, muscular atrophy, limb deficiency). The unique combination of tackle and touch rules allows abled bodied and individuals with mild to severe disability to play league. The purpose of this research is to create a basis of knowledge for the identification of the benefits of and development of PDRL. There is currently very little literature on any disabled contact sport similar to PDRL.

Proposed method of data collection: The plan for this study is to record data from players during the 2016 season. Data collected will include anthropomorphic tests, physiological tests, functional testing, and monitoring / performance analysis during games.

Ethics approval needed? No

Ethics applied for? Yes

Is this already an existing project?

Type of study: Quantitative

Supervisor contact details: Che.Fornusek@Sydney.edu.au
Supervisor: Doctor Che Fornusek

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Optimising Functional Electrical Stimulation Cycling Olympics in 2016

Is this an existing project? No

Research question: Can we optimise the training and delivery of electrical stimulation to muscles be optimized to improve the speed and feasibility of electrical stimulation cycling?

This project is appropriate for students in the following degree(s):

· Bachelor of Health Sciences (Honours), Bachelor of Applied Science (Exercise and Sport Science) Honours, Bachelor of Applied Science (Exercise Physiology) Honours

Research group type: Research Group based


Primary research interests:

Chief investigator: Che Fornusek

Research team: Hackett, Sinclair

Aims and background

The aim of this project is to improve our understanding of electrical stimulation so that both recreational and competitive electrical stimulation cycling can be improved. In October 2016, pilots with paralyzed leg due to complete spinal cord injuries (SCI) will compete in the Cybathlon bicycle race. The Cybathlon is an Olympics for where persons with disability utilise assistive technology to compete. The University of Sydney team attended a rehearsal event in Zurich in July 2015. Although, the University's cyclist performed well it was clear that with better training, understanding of electrically stimulated muscle fatigue and more appropriately timed muscle stimulation the cyclist could have performed better.

Proposed method of data collection: The proposed research will be composed of two parts and use persons with paraplegia from our laboratory:

1) Optimization of muscle stimulation angles to produce more drive on the pedal crank. This part of the project will involve systematically modifying the muscle stimulation for each muscle to determine which angles produce the greatest power drive on the pedal crank. These stimulation angle will be compared to a biomechanical model which predicts the optimal angles to use.

2) Optimization of muscle stimulation window. The stimulation window which produces the most drive over one pedal revolution may not be the optimal angle to use over longer period of cycling, for example during the Cybathlon FES bicycle race. It is likely that there is a trade off between the stimulation angles and fatigue, i.e. longer stimulation angles will produce more fatigue and less cycling power in the longer term. To determine the relationship between stimulation angle and muscle fatigue, experiments will be performed on the Biodex Testing System 2.
The results of these two experiments will be used to maximise the performance of the Sydney University Team attending Cybathlon.

Ethics approval needed? Yes
Ethics applied for? No
Is this already an existing project? No

**Type of study:** Quantitative

**Resources needed (all available):** The team has all of the equipment for this event including an overground FES tricycle. FES athletes will be trained in C Block on one of the stationary FES ergometers which we have designed. Spinal cord injured participants (athletes) will be recruited from our pool of past participants and new recruits.

**Additional information:**

**Supervisor contact details:** che.fornusek@sydney.edu.au
**Supervisor:** Doctor Che Fornusek

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**

**Project title:** Pilot Study of Progressive Resistance Training for Sedentary Adults with Charcot-Marie-Tooth

**Is this an existing project?** Yes

**Research question:** The aim of this project is to investigate the safety and efficacy of power resistance training for individuals with Charcot-Marie-Tooth (CMT). Our hypothesis is that power training is safe and efficacious for individuals with CMT. We expect power training to produce strength and muscle power gains to individuals with CMT. A secondary aim of this project is to investigate the relationship between muscle strength, muscle power, function and quality of life in persons with CMT.

**This project is appropriate for students in the following degree(s):**

- Bachelor of Health Sciences (Honours), Bachelor of Applied Science (Exercise and Sport Science) Honours, Bachelor of Applied Science (Physiotherapy) Honours, Bachelor of Applied Science (Exercise Physiology) Honours

**Research group type:** Research Group based

**University Profile:** [http://sydney.edu.au/health-sciences/about/people/profiles/che.fornusek.php](http://sydney.edu.au/health-sciences/about/people/profiles/che.fornusek.php)

**Primary research interests:**

- Ché’s research is focused on exploring the long term benefits of exercise and physical activity for persons with neurological injury or disease (e.g. spinal cord injury, multiple sclerosis, peripheral nerve disease, cerebral palsy).

**Chief investigator:** Che Fornusek

**Research team:** Hackett, Fiatarone-Singh, Burns, Halaki

**Aims and background**

CMT is the most frequently inherited peripheral neuropathy affecting around 1 in 2500 persons. CMT causes slow degeneration of the nerves in the extremities resulting in weakness including feet, legs, arms and hands. In the past, persons with CMT have been discouraged from performing exercise and physical activity because clinicians believed that such activity might hasten the disease; these beliefs have never been validated by studies or evidence. Evidence is required on exercise for persons with CMT, especially at moderate to high intensities. A considerable amount of weakness and muscle atrophy seen in persons with CMT is very likely due to secondary disuse due to inactivity. Exercise training might counteract some of the weakness and also provide persons with CMT "protection" from developing secondary metabolic disease or lead to improve functional ability in daily activities.

**Proposed method of data collection:** This project is for a resistance training program in persons with Charcot-Marie-Tooth (CMT). The training will be high resistance power training in the Keisser lab and will last for 8 weeks. The training intervention will be wait list randomised control trial; e.g. all individuals get
the training intervention eventually. Measures of health, fitness and quality of life will be taken before and after training. The results of this pilot study will be promoted to educate persons with CMT and clinicians on the benefits of exercise for CMT.

**Ethics approval needed?** No  
**Ethics applied for?** Yes  
**Is this already an existing project?** Yes  
**Type of study:** Quantitative  
**Resources needed (all available):**  
**Additional information:**  
**Supervisor contact details:** Che.Fornusek@sydney.edu.au
Supervisor: Professor Deborah Black

Is there a specific project available?

Is there a broad research topic/s for students to consider: Development and efficacy of risk calculators for cancer and other chronic diseases. Sensitivity and specificity of the instrument.

Project title:

Is this an existing project? No

Research question:

This project is appropriate for students in the following degree(s):
- Any discipline

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/deborah.black.php

Primary research interests:
- survey and study design
- instrument design
- statistical analyses

Chief investigator:

Research team:

Aims and background:

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for? No

Is this already an existing project? No

Type of study: Quantitative

Resources needed (all available):

Additional information:

Supervisor contact details: deborah.black@sydney.edu.au
**Supervisor:** Associate Professor Evangelos Pappas

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:** ACL injuries

**Project title:** Recovery after ACL reconstruction; predictors of good outcomes

**Is this an existing project?** No

**Research question:** What predicts outcomes after ACL reconstruction?

**This project is appropriate for students in the following degree(s):**
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

**Research group type:** Research Group based


**Primary research interests:**
Athletic knee injuries; sports injury prevention; biomechanics; recovery after knee injury

**Chief investigator:** Evangelos Pappas

**Research team:** Corey Scholes

**Aims and background**
There is wide variability on the extent of recovery after ACL reconstruction. However, there is limited research on predictors of outcomes. The current project aims to identify predictors of recovery after ACL reconstruction.

**Proposed method of data collection:** Secondary data analysis of predictors (age, sex, activity level, pre and post-operative measures etc) on recovery after ACL reconstruction

**Ethics approval needed?** Yes

**Ethics applied for?** Yes

**Is this already an existing project?** No

**Type of study:** Quantitative

**Resources needed (all available):**

**Additional information:**

**Supervisor contact details:** evangelos.pappas@sydney.edu.au
Supervisor: Professor Glen Davis

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Promoting Exercise through Assistive and Surveillance Technologies after Chronic Disability

Project title: Promoting Exercise through Assistive and Surveillance Technologies after Chronic Disability

Is this an existing project? Yes

Research question: To be developed

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

Research group type: Research Group based


Primary research interests:
- Exercise Physiology
- Clinical Exercise Physiology
- Exercise for Special Populations

Chief investigator: Glen Davis

Research team:

Aims and background

To be clarified

Proposed method of data collection: Various

Ethics approval needed? Yes

Ethics applied for? No Type of study: Quantitative

Resources needed (all available): Additional

information:

Supervisor contact details: 93519466 / glen.davis@sydney.edu.au
**Supervisor:** Professor Glen Davis

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:** Projects relating to: Physiological responses and energy costs of electrically-stimulated rowing in people with spinal cord injury; Comparison of electrically stimulated walking versus cycling in individuals with spinal cord injury; Energy expenditure analysis in adults with intellectual disability (with Professor Roger Stancliffe)

**Project title:**

**Is this an existing project?**

**Research question:**

**This project is appropriate for students in the following degree(s):**
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

**Research group type:** Discipline Based

**University Profile:**

**Primary research interests:**
- Exercise Physiology
- Clinical Exercise Physiology
- Exercise for populations with chronic disease and disability

**Chief investigator:**

**Research team:**

**Aims and background**

**Proposed method of data collection:**

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Is this already an existing project?** No

**Type of study:** Qualitative

**Resources needed (all available):**

**Additional information:**

**Supervisor contact details:** glen.davis@sydney.edu.au / 9351 9466
Supervisor: Doctor Grace Spencer

Is there a specific project available? No

Is there a broad research topic/s for students to consider: Research on young people’s health, health practices and health promotion

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):

- Any discipline

Research group type: Discipline based


Primary research interests:

- Health promotion
- Children and young people’s health
- Health practices and behaviours
- Empowerment
- Social determinants of health - gender, social position, socio-environment
- Qualitative research

Chief investigator:

Research team:

Aims and background

Proposed method of data collection:

Ethics approval needed? N/A

Ethics applied for?

Is this already an existing project?

Type of study:

Resources needed (all available):

Additional information:

Supervisor contact details: grace.spencer@sydney.edu.au
Supervisor: Doctor Hans Bogaardt

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Speech Pathology services and service delivery for patients with multiple sclerosis

Is this an existing project? No

Research question: 1. Do patients with MS (self-)report problems with communication and/or swallowing?
2. How are current speech pathology services in Australia covering those needs?
3. Based on self-reports by MS patients, do patients have access to these services.

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/hans.bogaardt.php

Primary research interests:
- Dysphagia
- Epidemiology

Chief investigator: Hans Bogaardt

Research team: Kirrie Ballard, Dalal Alali

Aims and background

Literature suggests that patients with MS have to a larger extent communication disorders and swallowing problems. It is reported that almost 40% has swallowing problems, leading to aspiration pneumonia and morbidity.

So far, it is unknown what the needs of MS patients in Australia are as it comes to speech pathology services. There seems also limited awareness for these problems leading to the possibility that patients are underestimating their problems.

By identifying the needs of the patients and the current practice (i.e. service delivery), this project aims to determine the incidence of dysphagia, dysarthria and language problems in MS patients, in order to raise awareness and possibly publish guidelines on improving care for MS patients.

Proposed method of data collection: Proposed research involves a survey of a large number of MS patients (through an existing database) and collecting data on speech pathology related problems and how services were provided to these patients.

Ethics approval needed? No

Ethics applied for? Yes

Is this already an existing project? No

Type of study: Quantitative
Resources needed (all available): none

Additional information: Looking at the size of the project, this project would probably suit two students.

Supervisor contact details: hans.bogaardt@sydney.edu.au
**Supervisor:** Doctor Helen O’Connor

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:** No we have a specific project see below

**Project title:** Development of tool to assess quality in exercise performance studies

**Is this an existing project?** No

**Research question:** What are the critical design and methodological factors that determine study quality in exercise performance studies

**This project is appropriate for students in the following degree(s):**
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

**Research group type:** Discipline based


**Primary research interests:** Sports Nutrition, exercise training studies

**Chief investigator:** Dr Helen O’Connor

**Research team:** Dr Jacqui Raymond & Dr Ollie Jay

**Aims and background**

The primary aim is to develop a robust tool to assess methodological quality and reporting of exercise performance studies. Currently there is no tool or scale available to assess the unique methodological features of these types of studies. Such a tool or scale would be useful to assess study quality as part of a systematic review or meta-analysis.

**Proposed method of data collection:** We will use a modified Delphi approach to achieve consensus among a panel of international experts on the critical design and methodological factors that determine study quality. The research process will include recruiting research experts in the fields of exercise science and sports nutrition and maintaining close contact these participants throughout the Delphi study. We anticipate the successful completion of this study will deliver a manuscript for publication.

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Is this already an existing project?** No

**Type of study:** Quantitative

**Resources needed (all available):** The student will need a place to work within EXSS. Honours budget will be used to purchase gift vouchers for study participants on completion of the study.

**Additional information:** This is a new project. The student will be able to work independently with the support of the supervisors. Communication with participants will be electronic. The supervisors have a strong network of international experts for the student to engage with and they also have extensive...
experience with systematic review checklists and with honours supervision. The project team have worked together before and have a strong, supportive approach to honours supervision.

**Supervisor contact details:** helen.oconnor@sydney.edu.au
Supervisor: Doctor Jennifer Smith-Merry
Is there a specific project available? No
Is there a broad research topic/s for students to consider:
  - Media representations of young people and psychosis.
  - Media representations of alternative and complementary therapies for mental health problems
Project title:
Is this an existing project? No but it builds on recent work by the supervisor.
Research question:
This project is appropriate for students in the following degree(s):
  - Bachelor of Health Sciences (Honours)
  - Bachelor of Applied Science (Occupational Therapy) Honours
Research group type: Research Group based
Primary research interests: Mental Health
Chief investigator:
Research team:
Aims and background:
Proposed method of data collection:
Ethics approval needed? yes
Ethics applied for? no
Type of study: Qualitative analysis of media
Resources needed (all available):
Additional information:
Supervisor contact details: +61 2 9351 9060 / jennifer.smith-merry@sydney.edu.au
**Supervisor:** Doctor Jennifer Smith-Merry

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**
- Media representations of young people and psychosis.
- Media representations of alternative and complementary therapies for mental health problems

**Project title:** Innovation for mental health practice: mapping communication between psychiatrists and others within the NSW mental health system

**Is this an existing project?** Yes

**Research question:** Specifically the project asks the following research questions:
- What practice knowledge do psychiatrists communicate to others?
- Who do psychiatrists communicate this knowledge to?
- Through what forums does this communication take place?
- What practice knowledge do psychiatrists gain from others?
- Who do they gather their practice knowledge from?
- How does practice innovation from elsewhere become integrated into an individual psychiatrist’s practice?
- Are current official and non-official channels set up for sharing innovation and practice knowledge effective?
- To what extent do individual psychiatrists alter their practice in response to official recommendations in their own and other jurisdictions (e.g. HCCC recommendations)?

**This project is appropriate for students in the following degree(s):**
- Bachelor of Health Science

**Research group type:** Research Group based

**University Profile:** [http://sydney.edu.au/health-sciences/staff/jennifer_smith-merry](http://sydney.edu.au/health-sciences/staff/jennifer_smith-merry)

**Primary research interests:**
- Health Policy
- Mental Health
- Recovery
- Health Services Research
- Patient Experiences
- Health Ethics
- Mental Health Law
- Qualitative Research

**Chief investigator:** Jennifer Smith-Merry

**Research team:**

**Aims and background:**
This project explores a significant gap in our understanding of the functioning of Australian mental health systems: how individual psychiatrists communicate with and learn from others working in mental health. Within this context the research is specifically focussing on the communication of practice innovation. Innovation has become a policy goal as reflected in the establishment of the NSW state government’s Agency for Clinical Innovation and is seen as a goal for individual practitioners (NSW Health, 2009). However the extent to which this is possible given the systemic and practice constraints placed on practitioners is not fully understood. The project therefore takes as a starting point how practitioners, and specifically psychiatrists, communicate with others within the mental health system. Understanding channels of communication is vital if we are to understand how the transmission of innovation is to take place within the mental health system. The first aim of the study is thus to explore the channels through which psychiatrists communicate with each other and with others working within the mental health system. The second aim is to understand what type of knowledge psychiatrists communicate with others. The third aim is to understand the structural and communicative barriers to effective communication and learning for innovation. The project will explore these issues in the context of the NSW health system and utilise an online survey and in-depth interviews administered to individual psychiatrists.

**Proposed method of data collection:** Survey and interviews: A short, secure (utilising SSL technology), online survey will be distributed to psychiatrists working in selected areas across NSW. The target areas will be the Sydney greater metropolitan area (including Blue Mountains), Broken Hill and Coffs Harbour. These sites have been chosen as they represent metropolitan, regional and remote areas. Potential respondents will be contacted via an email sent out by local health networks (in the case of psychiatrists working in the public sector) and via professional bodies such as the ANZRCP or the association for Rural Psychiatry. Interviews will be semi-structured interviews. Interviews will explore the research questions in more depth in order to tease out the subtle complexities of psychiatrists’ communicative relationships. The aim is to conduct 20 interviews of half an hour in length. Interview responses will be professionally transcribed. Data will be entered into the qualitative data management software NVivo and hand coded according to the research questions. A preliminary report will be distributed to all respondents and relevant organisations and through established practitioner, academic, health and policy networks.

**Ethics approval needed?** Yes
**Ethics applied for?** Yes **Type of study:** Qualitative **Resources needed (all available):** Additional **information:**

**Supervisor contact details:** +61 2 9351 9060 / jennifer.smith-merry@sydney.edu.au

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ABN 15 211 513 464
CRICOS 00026A
Supervisor: Doctor Jin Huang

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Glaucoma - a group of eye diseases where raised intraocular pressure occurs over time, leading to visual impairment, and eventually blindness. Research in vision in the eye but open to student suggestions.

Project title: Understanding the properties of retinal ganglion cells in glaucoma.

Is this an existing project? Yes

Research question: To study of functional and morphological properties of retinal ganglion cells in glaucoma.

This project is appropriate for students in the following degree(s):
- Any discipline

Research group type: Research Group based


Primary research interests:
- Vision
- Retina
- Ganglion cells
- Patch clamp
- Microscopy

Chief investigator: Dr Jin Huang

Research team: Dr Dario Protti

Aims and background

Glaucoma is the leading cause of irreversible blindness worldwide. It is a group of eye diseases where raised intraocular pressure (IOP) occurs over time, leading to visual impairment, and eventually blindness. This raised IOP causes the progressive death of the output neurons (nerve cells) of the eye called retinal ganglion cells. Despite substantial research on this disease, the pathophysiology of glaucoma is not fully understood. The aim of this project is to understand the pathophysiological changes in the properties of ganglion cells in glaucoma.

Proposed method of data collection: We will characterise these changes by using a mouse model of glaucoma. We will examine the properties of ganglion cells at different time points to allow comparisons before the development of glaucoma and during glaucoma with peak IOP. The properties of ganglion cells will be characterised by doing electrical recordings using patch clamp techniques and confocal microscopy. We will focus our studies on the large alpha ganglion cells. We will characterise their basic physiological responses, which provide information about their health and behaviour such as spontaneous activity, contrast sensitivity and receptive field organisation. Thus, this project will contribute
to our understanding of the effects of raised IOP characteristic of glaucoma on ganglion cell properties that ultimately leads to their death.

Ethics approval needed? Yes
Ethics applied for? Yes
Is this already an existing project? Yes
Type of study: Quantitative
Resources needed (all available): The lab is located on the Camperdown campus. Student will be working closely with Dr Huang.

Additional information:
Supervisor contact details: jin.huang@sydney.edu.au
Supervisor: Doctor Joanna Diong

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Hand function in neurological conditions

Research integrity and bias in research

(Open to student suggestions)

Project title: What do the fingers do all day after a stroke? – 24 hour monitoring of thumb and finger motion after acute stroke

Is this an existing project? No

Research question: How much is the affected hand used after stroke?

(1) How many minutes per day do the affected thumb and fingers move after acute stroke?

(2) What is the amplitude of thumb and finger movements?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Occupational Therapy) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

Research group type: Discipline based


Primary research interests:
- Human movement
- Muscle architecture and adaptation
- Physical activity in stroke and clinical populations
- Hand function
- Clinical biomechanics

Chief investigator: Dr Joanna Diong

Research team: Dr Martin Héroux, Ms Stephanie Potts

Aims and background

Less than half of all stroke survivors who have impaired arm movement will recover physical function 6 months after stroke, and up to 30% of people will develop joint contractures (loss of range of motion) at the affected wrist and hand.

Wrist and hand contractures after stroke could be due to decreased range of motion of the thumb and fingers, decreased use of the thumb and fingers, or both. In healthy people, muscles often undergo large active and passive changes in length during daily activities. However after stroke there is an 80%
reduction in use of the affected arm at the large joints (shoulder, elbow and wrist joints) compared to the unaffected arm during daily activities. The thumb and finger joints of the affected arm may not undergo sufficient, large amplitude movements to maintain normal passive muscle length and stiffness.

Some limitations in previous studies that use accelerometers to map physical activity are (1) accelerometer measures taken at the wrist cannot quantify the amount of thumb and finger joint motion and (2) accelerometers cannot quantify amplitude of thumb and finger movement. This study proposes to apply modern stretch sensor technology to measure amount and amplitude of thumb and finger joint range of motion over a prolonged period after acute stroke.

Proposed method of data collection: Customised stretch sensors will be positioned over the extensor surface of the index finger and thumb. Data will be collected from 15 participants with stroke and 15 able-bodied control participants. These data will be recorded by a wireless device.

Ethics approval needed? Yes
Ethics applied for? No
Is this already an existing project? No
Type of study: Quantitative
Resources needed (all available):
Additional information: An interest in clinical research and wearable technology could be beneficial but is not necessary. As part of this project you will pick up valuable and useful skills eg. interacting with patients, conducting biomedical research in clinical settings, applying novel technology in health research.
Supervisor contact details: joanna.diong@sydney.edu.au
Supervisor: Doctor Kate Edwards

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Research in effects of exercise on immune function.

Relationships between stress behaviour and health.

Project title: Aerobic exercise during chemotherapy infusion

Is this an existing project? No

Research question: Can aerobic exercise be used by patients during chemotherapy infusion prior to surgical removal of tumour?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

Research group type: Research Group based


Primary research interests: Exercise immunology, stress physiology

Chief investigator: Dr Kate Edwards

Research team: Michael Marthick, Dr John Cambell, Prof Doug Joshua

Aims and background

Aerobic exercise has historically been used by dialysis patients during infusion and has been found to improve aerobic endurance, muscular strength, quality of life and dialysis efficiency. Recent animal and human data suggest that aerobic exercise during infusion may increase blood flow to a tumour, and therefore increase drug delivery to a tumour. In addition, exercise may attenuate the hypoxic tumour microenvironments that are associated with conventional anticancer treatment failures.

Proposed method of data collection: In this initial feasibility study it is proposed that ten neo-adjuvant chemotherapy patients complete stationary cycling at 40-70% VO2peak for 20-40 minutes (in a graded program) during infusion. Data collection will focus on exercise tolerability for patients during infusion, chemotherapy completion rate, and changes in aerobic fitness and fatigue during therapy. Patients will be referred to Michael Marthick, Exercise Physiologist at the Chris O'Brien Lifehouse.

Ethics approval needed? Yes

Ethics applied for? No

Is this already an existing project? No

Type of study: Quantitative

Resources needed (all available):

Additional information:

Supervisor contact details: kate.edwards@sydney.edu.au
Supervisor: Doctor Kate Edwards

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Exercise is medicine in multiple myeloma (MM)

Is this an existing project? No

Research question: Can an exercise intervention can improve prognosis in MM patients?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/kate.edwards.php

Primary research interests:
- Exercise immunology, stress physiology

Chief investigator: Dr Kate Edwards

Research team: Michael Marthick, Dr John Cambell, Prof Doug Joshua

Aims and background

A common co-morbidity caused by MM and exacerbated by anti-MM therapy is profound immunosuppression which gives rise to recurrent serious infections. Administration of influenza, pneumococcal and other vaccines is recommended, however, vaccine efficacy in MM is extremely poor, thus compounding infection risk in this patient group. A number of studies have demonstrated that exercise can be used as an adjuvant to the immune system. Using a human vaccination model, it was found that exercise may augment immune-competence and enhance vaccine responses. Such improvement may lead to a direct reduction in rates of rates of infection-associated hospital visits, infection-related deaths and infection-induced inflammation leading to MM tumour relapse.

Proposed method of data collection: MM (N=20) patients diagnosed at the Sydney Cancer Centre, Royal Prince Alfred Hospital (RPAH) will be recruited via referral to Exercise Physiology (Michael Marthick at the Chris O'Brien Lifehouse). Ex group participants will attend the Lifehouse EP unit for initial exercise induction and exercise capacity test, enabling personalised prescription. To ensure suitability and promote adherence, each participant will be given a program based on their cardiopulmonary fitness and exercise capacity for a period of 12 weeks. Patients will receive vaccinations (pneumococcus) after undertaking a supervised aerobic and resistance exercise session. Serum biomarkers of myeloma (IgG, IgA, IgM and serum FLC) will be assessed before during and after exercise intervention, and peak antibody responses will be measured in serum.

Ethics approval needed? Yes

Ethics applied for? No
Is this already an existing project? No
Type of study: Quantitative
Resources needed (all available):
Additional information:
Supervisor contact details: kate.edwards@sydney.edu.au
Supervisor: Doctor Kate Edwards

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Latent virus reactivation during exam stress: effects of physical fitness and psychological variables

Is this an existing project? No

Research question: Can physical fitness or positive psychological variables reduce the reactivation of latent viruses

This project is appropriate for students in the following degree(s):
- Any discipline

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/kate.edwards.php

Primary research interests:
- Exercise immunology, stress physiology

Chief investigator: Dr Kate Edwards

Research team:

Aims and background

Latent virus such as CMV, EBV and HSV have been found to be reactivated during times of stress, such as examination stress. However, little is known regarding the protective effects of physical fitness and positive psychological variables (happiness, positive affect, mindfulness) that are known to moderate effects of stress on health.

Proposed method of data collection: Samples will be collected during low and high stress periods and assessed for virus DNA (known as shedding). Incidences will be examined alongside demographic variables including physical fitness, health behaviours and psychological variables.

Ethics approval needed? Yes

Ethics applied for? No

Is this already an existing project? No

Type of study: Quantitative

Resources needed (all available):

Additional information:

Supervisor contact details: kate.edwards@sydney.edu.au
Supervisor: Associate Professor Lee-Fay Low

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Besides the proposed project, I would encourage students to develop a research topic based on their interests - possible broad research topics are:
- arts and health for older people (e.g. dance, humour, music)
- older people from culturally and linguistically diverse (CALD) backgrounds
- nursing home residents (with and without dementia)
- people with dementia living alone
- carers of people with dementia
- grandparent carers
- control and autonomy and health in older people
- subjective age and health in older people

Project title: What are the perceptions of new health graduates on working in aged care?

Is this an existing project? No

Research question: This project will investigate the views of allied health and nursing undergraduate students and recent graduates on working in aged care.

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)

Research group type: Research Group based


Primary research interests:
- dementia
- Alzheimer’s disease
- positive psychology in older people
- carers of older people
- home and community care
- residential aged care
- restorative and reablement approaches
- arts in health

Chief investigator: Lee-Fay Low

Research team: Sonali Pinto (Catholic HealthCare)

Aims and background: The aged care workforce is ageing, and only a small proportion of staff have allied health training. This project will inform the university sector on how to better prepare graduates to work in aged care, as well as the aged care industry on how to better attract and support new graduates.
Proposed method of data collection: Interviews and written and online surveys
Ethics approval needed? Yes
Ethics applied for? No
Is this already an existing project? No
Type of study: Cross-sectional survey
Resources needed (all available): Catholic HealthCare are supporting this project and will facilitate access to new graduates working in their organisation.
Additional information:
Supervisor contact details: lee-fay.low@sydney.edu.au
**Supervisor:** Associate Professor Mark McEntee

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**
1. Optimisation of radiation dose in medical radiation science. This includes any techniques or technology, or process that can reduce the dose in examinations that use x-rays.

2. Breast cancer detection in mammography

**Project title:** Calculation of actual glandular dose in mammography.

**Is this an existing project?** Yes

**Research question:** How does the actual glandular dose in mammography differ from the mean Glandular dose?

**This project is appropriate for students in the following degree(s):**
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

**Research group type:** Discipline based


**Primary research interests:**
- Current research interests are wide ranging and mainly revolve around; Perception in Medical Imaging, Receiver Operating Characteristic analysis of performance, human performance and performance errors - particularly in medical imaging interpretation, as well as dose and image quality analysis. This research has the aim of improving radiological diagnostic performance.

In dosimetry he is involved in projects in CT Diagnostic Reference Levels and collective doses in Ireland, Portugal and in Malta.

**Chief investigator:** Mark McEntee

**Research team:** MIOPEG

**Aims and background**

Aiming to reduce breast cancer deaths, the Australian breast-screening program has targeted 50-69 year old Australian women since 1991 for biennial screening mammograms [2]. However, exposing healthy women to ionising radiation can add to the risk of inducing breast cancer. Therefore the dose to the breast must be kept as low as reasonably achievable [3]. Hence the introduction of Diagnostic Reference Levels (DRLs) provides a measure of quality control and optimisation to limit variation in dose among and within imaging centres; these levels are expected not to be exceeded for a standard diagnostic procedure when good and normal practice is applied. The International Commission of Radiation Protection defines DRLs as:
“A form of investigation level, applied to an easily measured quantity, usually the absorbed dose in air, or tissue-equivalent material, at the surface of a simple phantom or a representative patient.” [3]

The measurements of radiation dose to the breast have been performed using different approaches including total energy transmitted to the breast [4], mid-breast dose [5], air kerma [6], entrance surface dose [7], and the average dose absorbed by the glandular tissue [8]. The latter is now assumed to be the most effective quantity to reflect absorbed dose by the breast because the glandular tissue of the breast is most sensitive to ionising radiation [8].

Mean glandular dose (MGD), is now the recommended metric by several authorities such as the International Commission of Radiation Protection (ICRP) [9], the United States National Council on Radiation Protection and Measurements [10], the British Institute of Physics and Engineering in Medicine (IPEM) [11], the European Council Protocol (EP) [12-14], and the International Atomic Energy Agency (IAEA) [15]. MGD cannot be directly measured during an x-ray examination but can be estimated with certain standard assumptions and is calculated from conversions factors that have been established using Monte-Carlo techniques [16-26]; the estimation of MGD can be achieved using either a standard phantom or a representative patient.

Mean glandular dose estimates the dose to the patient’s breast based on the former that assumes the breast is 50% glandular. This method has been used for many years and has been very successful. However, modern automatic volumetric methods of breast density assessment are becoming increasingly common. The recent TOMMY trial in the UK compared the volumetric assessment of 2 systems Quattra and Volpara. this trial demonstrated that the actual grounds latte of the breast is much lower than is assumed in the mean glandular dose calculation. The Quattra method of assessment estimated the mean glandularity of the breast in the UK was 9.5% ranging from 1.4 to 56.2. The other method of assessment estimated the average as 7.7% ranging from 2.5 to 54.2. As that can be seen from these actual measures of glandularity using a mean of 50%, is hopelessly inaccurate. The proposed work is groundbreaking, and uses the most advanced tools, combined with "big data" to calculate the most accurate measure of radiation risk for women undergoing mammography and you are in the world.

**Proposed method of data collection**: Data has been collected for the mean glandular dose of women in Australia. A sample of these images will have their actual granularity measured. Using this actual glandularity a new action of glandular dose will be calculated.

The 1st stage of calculating this will be to measure the glandularity on the image. Several tools are available for doing this, student will use the most advanced software available at the time the project, most likely "auto density" or Volpara. this number will then be substituted into the calculation for mean
glandular dose and an actual glandular dose estimated.

This dose will then be calculated for a range of compressed breast thicknesses to give a realistic measure of the real radiation risk for women undergoing mammography in Australia.

**Ethics approval needed?** Yes

**Ethics applied for?** Yes

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Resources needed (all available):** The equipment needed for this project already exists

**Additional information:** You will work with the team of 2 senior academics and one Ph.D. student. Confident use of Excel would be a bonus, but not a necessity as training will be provided.

**Supervisor contact details:** mark.mcentee@sydney.edu.au
Supervisor: Associate Professor Mark McEntee

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:
1. Optimisation of radiation dose in medical radiation science. This includes any techniques or technology, or process that can reduce the dose in examinations that use x-rays.

2. Breast cancer detection in mammography

Project title: Accuracy of measured and reported does data during computed tomography

Is this an existing project? No

Research question: Is the dose information reported on the CT scanner accurate when compared to physically measured dose to the tissues and organs of a phantom?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/mark.mcentee.php

Primary research interests:
- Current research interests are wide ranging and mainly revolve around; Perception in Medical Imaging, Receiver Operating Characteristic analysis of performance, human performance and performance errors - particularly in medical imaging interpretation, as well as dose and image quality analysis. This research has the aim of improving radiological diagnostic performance.

In dosimetry he is involved in projects in CT Diagnostic Reference Levels and collective doses in Ireland, Portugal and in Malta.

Chief investigator: Mark McEntee

Research team: MIOPEG

Aims and background
This project aims to measure the dose to tissues and organs within an anthropomorphic phantom during a CT scan and compare those doses to those reported on the CT scanner itself.

The use of computed tomography in medicine is increasing. It is estimated that approximately 5% of all those received by the human population now has an origin from computed tomography. Recently, fears have been raised by publications in the British medical Journal that indicate an increase of 20% in the odds ratio for developing cancer as a result of one CT scan as a child.

In light of this it is increasingly important that we have accurate measurements of the dose received by
the patient. Previous work has demonstrated that the reported computer tomography dose index on the CT scanner itself may vary by as much as 5% from the actual calculator dose the Phantom.

**Proposed method of data collection:** This project would measure the actual dose using state-of-the-art dose meters, anthropomorphic phantoms that accurately simulates the organs and tissues of a human patient, and the 16 slice CT scan housed within the basement of medical radiation science.

The student would undertake exposures on the CT scanner and would be in charge of measurement of dosimetry. The measured doses would be compared to the displayed doses on the scanner.

Student would also investigate any causes of discrepancies between the measured an actual doses. During this project students would gain experience on the use of a modern CT scanner and would gain skills in dosimetry.

**Ethics approval needed?** No
**Ethics applied for?** No
**Is this already an existing project?** No

**Type of study:** Quantitative

**Resources needed (all available):** All the resources needed for this project are already in place.

**Additional information:** This project would give the student a large degree of autonomy. There would be no delays in the project as a result of waiting for ethical approval, and all of the equipment and skills needed to perform this work are already in place. The student would be working within a research team consisting of 3 academics, one Ph.D. student, and themselves.

**Supervisor contact details:** mark.mcentee@sydney.edu.au
Supervisor: Associate Professor Mark McEntee

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:
1. Optimisation of radiation dose in medical radiation science. This includes any techniques or technology, or process that can reduce the dose in examinations that use x-rays.

2. Breast cancer detection in mammography

Project title: International authorship productivity in diagnostic radiography

Is this an existing project? Yes

Research question: What is the level of diagnostic radiography productivity internationally? What are the driving factors for highly productive diagnostic radiography authors?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Discipline based


Primary research interests:
Current research interests are wide ranging and mainly revolve around; Perception in Medical Imaging, Receiver Operating Characteristic analysis of performance, human performance and performance errors - particularly in medical imaging interpretation, as well as dose and image quality analysis. This research has the aim of improving radiological diagnostic performance.

In dosimetry he is involved in projects in CT Diagnostic Reference Levels and collective doses in Ireland, Portugal and in Malta.

Chief investigator: Mark McEntee

Research team: MIOPEG

Aims and background
Evidence-based practice is an expectation of all health care professionals, and the unique knowledge base of a profession is established through research and synthesis and most commonly shared through peer-review publication. The number of peer review radiography journals has been increasing, and this bibliometric study aims to review the radiography profession in terms of these publications to explore the evidence base and identify its evolution internationally.
**Proposed method of data collection:** The proposed project will have 2 stages. Stage one will examine the literature on biblio metrics. The aim of the literature review will be to determine the best metrics for identifying productivity. Stage II will use and literature process to identify highly productive researchers and quantify their productivity using the identified metrics from stage I. Unlike previous research in this area, the publications will not be limited to those in diagnostic radiography journals, but will be open to all international peer-reviewed journals.

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Resources needed (all available):** No resources are space are needed for this project

**Additional information:** Some preliminary pilot data has already been collected for this project.

**Supervisor contact details:** mark.mcentee@sydney.edu.au
Supervisor: Doctor Merrolee Penman

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: A comparison of how supervising occupational therapists use the electronic SPEF-R (fieldwork evaluation) versus the paper version. Research in this area will contribute to demonstrating the validity of the evaluation tool.

Project title:

Is this an existing project? No

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/merrolee.penman.php

Primary research interests:
I am interested in research in work integrated learning, reflective practice, metacognition in allied health, learning styles, self-directed learning

Chief investigator:

Research team:

Aims and background:

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for? No

Is this already an existing project? No

Type of study: Mixed methods

Resources needed (all available): No specific requirements required. Students will be able to access all files electronically

Additional information: The University of Sydney has used the paper version of the SPEF-R since its development. We plan to move to the eSPEF-R version in 2015 when licensing agreements have been made. Currently the ways in which therapists complete the SPEF-R can vary enormously. The SPEF-R provides an electronic comment bank that can be adjusted by the supervisor. We are interested in evaluating whether with the use of the eSPEF-R whether supervisors continue to provide similar comments, or whether the quality of comments changes in some way. We are also interested in understanding how having electronic comment banks may aid supervisors in completing the SPEF-R.

Supervisor contact details: merrolee.penman@sydney.edu.au
Supervisor: Doctor Nicola Hancock

Is there a specific project available?

Is there a broad research topic/s for students to consider: Mental health recovery - learning from people living with mental illness.

Note, more specific details will be available closer to the starting date.

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/nicola.hancock.php

Primary research interests:
- Mental Health
- Occupational Therapy
- Qualitative and inclusive research methods

Chief investigator:

Research team:

Aims and background

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for? N/A

Is this already an existing project?

Type of study:

Resources needed (all available):

Additional information:

Supervisor contact details: nicola.hancock@sydney.edu.au
**Supervisor:** Doctor Ollie Jay

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**

**Project title:** Body temperature regulation during pregnancy

**Is this an existing project?** No

**Research question:** How is human body temperature regulation during physical activity in the heat altered during pregnancy?

**This project is appropriate for students in the following degree(s):**

- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours

**Research group type:** Research Group based


**Primary research interests:**

- Assessing and understanding thermoregulatory impairments in specific populations (e.g. children, MS patients, obese)
- Cooling/survival interventions for at-risk groups during heat waves
- Biothermal modeling
- Heat stroke prevention
- Pediatric temperature management
- The development of international standards

**Chief investigator:** Ollie Jay

**Research team:** Kate Edwards

**Aims and background**

Background: Doctors are currently unsure whether pregnant women are at greater risk of overheating during physical activity in the heat. Consequently, they are typically advised to avoid exertion during hot weather. However, no previous study has assessed the independent influence of pregnancy on human temperature regulation. This information will enable the development of safe exercise guidelines for pregnant women wishing to remain active and obtain the benefits of regular exercise.

**Aim:** To determine whether thermoregulatory capacity is altered at different stages throughout pregnancy.

**Proposed method of data collection:** Two groups of female participants will be recruited: one control group (CG) and one pregnant (PG) group (entering their 2nd trimester). They will exercise on a semi-recumbent ergometer for 30-min at a metabolic heat production of 5 W/kg of total body mass in a climatic chamber regulated at 32°C, 40%RH. The PG group will conduct a second visit at the end of their 2nd trimester. A total of 16 (8 CG, 8 PG) participants will be required. Core and skin temperatures, whole-
body sweat losses, as well as local sweat rate on the forearm, forehead and back will be measured throughout. Sweating efficiency will also be assessed.

**Ethics approval needed?** Yes

**Ethics applied for?**

**Is this already an existing project?** No

**Type of study:** Quantitative

**Resources needed (all available):** Resources needed (all available): Climatic chamber, indirect calorimetry, ventilated sweat capsule and thermometry data collection apparatus, body mass platform scale, cycle ergometer.

**Additional information:** You will be joining a vibrant research team in the Thermal Ergonomics Laboratory within the Integrative, Exercise and Environmental Physiology Research Group that consists of numerous research trainees of different levels (BSc, MSc, PhD and Post-doc)

**Supervisor contact details:** ollie.jay@sydney.edu.au
Supervisor: Doctor Ollie Jay

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Heat wave survival strategies

Is this an existing project? Yes

Research question: What is the most effective and cheap cooling strategy for vulnerable individuals exposed to a heat wave who do not have access to air conditioning?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Occupational Therapy) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

Research group type: Research Group based


Primary research interests:
- Primary research interests:
- Assessing and understanding thermoregulatory impairments in specific populations (e.g. children, MS patients, obese)
- Cooling/survival interventions for at-risk groups during heat waves
- Biothermal modeling
- Heat stroke prevention
- Pediatric temperature management
- The development of international standards

Chief investigator: Ollie Jay

Research team:

Aims and background

Background: Heat waves are becoming progressively hotter and longer. The most vulnerable include the elderly and those who cannot afford air conditioning. Moreover, the reliance on air conditioning places a massive burden on power demands that can sometimes not be sustained throughout a heat wave - often leading to a collapse of electricity supply with catastrophic health consequences (e.g. India - May, 2015).

Aim: To evaluate the efficacy of ecologically-valid, energy efficient and simple cooling interventions that can be used by those without access to air conditioning during heat waves.

Proposed method of data collection: One group of 8-10 female participants will be recruited. On four occasions, they will enter a climatic chamber regulated, twice at 45C, 10%RH, and twice at 45C and
45%RH. On all four occasions they will rest for 120-min. Within each environmental condition, once they will use a household fan to cool themselves, and the other occasion will be a control condition (no fan). Core and skin temperatures, heart rate, whole-body sweat losses, as well as local sweat rate on the forearm, forehead and back with be measured throughout.

**Ethics approval needed?** Yes

**Ethics applied for?** Yes

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Resources needed (all available):** Resources needed (all available): Climatic chamber, indirect calorimetry, ventilated sweat capsule and thermometry data collection apparatus, body mass platform scale.

**Additional information:** You will be joining a vibrant research team in the Thermal Ergonomics Laboratory within the Integrative, Exercise and Environmental Physiology Research Group that consists of numerous research trainees of different levels (BSc, MSc, PhD and Post-doc)

**Supervisor contact details:** ollie.jay@sydney.edu.au
Supervisor: Doctor Ollie Jay

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Human heat acclimation for sporting events in different environments

Is this an existing project? Yes

Research question: What are the best ways to heat acclimate an Australian athlete before they leave to compete in a country with different weather?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours

Research group type: Research Group based


Primary research interests:
- Assessing and understanding thermoregulatory impairments in specific populations (e.g. children, MS patients, obese)
- Cooling/survival interventions for at-risk groups during heat waves
- Biothermal modeling
- Heat stroke prevention
- Pediatric temperature management
- The development of international standards

Chief investigator: Ollie Jay

Research team:

Aims and background

Background: Many Australian athletes compete in various competitions overseas - often with different climates to those here. However, the best way to prepare these athletes for different environmental conditions is currently unknown.

Aim: To identify optimal heat acclimation strategies for athletes preparing to compete in different environmental conditions

Proposed method of data collection: Two groups of male or female participants (~8-10) will be recruited. They will all undergo a 10-day heat acclimation program, one group in a hot/dry (40C, 10%RH) environment, and the other group in a warm/humid (35C, 75%RH) environment. On Day 1, they will exercise on a semi-recumbent ergometer for 60-min at a metabolic heat production of 7 W/kg of total body mass. and core and skin temperatures, whole-body sweat losses, as well as local sweat rate on the forearm, forehead and back with be measured throughout. The same protocol will then be conducted on
Day 10 of the acclimation program, and the change in thermoregulatory responses will be compared between groups.

**Ethics approval needed?** Yes

**Ethics applied for?** Yes

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Resources needed (all available):** Resources needed (all available): Climatic chamber, indirect calorimetry, ventilated sweat capsule and thermometry data collection apparatus, body mass platform scale, cycle ergometer.

**Additional information:** You will be joining a vibrant research team in the Thermal Ergonomics Laboratory within the Integrative, Exercise and Environmental Physiology Research Group that consists of numerous research trainees of different levels (BSc, MSc, PhD and Post-doc)

**Supervisor contact details:** ollie.jay@sydney.edu.au
Supervisor: Doctor Ollie Jay

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Preventing Heat Exhaustion in Professional Tennis (able-bodied or wheelchair)

Is this an existing project? Yes

Research question: When is it too hot to stop playing tennis?

Which interventions can be used to keep to tennis players cool during extreme heat?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/ollie.jay.php

Primary research interests:
- Assessing and understanding thermoregulatory impairments in specific populations (e.g. children, MS patients, obese)
- Cooling/survival interventions for at-risk groups during heat waves
- Biothermal modeling
- Heat stroke prevention
- Pediatric temperature management
- The development of international standards

Chief investigator: Ollie Jay

Research team: Julien Periard - Aspetar, Qatar

Aims and background
The 2014 Australian Tennis Open was mired in controversy due to the adverse effect of extreme heat on the player health. On several occasions, players collapsed on court due to the effects of heat exhaustion. In the media, some prominent players expressed concern about the policies that were in place governing when play should be suspended due to the extreme heat. It transpired no robust extreme heat policy was in place, and the interventions that were being used on court to cool the players during matches have not been proven to be effective.

The aim of this project will be to assess the efficacy of the cooling interventions that are currently being used by professional tennis players during grand slam tournaments. Specifically, the influence of cold fluid ingestion, "ice-necklaces" and/or on-court electric fans will be assessed on body temperature, thermal perception and hydration status during simulated tennis play in a hot environment.
**Proposed method of data collection:** A group of 8-10 participants will exercise for 90-min at a metabolic rate that reflects competitive tennis activities in a climatic chamber regulated at 42°C, 10%RH (simulating peak 2014 Australian Open conditions).

Each participant will conduct two separate trials: one with a cooling intervention mentioned above, and one without. Core and skin temperatures, whole-body sweat losses, as well as local sweat rate on the forearm, forehead and back will be measured throughout. Thermal perception will also be assessed throughout.

**Ethics approval needed?** Yes

**Ethics applied for?** Yes

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Resources needed (all available):** Resources needed (all available): Climatic chamber, indirect calorimetry, ventilated sweat capsule and thermometry data collection apparatus, body mass platform scale, cycle ergometer.

**Additional information:** You will be joining a vibrant research team in the Thermal Ergonomics Laboratory within the Integrative, Exercise and Environmental Physiology Research Group that consists of numerous research trainees of different levels (BSc, MSc, PhD and Post-doc)

**Supervisor contact details:** ollie.jay@sydney.edu.au
Supervisor: Doctor Sanet du Toit

Is there a specific project available? No

Is there a broad research topic/s for students to consider: Research that focuses on supporting the occupational nature of older persons who are frail and vulnerable, especially those with advanced dementia who live in care settings

Project title:

Is this an existing project? Yes

Research question:

This project is appropriate for students in the following degree(s):

- Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Research Group based


Primary research interests: dementia care, culture change in long-term residential age care, implementation science, meaningful engagement associated with increased quality of life

Chief investigator:

Research team:

Aims and background

Proposed method of data collection: Scoping reviews

Ethics approval needed? No

Ethics applied for?

Is this already an existing project? Yes

Type of study: Mixed methods

Resources needed (all available):

Additional information:

Supervisor contact details: sanet.dutoit@sydney.edu.au
**Supervisor:** Doctor Sarah Dennis

**Is there a specific project available?** No

**Is there a broad research topic/s for students to consider:** Improving outcomes for people with multimorbidity

**Project title:**

**Is this an existing project?**

**Research question:**

**This project is appropriate for students in the following degree(s):**

- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Occupational Therapy) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Any discipline

**Research group type:** Research Group based


**Primary research interests:**

- Chronic disease prevention and management
- Self-management
- Health literacy

**Chief investigator:**

**Research team:**

**Aims and background**

**Proposed method of data collection:**

**Ethics approval needed?** No

**Ethics applied for?**

**Is this already an existing project?**

**Type of study:** Mixed methods

**Resources needed (all available):**

**Additional information:**

**Supervisor contact details:** sarah.dennis@sydney.edu.au
**Supervisor:** Doctor Sarah Dennis

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**

**Project title:** PIER: Physio Investigation and Examination Research

**Is this an existing project?** Yes

**Research question:** 1. To adapt the BEACH methodology and determine the feasibility for use in private physiotherapy practices in NSW.
2. To pilot the adapted methodology in a representative sample of private physiotherapy practices in NSW / TAS.
3. To describe the clinical practices of a sample of private physiotherapists in Australia.

**This project is appropriate for students in the following degree(s):**
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Physiotherapy) Honours

**Research group type:** Research Group based


**Primary research interests:**
- Management of chronic disease
- Self-management
- Prevention of chronic disease
- Health services research
- Qualitative and quantitative methods

**Chief investigator:** Sarah Dennis

**Research team:** A/Prof Helena Britt

**Aims and background**

Physiotherapists are one of the largest groups of allied health professionals in Australia. In 2012 there were 23,934 physiotherapists registered with the Australian Health Practitioner Regulation Agency (AHPRA) and of these 17,890 were working as clinicians (1). A large proportion (42%) of clinical physiotherapists work in private practice in Australia (1) and this figure was estimated to be even higher at 53.5% and between 2.9 and 7.8 times that of chiropractors and osteopaths respectively (2).

The Bettering the Evaluation and Care of Health (BEACH) study has been publishing reports on activity in general practice since 1998. The BEACH reports have provided powerful evidence of the uptake of best practices in general practice and have been used to inform policy in general practice. In 2012 it was estimated from private health insurance claims, that physiotherapists provide an average of 796 services per registered practitioner (2). There is very little research to describe the case mix of patients treated by physiotherapists in private practice. Adapting and building on the established BEACH methodology could
provide a powerful means of determining the types of conditions commonly managed and the types of treatments and referrals made in private physiotherapy practice.

**Proposed method of data collection:** A pilot study will be undertaken in a sample of Australian physiotherapists working in private practice (limit this to NSW and TAS, 5859 in NSW and 361 in TAS and assume 42% of these in private practice). There were approximately 7,617 physiotherapists working in private practice in 2012 (1). The chiropractor study had a response rate of 33% (4), to ensure a final sample of 100 physiotherapists invitations will be sent to 350 physiotherapists. Each physiotherapist will be asked to complete the Morbidity and Treatment Survey for 100 patient encounters. Descriptive statistics will be used to summarise the physiotherapist, patient and encounter characteristics. Reasons for encounter will be reported by ICPC chapter and physiotherapist identified problems and diagnoses reported by ICPC-2 PLUS terms. For each therapist we will identify those patients attending more than once during the 100 encounters. Estimates of the recorded encounters and 95% confidence intervals will be calculated. Physiotherapist characteristics will be compared with available national data.

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Resources needed (all available):**

**Additional information:** This project will involve researchers from the Family Medicine Research Unit (University of Sydney), University of Tasmania

**Supervisor contact details:** sarah.dennis@sydney.edu.au
**Supervisor:** Associate Professor Sarah Lewis

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:** How can we improve imaging of obese patients? How can we measure the effect of additional fat tissue on the necessary radiation dose to image the abdomen? What are the attitudes of student radiographers (and other health science students) towards obese patients? What is best practice in manual handling for obese patients?

**Project title:** Best practice in imaging obese patients: development of a pathway

**Is this an existing project?** Yes

**Research question:** Is there a pathway of best practice for imaging obese patients?

**This project is appropriate for students in the following degree(s):**
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

**Research group type:** Discipline based


**Primary research interests:**
- Breast Imaging
- CT Imaging
- Lung Cancer
- Obesity Imaging
- Emotional Intelligence
- Virtual Learning Environments

**Chief investigator:** Sarah Lewis

**Research team:** John Robinson

**Aims and background**
Obesity is a global health problem and a significant concern for medical imaging practitioners. Obese patients often have compromised diagnosis with poor imaging quality and require significantly higher radiation doses. This study aims to identify a best practice pathway for imaging obese patients requiring abdominal or chest imaging through thematic analysis of interviews with experienced radiographers.

**Proposed method of data collection:** Highly experienced radiographers will be interviewed to determine best practice techniques. A pathway will be developed and trialed with radiography students in a simulated environment.

**Ethics approval needed?** Yes

**Ethics applied for?** Yes

**Is this already an existing project?** Yes

**Type of study:** Mixed methods

**Resources needed (all available):** This project builds upon research conducted by previous honours students in 2014 and 2015. Ethics can be modified from the original submission. Students need to be
comfortable or interested in qualitative research as data collection will be via interview or focus groups. Students would likely need to travel to medical imaging departments within Sydney.

**Additional information:** This project builds upon research conducted by previous honours students in 2014 and 2015. It is a very interesting topic and can be adapted to other health sciences as well. There may also be variations of the project to allow for students in an appended or integrated Honours pathway.

**Supervisor contact details:** sarah.lewis@sydney.edu.au
Supervisor: Associate Professor Sarah Lewis

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: What is the true value of simulated learning in the medical radiation sciences?

Project title: Can students effectively learn core professional skills in radiation science from simulated or remote facilities?

Is this an existing project? No

Research question: Simulated learning is regarded as quality learning experiences but can students effectively learn core professional skills in radiation science from simulated or remote facilities?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/sarah.lewis.php

Primary research interests:
- Breast Imaging
- CT Imaging
- Lung Cancer
- Obesity Imaging
- Emotional Intelligence
- Visual search
- Virtual learning environments

Chief investigator: Sarah Lewis

Research team: Peter Kench, Patrick Brennan

Aims and background
This study aims to determine if radiation science students (namely Diagnostic Radiography) students can learn core imaging skills without actually having tactile experiences with equipment. This study will test if students are able to translate simulated, remotely acquired skills into actual competency when using real life equipment.

Proposed method of data collection: 100 DR students will be taught to use the NETRAD CT scanner (currently in M Block) via remote access and a three hour tutorial accessed through Blackboard. Students will also be surveyed about their experiences with the learning resource. 20 students will then be chosen randomly to use the scanner in real life and show what skills they have acquired.

Ethics approval needed? Yes

Ethics applied for? No

Is this already an existing project? No

Type of study: Mixed methods
Resources needed (all available): The honours student will be based at Lidcombe and will learn to operate the NETRAD CT scanner. A pre and post survey will be designed. Focus groups may also be used to explore students reactions to remote learning. All equipment is currently available.

Additional information: This study would suit a student that is interested in the science behind learning and teaching. The student would work closely with DR academic staff to measure the effect and perceived quality of simulated learning experiences.

Supervisor contact details: sarah.lewis@sydney.edu.au
**Supervisor:** Associate Professor Sarah Lewis  
**Is there a specific project available?** Yes  
**Is there a broad research topic/s for students to consider:**  
- Improving the detection of breast and lung cancer  
- Improving the experiences and imaging of obese patients  
- Student engagement with virtual learning environments  
**Project title:** The effect of monitor size and minimisation of imaging upon breast cancer detection.  
**Is this an existing project?** No  
**Research question:** Does the size of the monitor affect radiologists’ ability to detect breast cancers on mammography?  
**This project is appropriate for students in the following degree(s):**  
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours  
**Research group type:** Discipline based  
**Primary research interests:**  
- Breast Imaging  
- Visual Perception  
- Lung cancer  
- CT Imaging  
- Emotional Intelligence  
- Virtual learning environments  
- Obesity imaging  
**Chief investigator:** Sarah Lewis  
**Research team:** Warren Reed, Patrick Brennan, Claudia Mello-Thoms  
**Aims and background**  
Before mammography was digital, radiologists had access to both magnification and minimisation tools to assist with reporting screening mammograms. These days, with all mammograms displayed on large 5 MP monitors, the ability to reduce the size of the image is lost. This study aims to determine what is the benefit of providing a smaller additional monitor for breast radiologists in order to get a global assessment of the case. It also seeks to determine if visual search is compromised by larger monitors.  
**Proposed method of data collection:** 14 radiologists would read a test set of 100 cases. 7 would have the standard large 5MP monitors and 7 would also have a smaller monitor. The study would be conducted at the Brain Mind Center in Camperdown. Radiologists would be required to wear a head mounted eye tracker to analyse their visual search.  
**Ethics approval needed?** Yes  
**Ethics applied for?** Yes
Is this already an existing project? No

Type of study: Quantitative

Resources needed (all available): All equipment is currently available at the BMC.

Additional information: This study would suit an appended honours student. I have extensive experience in supervising Honours students. This project builds upon previous research by a PhD student and ethics can be modified to accommodate a new student.

Supervisor contact details: sarah.lewis@sydney.edu.au
Supervisor: Doctor Steve Cobley

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: International student experience within the Faculty of Health Sciences 'Best Practices' in supporting International Student Experience.

Project title: International student experience within the Faculty of Health Sciences 'Best Practices' in supporting International Student Experience.

Is this an existing project? No

Research question: None specifically identified.

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Any discipline

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/stephen.cobley.php

Primary research interests: Chief investigator: Steve Cobley Research team: Prof. Patrick Brenna

Aims and background
The Faculty of Health Sciences each year is welcoming a growing number of International Students. For both students and Faculty respectively, studying abroad and optimising their adjustment and supporting learning brings with it both opportunities and challenges. Considerate of these concerns, we aim to understand the experience of international students in an effort develop the international student experience.


Ethics approval needed? Yes

Ethics applied for? No

Is this already an existing project? No

Type of study: Mixed methods

Resources needed (all available): N/A

Additional information: N/A

Supervisor contact details: stephen.cobley@sydney.edu.au
Supervisor: Doctor Tatjana Seizova-Cajic

Is there a specific project available? Yes
Is there a broad research topic/s for students to consider: same as above

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):
  - Bachelor of Health Sciences (Honours)
  - Bachelor of Applied Science (Physiotherapy) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/tatjana.seizova-cajic.php

Primary research interests: human senses; touch; proprioception; multisensory integration

Chief investigator:

Research team:

Aims and background

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for?

Is this already an existing project?

Type of study:

Resources needed (all available):

Additional information:

Supervisor contact details: tatjana.seizova-cajic@sydney.edu.au
Supervisor: Associate Professor Tricia McCabe

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Early speech characteristics of children later diagnosed with childhood apraxia of speech

Is this an existing project? Yes

Research question: What are the preverbal speech characteristics of children later diagnosed with childhood apraxia of speech?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/tricia.mccabe.php

Primary research interests:
- Childhood apraxia of speech

Chief investigator: Tricia McCabe

Research team:

Aims and background
We want to describe the preverbal communication skills of children with Childhood Apraxia of Speech so that we can devise more effective screening and assessment tools for toddlers suspected of having CAS. This could lead to better early intervention and therefore reduce how the disorder affects children as they develop.

Proposed method of data collection: Parents of children who have participated in other CAS research will be asked for videos of their children when they were in the age range 9m to 3 years. These videos will be transcribed and the speech, language and gestural behaviours of the children described and correlated with their later speech output (from previous studies). We will be counting gestures, babbling, protowords and transcribing anything that sounds like speech.

Ethics approval needed? Yes

Ethics applied for? Yes

Is this already an existing project? Yes

Type of study: Quantitative

Resources needed (all available): Students need to have undertaken studies in linguistics, phonetics and child development to complete this project (e.g., hearing and speech major, education major).

Additional information:

Supervisor contact details: Tricia.mccabe@sydney.edu.au
**Supervisor:** Associate Professor Tricia McCabe

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**

**Project title:** Perception of prosody in normal and disordered speech by trained and untrained listeners

**Is this an existing project?** Yes

**Research question:**

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Speech Pathology) Honours

**Research group type:** Discipline based


**Primary research interests:**
- Childhood apraxia of speech
- Neurogenic speech disorders in adults and children
- Dyspraxia
- Dysarthria
- Phonology
- Speech development
- Ultrasound in speech pathology
- Voice disorders in adults and children
- Treatment of speech and voice disorders
- Speech pathology evidence based practice
- Speech pathology service delivery
- Acoustics
- Acoustic perception
- Prosody
- Motor speech disorders in adults and children
- Motor learning in speech pathology

**Chief investigator:** Tricia McCabe

**Research team:**

**Aims and background**

Speech pathologists are often required to make judgements of supra-segmental speech accuracy. This can include deciding if the speaker is too fast or slow, too high pitched or too low pitched, or in the case of people with prosodic impairments such as apraxia is the speaker smooth or staccato. This judgement of prosody appears to be difficult for untrained and inexperienced listeners and could be replaced by a computer program if we understood the parameters to include in the program. This
research will establish the upper and lower limits of the perception of smooth and staccato speech so that such a computer program can be developed for real time use by speech pathologists. It is also possible such a program could also be used by patients themselves in home practice through an app.

**Proposed method of data collection:** This research will be conducted as an experiment comparing different listener's perceptions of recorded speech. The student will use sound editing software to prepare speech samples. They will then use psychological experiment software to randomise samples and collect data using the internet. We anticipate at least 50 untrained listeners and trained listeners will complete the task.

**Ethics approval needed?** Yes

**Ethics applied for?** Yes

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Resources needed (all available):** Potential students need to have completed BIOS1163 Speech Science, CSCD1034 Linguistics and Phonetics and BACH2142 Cognitive Neuropsychology before starting this project.

**Additional information:**

**Supervisor contact details:** tricia.mccabe@sydney.edu.au

Faculty of Health Sciences
s153 cumberland campus, please email for an appointment
The University of Sydney
NSW 2006 Australia
Supervisor: Associate Professor Tricia McCabe

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Severe speech disorders in children - treatment and diagnosis

Project title: Treating more children with CAS more often.

Is this an existing project? Yes

Research question: Does an online training package for speech pathologists improve treatment for children with childhood apraxia of speech?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/tricia.mccabe.php

Primary research interests:
- Childhood apraxia of speech
- Neurogenic speech disorders in adults and children
- Dyspraxia
- Dysarthria
- Phonology
- Speech development
- Ultrasound in speech pathology
- Voice disorders in adults and children
- Treatment of speech and voice disorders
- Speech pathology evidence based practice
- Speech pathology service delivery
- Acoustics
- Acoustic perception
- Prosody
- Motor speech disorders in adults and children
- Motor learning in speech pathology

Chief investigator: Tricia McCabe

Research team:

Aims and background
Childhood apraxia of speech is a severe and persistent speech disorder which starts in early childhood. Our team at the Faculty of Health Sciences has developed an effective treatment for this disorder and
recently received funding to make an online training package so that speech pathology clinicians can learn how to deliver the training, regardless of where they live. The aim of the online training is to improve client access to the training and reduce clinician anxiety about implementing the new treatment. This project will evaluate the effectiveness of the website.

Proposed method of data collection: Online survey, analysis of interviews with speech pathologists. Quantitative and qualitative methods will be used.

Ethics approval needed? Yes
Ethics applied for? Yes
Is this already an existing project? Yes
Type of study: Mixed methods
Resources needed (all available):
Additional information:
Supervisor contact details: tricia.mccabe@sydney.edu.au
Supervisor: Doctor Warren Reed

Is there a specific project available? No

Is there a broad research topic/s for students to consider: Research in image perception

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Research Group based


Primary research interests: Medical Image optimisation and perception

Chief investigator:

Research team:

Aims and background

Proposed method of data collection:

Ethics approval needed? N/A

Ethics applied for?

Is this already an existing project?

Type of study:

Resources needed (all available):

Additional information:

Supervisor contact details: warren.reed@sydney.edu.au
**Supervisor:** Doctor Yu-Wei Chen

**Is there a specific project available?** No

**Is there a broad research topic/s for students to consider:**

**Project title:** Everyday experience in parents of children with autism spectrum disorder

**Is this an existing project?** No

**Research question:** How do the contexts of interacting with children with autism spectrum disorder associated with parents’ everyday experience?

**This project is appropriate for students in the following degree(s):**
- Bachelor of Applied Science (Occupational Therapy) Honours

**Research group type:** Discipline based

**University Profile:** http://sydney.edu.au/perl-bin/phlookup.cgi?type=people&name=Yu-Wei+Chen&title=&position=&department=&phone=&search=Search

**Primary research interests:**
- Disability, health functioning and quality of life
- Experience sampling
- Self-determined motivation and participation
- Quality of measurement

**Chief investigator:** Yu-Wei Chen

**Research team:** Sarah Wilkes-Gillan

**Aims and background**

Given the numerous potential challenges and daily stressors associated with parenting with children with autism spectrum disorder (ASD), parents of these children commonly experience increased stress or lowered confidence in their parenting role. Currently health professionals and researchers working with parents of children with ASD examine their experience caring for their children via retrospective and one-time reporting. However, thoughts and feelings are context-specific. Thus, identifying how the contexts of interacting with their children influence their experiences and feelings is crucial to inform the development of strategies targeting enhancement of parents’ wellbeing and the quality of the parent-child relationship. The aim of the study is to explore how ASD severity influences parents’ everyday experience during interaction with their children with ASD.

**Proposed method of data collection:** The study is a part of a larger project which investigates wellbeing of primary caregivers of children with ASD. The student involved in this study will recruit 10 primary caregivers of children with a formal diagnosis of ASD. All the children will be aged between 5 and 12 years. Experience sampling method, an ecological momentary assessment, will be used to collect the data regarding time use in everyday life. Social Communication Questionnaire will be used to examine
the levels of ASD severity. The data will be incorporated into the larger project and then analysed to explore the everyday experience of primary caregivers of children with ASD.

Ethics approval needed? Yes
Ethics applied for? No
Is this already an existing project? No
Type of study: Mixed methods

Resources needed (all available): iPod Touch (for data collection) provided by supervisor

Additional information: Dr Yu-Wei Chen's primary area of interest is quality of everyday life in people with and without disabilities using experience sampling methodology. He recently completed his PhD titled 'Everyday social experience in individuals with autism spectrum disorders'.

The study is a part of a larger project conducted at the University of Sydney (Dr Chen) and Australian Catholic University (Dr Sarah Wilkes-Gillan). Dr Chen will be the primary supervisor and Dr Wilkes-Gillan will be the associate supervisor. Both supervisors have a background of working with children with autism spectrum disorders and their families.

Supervisor contact details: yu-wei.chen@sydney.edu.au
Supervisor: Doctor Yu-Wei Chen
Is there a specific project available? No
Is there a broad research topic/s for students to consider:
Project title: Everyday time use in primary caregivers of children with autism spectrum disorder
Is this an existing project? No
Research question: How do primary caregivers of children with autism spectrum disorder use their time in their everyday life?
This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Occupational Therapy) Honours
Research group type: Discipline based
Primary research interests:
- Disability, health functioning and quality of life
- Experience sampling.
- Self-determined motivation and participation
- Quality of measurement

Chief investigator: Dr Yu-Wei Chen
Research team: Sarah Wilkes-Gillan
Aims and background
Given numerous potential challenges and daily stressors associated with parenting with children with autism spectrum disorder (ASD), parents of these children commonly experience increased parental stress and psychological distress. This may consequently impact their time spent in interacting with their children and their participation in activities for their own wellbeing such as spending time with friends and supportive others and engaging in leisure and fitness activities. However, little is known how primary caregivers of children with ASD spent time in their everyday life. Thus, the aim of the study is to explore what primary caregivers do in everyday life and who they mostly interact with. The information will support the development of strategies targeting enhancement of parents’ wellbeing and the quality of the parent-child relationship.

Proposed method of data collection: The study is a part of a larger project which investigates wellbeing of primary caregivers of children with ASD. The student involved in this study will recruit 10 primary caregivers of school-aged children with a formal diagnosis of ASD. All the children will be aged between 5 and 12 years. Experience sampling method, an ecological momentary assessment, will be used to collect the data regarding time use in everyday life. The data will be incorporated into the larger project and then analysed to explore the everyday time use of primary caregivers of children with ASD.
Ethics approval needed? Yes
Ethics applied for? No
Is this already an existing project? No
Type of study: Mixed methods
Resources needed (all available): iPod Touch (used for data collection) provided by supervisor

Additional information: Dr Yu-Wei Chen's primary area of interest is quality of everyday life in people with and without disabilities using experience sampling methodology. He recently completed his PhD titled 'Everyday social experience in individuals with autism spectrum disorders'.

The study is a part of a larger project conducted at the University of Sydney (Dr Chen) and Australian Catholic University (Dr Sarah Wilkes-Gillan). Dr Chen will be the primary supervisor and Dr Wilkes-Gillan will be the associate supervisor. Both supervisors have a background of working with children with autism spectrum disorders and their families.

Supervisor contact details: yu-wei.chen@sydney.edu.au
Supervisor: Doctor Zakia Hossain

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Breast cancer, Chronic disease and disability

Project title: Muslim migrant women's breast cancer screening project in Sydney

Is this an existing project? Yes

Research question: What factors influence a Muslim women's decision to carry out breast screening? Do the levels of clinical breast examination use and breast screening participation rates differ based on the level of Islamic practice among Muslim women? What are the barriers in utilization of clinical breast examination, mammography and breast self examination among the study population? To what extent does religion play the significant role in the use of breast screening practices among these women? What ways are screening practices of Muslim women influenced by difficulties in understanding health material?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Occupational Therapy) Honours
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/zakia.hossain.php

Primary research interests:
- Health sociology
- Women's health
- Breast cancer
- Chronic disease and disability (i.e, diabetes)
- Disadvantaged groups and health (indigenous health)
- Ethnicity and cross-cultural issue in health
- Health service provision and utilisation

Chief investigator: Dr Zakia Hossain

Research team: Professor Patrick Brennan, Dr Martin Mackey, Dr Sarah Lewis
Aims and background

Aims and background

Aim is to examine breast screening knowledge and participation rates among the Muslim ethnic group living in Sydney Metropolitan Area. Breast screening practices include breast self-exam, clinical breast examination such as mammogram, ultrasound and fine needle biopsy.

Proposed method of data collection: This is a cross-sectional study based on quantitative method. Participants eligible for the study include Muslim – born women of ethnic background in the Sydney Metropolitan area, of age 35 -50. Converted Muslims are not included in this study. Women, who ever diagnosed with breast cancer and are undergoing treatment, are not included in this study. Convenient sampling technique will be used in order to collect data from specific ethnic Muslim groups including Arabic, Middle East, African, Arabic, Bengali and Malaysian communities.

Sample (size, power calculations): A total sample of 200 CALD women will be recruited using convenience sample for the purpose of the study. Power analysis using Cohen’s formula (1988) indicated that a sample of 200 would give an 80% chance of detecting correlation of ±.223 at < .01 level.

Ethics approval needed? Yes

Ethics applied for? Yes

Is this already an existing project? Yes

Type of study: Quantitative

Cross-sectional study

Resources needed (all available):

- Access to computer and SPSS software, library resources
- Space: External location as specified above (Migrant resource Centers); Auburn Diversity centre, on-campus work including data analysis can be conducted in computer lab (B112).

Any additional information: The current project is to collect more data and make a comparative analysis between Muslim women from different part of Asia, Middle East regions. This will provide understanding of religious and cultural variations in breast screening practices among the selected women.

Supervisor contact details: 61 2 9351 9340 / zakia.hossain@sydney.edu.au
**Supervisor:** Dr Emma Power

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**

**Project title:** Current stroke communication partner training programs and their comparison with the published research evidence base.

**Is this an existing project?** No

**Research question:** What is the nature of currently used hospital based communication partner training programs (for family and health professionals) delivered in hospital stroke units and how well do they compare with the published research evidence?

**This project is appropriate for students in the following degree(s):**
- Bachelor of Applied Science (Speech Pathology) Honours

**Research group type:** Discipline based

**University Profile:** [http://sydney.edu.au/health-sciences/about/people/profiles/emma.power.php](http://sydney.edu.au/health-sciences/about/people/profiles/emma.power.php)

**Primary research interests:**
- I have expertise in my clinically oriented research that aims to improve the ability of people with aphasia and cognitive-communication impairments following stroke, brain injury and disease (e.g., dementia), to successfully participate in everyday life situations. Aphasia results from damage to the language centres of the brain (difficulty speaking writing, reading and understanding) while cognitive communicative difficulties following brain injury (e.g., car accidents) and disease (dementia) can affect high level language and social communication skills. Other people (e.g., family, health professionals) need help to communicate with people with these difficulties and to maximize their recovery. This is called communication partner training and is the focus of much of my research. I also have expertise in evidence based practice and implementation science (do we do evidenced based practice in hospitals? If not why not? And how can we best transfer evidence into policy and practice). I am researching in these areas too.

I have experience in both quantitative (e.g., Surveys, systematic reviews) and qualitative research methodologies (interviews and focus groups).

**Chief investigator:** Dr Emma Power

**Research team:** Associate supervisors will come from other universities and health services in Australia

**Aims and background**

Communication partner training is an evidenced-based treatment for people with aphasia post stroke. However, while National Stroke Foundation audits indicate that this training is completed for the majority of people post stroke, the audit is very simple (Yes, No based on file progress entry) and it is not clear what is offered for family and health professionals and whether what is implemented IS based on evidence (e.g., dosage, core content, materials, theory etc). It is also possible that training programs on
Current stroke communication partner training programs and their comparison with the published research evidence base.

The ground’ are not strongly evidenced based because the research evidence does not match their clinical needs and population. Knowing about what clinicians have developed for their populations might also lead to new partner training programs that could be trialled for the efficacy AND also be more suitable for the stroke unit environment (and therefore actually used!).

Proposed method of data collection: We propose to survey speech pathologists working in stroke units on their practice and obtain a copy of their training materials so as to determine the degree to which these programs match evidence based programs and what are the core common and different features of those programs sampled.

We expect to use content analysis to group these features. Ethics approval will be sought before the project commences.

Ethics approval needed? Yes
Ethics applied for? No
Is this already an existing project? No
Type of study: Mixed methods
Resources needed (all available): Computer access and desk space is required. Potentially access to survey monkey. No other resources are needed.

Additional information: This project is part of ongoing work done by a group of researchers interested in aphasia rehabilitation. We recently published an important research article in BMJOpen (Power et al., 2015; http://bmjopen.bmj.com/content/5/7/e007641 ) that contains evidence including that for communication partner training. CPT is a key area of clinical practice i nadult (and child) settings, so offers a clinically relevant research experience.

Supervisor contact details: emma.power@sydney.edu.au
Supervisor: Dr Emma Power

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Inclusion of theoretical principles in published communication partner training programs across aphasia, traumatic brain injury and dementia.

Is this an existing project? No

Research question: To what degree are theoretical principles used to underpin published evidence-based communication partner training programs across the aphasia, TBI and dementia literature. Are there any common underlying theoretical assumptions?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/emma.power.php

Primary research interests:
- I have expertise in my clinically oriented research that aims to improve the ability of people with aphasia and cognitive-communication impairments following stroke, brain injury and disease (e.g., dementia), to successfully participate in everyday life situations. Aphasia results from damage to the language centres of the brain (difficulty speaking writing, reading and understanding) while cognitive communicative difficulties following brain injury (e.g., car accidents) and disease (dementia) can affect high level language and social communication skills. Other people (e.g., family, health professionals) need help to communicate with people with these difficulties and to maximise their recovery. This is called communication partner training and is the focus of much of my research. I also have expertise in evidence based practice and implementation science (do we do evidence based practice in hospitals? If not why not? And how can we best transfer evidence into policy and practice). I am researching in these areas too.

I have experience in both quantitative (e.g., Surveys, systematic reviews) and qualitative research methodologies (interviews and focus groups).

Chief investigator: Dr Emma Power

Research team: Associate supervisors will come from other universities and health services in Australia

Aims and background

Communication partner training (CPT) is an evidenced-based treatment for people with aphasia post stroke, in traumatic brain injury and dementia. CPT is important because family and health professionals need help to converse with and meet clients health needs. One reason is that family members and professionals change the way they talk with loved ones and clients including over simplified language,
patronising tone of voice, not giving the person enough time to talk, not valuing their opinion. These types of communication interactions generally make the client feel bad or disempowered and the family and health professionals find the interaction unrewarding/less successful.

While each CPT targets a different population (stroke, TBI, dementia), not all services see such distinctive division in their clients who may present with more than one, or the clients may occupy a ward where health professionals need efficient training options that cover a range of areas rather than extensive programs for one aetiology. Some communication partner training programs for TBI last for a total of 30 hours, while some aphasia programs, a day, and a dementia program, 45 minutes. While it is possible that some elements of CPT need to cover distinct aspects of the individual disorders, there may be significant overlap in content if we assume that there may be a unifying theoretical understanding of how partners ‘accommodate’ (overcompensate) their loved one/client. We need to understand the nature of the theoretical underpinnings of published research across these different populations and consider the common and different elements across the studies. We may then be able to compare this with more broad-based theories of accommodation to allow a common set of training principles along with smaller population specific elements, allowing for more efficient training potentially saving the health system dollars/resources.

Proposed method of data collection: Systematic review of the research literature (across databases, e.g. Medline, Cinahl) and content analysis of theoretical principles used across studies to determine the degree to which these programs use theory and what the consistent and different characterises of that theory are present across populations.

Ethics approval needed? No
Ethics applied for? N/A
Is this already an existing project? No
Type of study: Mixed methods
Resources needed (all available): Computer access and desk space is required.

Additional information: This project is part of ongoing work done by a group of researchers interested in aphasia rehabilitation. We recently published an important research article in BMJOpen (Power et al., 2015; http://bmjopen.bmj.com/content/5/7/e007641 ) that contains evidence including that for communication partner training.

Supervisor contact details: emma.power@sydney.edu.au
Supervisor: Dr Kimberley Docking

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:


Is this an existing project? Yes

Research question:

This project is appropriate for students in the following degree(s):

- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline Based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/kimberley.docking.php

Primary research interests:

- Child language
- Childhood brain injury

Chief investigator: Dr Kimberley Docking

Research team: Dr Natalie Munro, Prof Leanne Togher

Aims and background

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for? Yes Type of study: Quantitative

Resources needed (all available):

Specific requirements: Students should have an interest in child language development and have completed the appropriate relevant units of study in the Bachelor of Applied Science (Speech Pathology) degree.

Additional information: This project will be co-supervised by Dr Kimberley Docking and Dr Natalie Munro.

Students will have the opportunity to collect data where relevant/appropriate, discuss and analyse data, and engage with other Honours students, Higher Degree Research students, and international experts in the wider team in the Kids Talk lab within the Discipline of Speech Pathology. Involvement in this project is also likely to provide the opportunity to interact with clinical speech pathology researchers at The Children's Hospital Westmead.

Supervisor contact details: Kimberley.docking@sydney.edu.au
**Supervisor:** Professor Leanne Togher

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**

**Project title:** Conversation topics following severe traumatic brain injury: A study at 2 years post injury.

**Is this an existing project?** Yes

**Research question:** What is the nature of conversation topics between people with severe traumatic brain injury (TBI) and their communication partners at 2 years post injury?

How are conversations between people with severe TBI and their communication partners managed at 2 years post injury?

**This project is appropriate for students in the following degree(s):**

- Bachelor of Applied Science (Speech Pathology) Honours

**Research group type:** Research Group based

**University Profile:** [http://sydney.edu.au/health_sciences/staff/leanne_togher](http://sydney.edu.au/health_sciences/staff/leanne_togher)

**Primary research interests:**

- Communication outcomes following Traumatic Brain Injury TBI
- Assessment and Intervention approaches following TBI
- Chief Investigator, NHMRC Clinical Centre of Research Excellence in Aphasia Rehabilitation & NHMRC Centre of Research Excellence in Brain Recovery.

**Chief investigator:** Leanne Togher

**Research team:** Belinda Kenny, Emma Power

**Aims and background**

This project aims to investigate the nature and frequency of conversation topics discussed by people with severe TBI and their communication partners at 2 years post-injury.

TBI can lead to long term and debilitating communication difficulties, especially in the area of conversational discourse.

Problems conveying content and impaired topic management (i.e. introduction and maintenance of topics in a conversation) are the most consistently observed deficits in conversational discourse following TBI. People with TBI are typically perceived to have less rewarding conversations compared with non injured peers. Conversational skills may have impacts upon interactions at home and work and
contribute longer term to maintenance of personal and professional relationships. This study will identify specific features of conversational discourse that may be addressed in communication partner training or intervention for conversational discourse.

**Proposed method of data collection:** This study is part of an NHMRC funded project grant investigating longitudinal communication outcomes for adults with severe TBI. Approx. 20 participants will be included in the conversation research. Data, comprising 10 minute casual conversation samples, has already been collected. Consistent with a qualitative descriptive approach, recorded conversational samples will be transcribed and topic analysis will determine the macrostructure and organisation of conversations and frequency of topics introduced by participants with TBI and their communication partners. Thematic analysis will explore the nature of these conversational interactions. Findings may be compared with an earlier study to determine whether conversational patterns and themes observed during sub acute recovery are maintained at 2 years post injury.

**Ethics approval needed?** No  
**Ethics applied for?** Yes  
**Is this already an existing project?** Yes  
**Type of study:** Qualitative  
**Resources needed (all available):** Computer access, headphones and desk space is required. No other resources are needed.  
**Additional information:** The honours student will join a research team with expertise in TBI and significant supervisory experience.  
**Supervisor contact details:** leanne.togher@sydney.edu.au
Supervisor: Professor Leanne Togher
Is there a specific project available? Yes
Is there a broad research topic/s for students to consider:
Project title: Verbal reasoning, cognitive skills and return to work outcomes for adults with severe traumatic brain injury 2 years post injury.
Is this an existing project? Yes
Research question: Do verbal reasoning skills underpin job stability outcomes at 2 years post injury for adults with severe traumatic brain injury?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Speech Pathology) Honours
Research group type: Research Group based
University Profile: http://sydney.edu.au/health_sciences/staff/leanne_togher

Primary research interests:
- Communication outcomes following Traumatic Brain Injury TBI)
- Assessment and Intervention approaches following TBI
- Chief Investigator, NHMRC Clinical Centre of Research Excellence in Aphasia Rehabilitation & NHMRC Centre of Research Excellence in Brain Recovery.

Chief investigator: Leanne Togher
Research team: Emma Power, Belinda Kenny

Aims and background
This study aims to explore correlations between the FAVRES test of complex verbal reasoning skills and reported job stability outcomes at 2 years post injury. Work status impacts upon the quality of life of an individual and has economic impacts for the wider community. Hence, returning to work and maintaining employment are a major focus of brain injury rehabilitation programs. Successful participation in vocational activities may be affected by cognitive communication impairments arising from TBI, including impairments in verbal reasoning and executive functioning, memory, attention and speed of thinking. These impairments may underpin the difficulties people with TBI experience in meeting the communication demands of work settings. Yet the complex relationship between verbal reasoning, cognitive abilities and work outcomes are not fully understood.

The Functional Assessment of Verbal Reasoning and Executive Strategies (FAVRES) is an ecologically based assessment tool that requires individuals to reason through every-day problem situations (MacDonald & Johnson, 2005). The aim of this project is to understand how performance on the FAVRES underlies work outcomes 2 years after TBI.

This project will explore the relationship between verbal reasoning (assessed with the FAVRES),
cognitive skills (assessed with neuropsychological tasks) and reported work outcomes.

**Proposed method of data collection:** This project will involve examining the relationship between test performance on the FAVRES and neuropsychological measures with work outcomes. Data has already been collected for this project. Participants (approx n=40) from three Sydney Brain Injury Rehabilitation Units have been assessed over the first two years following their injury. Data includes test scores and qualitative responses to test items of the FAVRES, neuropsychological test scores and self-reported data regarding employment status. Data analysis will include primarily correlational analyses of quantitative data (i.e., test scores).

**Ethics approval needed?** No

**Ethics applied for?** Yes

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Resources needed (all available):** Student will need access to a computer and work space.

**Additional information:** This project is part of an NHMRC project that is investigating communication recovery and outcomes following severe TBI. The student will join an experienced supervisory team.

**Supervisor contact details:** leanne.togher@sydney.edu.au
**Supervisor:** Dr Paulo Ferreira

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:** Low back pain. The use of videogame exercises in the treatment of back pain. Genetics or environmental risk factors for back pain. What types of physical activities cause or prevent low back pain. The efficacy of a sleep intervention to treat chronic low back pain.

**Project title:** Low back pain. The use of videogame exercises in the treatment of back pain. Genetics or environmental risk factors for back pain. What types of physical activities cause or prevent low back pain. The efficacy of a sleep intervention to treat chronic low back pain.

**Is this an existing project?** Yes

**Research question:** To investigate the most effective treatments or risk factors for back pain.

**This project is appropriate for students in the following degree(s):**
- Bachelor of Health Sciences (Honours), Bachelor of Applied Science (Exercise and Sport Science) Honours, Bachelor of Applied Science (Physiotherapy) Honours

**Research group type:** Discipline based


**Primary research interests:**
- Musculoskeletal research
- Low back pain

**Chief investigator:** Dr Paulo Ferreira

**Research team:** Back Pain Research Group

**Aims and background**

**Proposed method of data collection:** Randomized controlled trials and Observational studies.

**Ethics approval needed?** No

**Ethics applied for?** Yes

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Resources needed (all available):**

**Additional information:**

**Supervisor contact details:** Paulo.ferreira@sydney.edu.au
Supervisor: Associate Professor Tricia McCabe

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Using health consumers as teachers: What do students think and learn?

Is this an existing project? No

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)

Research group type: Discipline based


Primary research interests:

Chief investigator: Tricia McCabe

Research team: Consumer Participation Working Group

Aims and background

Currently the faculty encourages lecturers to include health service users (aka consumers) in their teaching to provide students with real examples of the issues faced by people in managing their health and disabilities. We do not know what students think about this kind of teaching or how it enhances their learning. This project will contribute to the scholarship of learning and teaching in allied health education.

Proposed method of data collection: This research will use qualitative methods such as focus groups and/or surveys of students to examine the value of health service user teaching.

Ethics approval needed? Yes

Ethics applied for? No

Is this already an existing project? No

Type of study: Qualitative

Resources needed (all available):

Additional information: Other supervisors will include Nicola Hancock and Martin Mackey.

Supervisor contact details: tricia.mccabe@sydney.edu.au
Supervisor: Dr Zoe McKeough

Is there a specific project available? No

Is there a broad research topic/s for students to consider: Research in physical activity and sedentary behaviour in people with COPD.

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Physiotherapy) Honours

Research group type: Discipline Based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/zoe.mckeough.php

Primary research interests:
- Respiratory Disease
- Exercise
- Exercise training
- Physical activity
- Sedentary behaviour

Chief investigator:

Research team:

Aims and background

Proposed method of data collection:

Ethics approval needed? N/A

Ethics applied for?

Type of study:

Resources needed (all available):

Additional information:

Supervisor contact details: Zoe.mckeough@sydney.edu.au
Supervisors: Dr Andy Smidt & Dr Rebecca Barton

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: The impact on the family of a person with Down Syndrome of non-invasive prenatal testing for Down Syndrome; A qualitative study

Is this an existing project? No

Research question: This study would investigate the attitudes of parents of children with Down Syndrome and siblings of children with Down Syndrome regarding newer prenatal testing and the impact this has on their relationship with their child/sibling. This study will involve qualitative analysis of indepth interviews to contribute to existing research about this topic.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Occupational Therapy) Honours
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/andy.smidt.php

Primary research interests:
- Augmentative Communication
- Lifelong Disability

Chief investigator: Andy Smidt

Research team: Rebecca Barton

Aims and background
The current prevalence of Down Syndrome is Australia is 1:1150 live births. Non invasive prenatal testing is becoming common practice in Australia and it is estimated that between 67% and 92% of women who find out they are pregnant with a baby with down syndrome terminate the pregnancy (Natoli, Ackerman, McDermott, & Edwards, 2012)

The increase in non-invasive prenatal testing results in increased terminations of pregnancies where the foetus has Down syndrome (Kellogg, Slattery, Hudgins, & Ormond, 2014). An earlier study by Korenromp, Page-Christiaens, van de Bout, Mulder, and Visser (2007) explored the decisions of women who had terminated their pregnancy due to Down syndrome and found that 63% of women (N=71) reported that they did not want a disabled child. 83% of women held a belief that having a child with Down syndrome would be a burden for the prospective child and 73% worried about the burden on the their other children with 64% considering the burden on themselves (Korenromp et al., 2007)

Conversely, a number of studies report on the positive impact on the family of having a child with Down
Syndrome (King, Batorowicz, & Shepherd, 2008; Lalvani, 2011; Taunt & Hastings, 2002)

**Proposed method of data collection:** Qualitative interviewing of family members of a person with DS. The aim will be to carry out in-depth interviews with family members and analyse them using a range of qualitative methods.

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Is this already an existing project?** No

**Type of study:** Qualitative

**Resources needed (all available):** This project is suitable for 2 students. We are seeking one OT student and one Speech Pathology student to work in a collaborative way.

**Additional information:** This study is in a suggested format at this point. We are open to discuss and revise the project based on a preliminary literature review. This study is highly topical at the present time given the changes in prenatal testing and the societal reactions to people with disability. Early research in the field has identified a number of factors and our study will consider these within an Australian population. Note that two students are required for this project – one from Speech Pathology and one from Occupational Therapy if possible.

**Supervisor contact details:** andy.smidt@sydney.edu.au
Supervisor: Dr Elise Baker

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: No.

Project title: Do adults and children perceive different speakers in the same way?

Is this an existing project? No

Research question: Do adults and children (including children with typically developing speech, and children with speech sound disorder) perceive different speakers (males and females; adults and children; speakers with typical speech and speakers with speech sound disorder) in the same way, in a single-word speech perception task?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/elise.baker.php

Primary research interests:
Speech sound disorders; interaction between the phonological and lexical systems in word learning, evidence-based practice.

Chief investigator: Dr. Elise Baker

Research team: Dr. Natalie Munro

Aims and background
To perceive speech, listeners need to be able to transform an acoustic signal into meaningful speech. Listeners also need perceive the same word spoken by people of different ages, genders and abilities, that is, they need to cope with speaker variance. Research suggests that children who have a speech sound disorder can struggle with speech perception, specifically the perception of phonemes in words. If we are to better understand the nature of their difficulty, we need further insight into how much of this difficulty is simply related to development versus a generic underlying difficulty.

Proposed method of data collection: The data has been collected for the children with typical speech and the children with speech sound disorder. Data has been collected for female adult speakers. This project will continue with the task of data collection, (recruiting and testing 20 adult male speakers), followed by analysis of the entire data set. The analysis will involve descriptive and inferential statistics on listeners speech perception accuracy on a single-word lexical judgement task.

Ethics approval needed? Yes

Ethics applied for? Yes

Is this already an existing project? No

Type of study: Quantitative
Resources needed (all available): The student will need a computer and access to SPSS. They will also need to use clinical space in the Communication Disorders Treatment and Research (CDTRC) clinic, specifically Kids Talk Lab.

Additional information: Dr's Baker and Munro are experienced researchers and supervisors.

Supervisor contact details: elise.baker@sydney.edu.au
Supervisor: Dr Elizabeth Murray

Is there a specific project available? No (your name and research interest will be made available to students)

Is there a broad research topic/s for students to consider: Ideas are open to student suggestions but include:
- research in sensitive measures to facilitate diagnosis of childhood apraxia of speech;
- clinical, perceptual rating of dysprosody;
- facilitating response generalisation and/or long-term outcomes for children with childhood apraxia of speech.

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/elizabeth.murray.php

Primary research interests:
- assessment and differential diagnosis of childhood apraxia of speech, phonological impairment and other paediatric speech sound disorders
- efficacious treatment of childhood apraxia of speech and other paediatric speech sound disorders
- determining gene anomalies and phenotype relationships in speech sound disorders
- motor speech theory and how it relates to knowledge of motor speech disorders and clinical practice
- evidence-based practice
- translating evidence into clinical practice / knowledge translation

Chief investigator:

Research team:

Aims and background:

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for?

Is this already an existing project?

Type of study:

Resources needed (all available): Additional information: The potential projects are related to my PhD research on treatment efficacy for children with childhood apraxia of speech (CAS). This involved a systematic review of the treatment evidence, a differential diagnosis study aiming to determine clinically replicable measures for diagnosis of
CAS versus similar presenting disorders and a world-first randomised control trial comparing Rapid Syllable Transition Treatment to the Nuffield Dyspraxia Programme - 3rd edition. Depending on the student's interest and topic, I would engage other associate supervisors and collaborators from the multiple teams I work within.

Supervisor contact details: elizabeth.murray@sydney.edu.au
Supervisor: Associate Professor Emmanuel Stamatakis

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Research on the effect of incidental (non-structured) physical activity and any aspects of physical or mental health

Project title: A Physical Activity-promoting and Sedentary Behaviour-reducing trial to reduce progression of Mild Cognitive Impairment

Is this an existing project? Yes

Research question: What is the most effective way to increase Physical Activity and reduce Sedentary Behaviour among people aged 55-75 years with mild Mild Cognitive Impairment? What is the feasibility of administering three different types of Physical Activity and Sedentary Behaviour measurements in this population: questionnaire-based; objective time-stamped (accelerometers); objective step-counting (pedometers). What is the effectiveness of a lifestyle physical activity

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise Physiology) Honours
- Bachelor of Applied Science (Physiotherapy) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/emmanuel.stamatakis.php

Primary research interests:
Physical activity, exercise, sedentary behaviour, cardiovascular health, metabolic health, public health, obesity, epidemiology, mental wellbeing

Chief investigator: Professor Vicky Flood

Research team: Emmanuel Stamatakis

Aims and background
In Australia, approximately 278,000 people were effected by dementia in 2012 and it has been estimated that approximately 1 million people will be effected by dementia by 2050. Epidemiological data provides promising findings about nutrition and physical activity in relation to the potential to reduce risk for cognitive decline, although results are inconsistent, and there have been very few randomised controlled trials (RCTs). Given this paucity of trials which have investigated diet and physical activity together, the proposed pilot study seeks to assess the feasibility of key methodological aspects of a larger RCT that will investigate the potential benefits a combined physical activity and Mediterranean-style diet
intervention on patients with early signs and symptoms of MCI. The proposed Honours project will primarily tackle the physical activity and sedentary behaviour aspects of the pilot study but there may also be opportunities for involvement in the dietary part of the broader pilot research project.

Proposed method of data collection: A pilot study to assess the feasibility and compliance of a 16 week intervention comprising diet and physical activity promotion/sedentary behaviour reduction among 85 participants aged 55 – 75 years, who suffer from Mild Cognitive Impairment. Recruitment will be arranged by the study Investigators and will be done through clinics in several hospitals from the Sydney areas.

The proposed Honours project will involve:
- Collecting and analysing physical activity/sedentary behaviour data using objective and questionnaire-based methods
- Contributing to individual physical activity and sedentary behaviour consultations (individualised and group sessions)

Ethics approval needed? Yes
Ethics applied for? No
Type of study: Quantitative

Resources needed (all available): The Investigators have arrangements in place for acquiring all necessary equipment. There is the option for the successful Honours applicant to be based at Charles Perkins Centre with the supervisor of this project (ES) where desk space has already been allocated.

Additional information:
Supervisor contact details: emmanuel.stamatakis@sydney.edu.au / 432704690
Supervisor: Associate Professor Emmanuel Stamatakis

Is there a specific project available? Yes

Is there a broad research topic(s) for students to consider: Research on the effect of incidental (non-structured) physical activity and any aspects of physical or mental health

Project title: Does habitual stair climbing during work hours improve cardiorespiratory fitness and circulating lipid profiles of sedentary office workers?

Is this an existing project? Yes

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise Physiology) Honours
- Bachelor of Applied Science (Physiotherapy) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/emmanuel.stamatakis.php

Primary research interests:
Physical activity, exercise, sedentary behaviour, cardiovascular health, metabolic health, public health, obesity, epidemiology, mental wellbeing

Chief investigator:

Research team: Dr Kate Edwards, Associate Professor Corinne Caillaud

Aims and background:
The proposed research project will examine if replacing elevator trips with habitual stair climbing during work hours can improve cardiorespiratory fitness and blood lipid profiles over a period of 8-10 weeks. It is well-established that physical activity and exercise have multiple cardio-protective and general health benefits. Stair climbing is one of the very few incidental every-day physical activities that can reach vigorous intensity. However, there is very scant evidence on the effects of sporadic stair climbing bouts on cardiovascular health parameters in general and no study has examined if replacing elevator trips with stairs during work hours can improve cardiorespiratory fitness and lipids profiles among sedentary office workers.

Data collection for this project will take place at Charles Perkins Centre and other Camperdown University of Sydney buildings.
Proposed method of data collection:
Ethics approval needed? Yes
Ethics applied for? No Type of study: Quantitative Resources needed (all available): Additional information:

Supervisor contact details: emmanuel.stamatakis@sydney.edu.au / 432704690
Supervisor: Associate Professor Emmanuel Stamatakis

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Research on the effect of incidental (non-structured) physical activity and any aspects of physical or mental health

Project title: Does moderate and vigorous physical activity and exercise modify the acute and short-term cardiometabolic effects of prolonged sitting?

Is this an existing project? Yes

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise Physiology) Honours
- Bachelor of Applied Science (Physiotherapy) Honours

Research group type: Research Group based


Primary research interests:
Physical activity, exercise, sedentary behaviour, cardiovascular health, metabolic health, public health, obesity, epidemiology, mental wellbeing

Chief investigator: Associate Professor Emmanuel Stamatakis

Research team: A/Professor Corinne Caillaud, Dr Kate Edwards, Professor Adrian Bauman

Aims and background:
Prolonged sitting is a typical characteristic of modern lifestyles that is linked to deterioration of metabolic markers both acutely, in the short-term, and in the long term. The proposed research project will examine how a bout of moderate/ vigorous physical activity and exercise modify the effects of prolonged sitting on cardiometabolic markers.
Prolonged sitting is an emerging risk factor for cardiometabolic disease. It is often suggested that the pathways through which sitting affects cardiometabolic parameters are independent to the mechanisms through which physical activity exerts its benefits. The evidence supporting this hypothesis is weak. The proposed research project will examine whether bouts of physical activity (upper end of moderate intensity and vigorous intensity) moderate any effects that prolonged sitting has on markers of cardiometabolic health. This project consists of a number of sub-projects and will look at different age groups (young adults, middle age adults and older adults). The focus will be primarily on metabolic outcomes, such as post-prandial glucose and insulin, but several hemodynamic, haemostatic and lipid-related...
outcomes that are linked to prolonged sitting and physical activity will also be examined. Depending on the direction and preferences of the student, this project may also involve epidemiological work elements.

**Proposed method of data collection:**

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Type of study:** Quantitative

**Resources needed (all available):** Additional

**Information:**

**Supervisor contact details:** emmanuel.stamatakis@sydney.edu.au / 432704690
**Supervisor:** Associate Professor Emmanuel Stamatakis  
**Is there a specific project available?** Yes  
**Is there a broad research topic/s for students to consider:** Research on the effect of incidental (non-structured) physical activity and any aspects of physical or mental health  
**Project title:** Does physical activity and exercise modify the cardiovascular, metabolic, and hepatic effects of alcohol intake on the human body?  
**Is this an existing project?** Yes  
**Research question:**

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours  
- Bachelor of Health Sciences (Honours)  
- Bachelor of Applied Science (Exercise Physiology) Honours  
- Bachelor of Applied Science (Physiotherapy) Honours  

**Research group type:** Research Group based  


**Primary research interests:**  
Physical activity, exercise, sedentary behaviour, cardiovascular health, metabolic health, public health, obesity, epidemiology, mental wellbeing

**Chief investigator:** Associate Professor Emmanuel Stamatakis  

**Research team:** Dr Nathan Johnson

**Aims and background:**

The proposed research project will examine how physical activity and exercise modify the acute and long-term physiological effects of alcohol intake on cardio-metabolic and hepatic health. The specific objectives will address the role of duration of exposure, timing and intensity of physical activity in relation to alcohol intake. Depending on the interests of the candidate, this project offers opportunities for epidemiological work, controlled experiments, or a combination of both.

It is well-established that physical activity and exercise have multiple cardio-protective and general health benefits. Although the effect of physical activity on liver function remains unclear, high levels of habitual physical activity have been shown to be associated with a reduced incidence of non-alcoholic fatty liver disease, and short-term exercise interventions have proven to be effective in lowering liver fat levels. On the other hand, moderate consumption of alcohol is considered beneficial for cardiovascular health but high alcohol consumption is linked to poor cardiovascular health and increased risk for various
severe liver disorders including alcoholic liver disease, liver cirrhosis, and alcoholic hepatitis. Recent longitudinal epidemiological studies suggest that among those who have high levels of physical activity and high cardiorespiratory fitness, alcohol intake is not associated with increased risk for cardiovascular mortality. These observational studies imply that regular exercise may, to some extent, protect against the health risks associated with alcohol drinking, although there a paucity of studies in controlled settings.

**Proposed method of data collection:**

- **Ethics approval needed?** Yes
- **Ethics applied for?** No
- **Type of study:** Quantitative
- **Resources needed (all available):** Additional information:

**Supervisor contact details:** emmanuel.stamatakis@sydney.edu.au / 432704690
Supervisor: Associate Professor Emmanuel Stamatakis

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Research on the effect of incidental (non-structured) physical activity and any aspects of physical or mental health

Project title: Effects of dog ownership on human cardiovascular, metabolic and psychosocial health

Is this an existing project? Yes

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise Physiology) Honours
- Bachelor of Applied Science (Physiotherapy) Honours

Research group type: Research Group based


Primary research interests:
Physical activity, exercise, sedentary behaviour, cardiovascular health, metabolic health, public health, obesity, epidemiology, mental wellbeing

Chief investigator: Associate Professor Emmanuel Stamatakis

Research team: Professor Adrian Bauman

Aims and background:
The proposed research project will examine the health benefits of dog ownership on human health and will elucidate the likely mechanisms. The specific objectives are to examine the effects of first-time dog adoption on key cardiovascular and metabolic health markers, physical activity and sedentary behaviour, stress, positive affect among middle to old age sedentary individuals.

In 2013 the American Heart Association published a Scientific Statement on the cardiovascular health benefits of pet ownership. Although the statement is generally positive about the potential of dog ownership to improve cardiovascular health of humans (lower blood pressure and stress levels, better recovery after heart attacks, etc) it also highlights important limitations of existing research, such as:

- Most studies are of moderate to low quality and there is a lack of randomized controlled trials
- It is very unclear how dog ownership may benefit human healthy, is it e.g. through increased physical activity, or through psychological health benefits (companion, stress release, etc)
Dog ownership is linked to higher daily physical activity (walking) compared to non-owners but most studies have not adequately controlled for factors other than dog ownership that may explain this difference in physical activity. Also, existing studies have focused on disease-related outcomes and there is a paucity of studies looking at whether owning a dog can improve positive affect. Several other important human health-related aspects of dog ownership have not been examined, including the possible mediating role of socialisation with other owners while walking the pet, and whether dog ownership reduces indoor sedentary behaviour as well as increasing outdoor physical activity.

This research project is done in collaboration with RSPCA New South Wales. There will be opportunities for the student to input on the study design and contents. Research will divided into two phases: Phase 1 - piloting: a small-scale randomized trial to examine the feasibility of the participant recruitment mechanism and all research methods that will be used in Phase 2.

Phase 2 – Randomised Controlled Trial:
Group 1: deferred dog adoption (waiting list for 6 months); Group 2: deferred dog adoption (waiting list) and enrolment in a supported walking program; Group 3: imminent dog adoption

Key skills and competencies that will be developed during this PhD: trials, cardiometabolic biomarkers, stress-related biomarkers, positive affect and mental health evaluations, objective physical activity and sedentary behaviour monitoring.

Proposed method of data collection:
Ethics approval needed? Yes
Ethics applied for? No
Type of study: Quantitative
Resources needed (all available): Additional information:

Supervisor contact details: emmanuel.stamatakis@sydney.edu.au / 432704690
Faculty of Health Sciences

Supervisor: Associate Professor Emmanuel Stamatakis

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Research on the effect of incidental (non-structured) physical activity and any aspects of physical or mental health

Project title: Improving the measurement of sedentary behaviour and standing: evaluation of inclinometers, accelerometers and questionnaires for use in research

Is this an existing project? Yes

Research question: The aim of this project is to examine the validity and reliability of a set of questions used in large population studies to quantify sedentary behaviour, standing, and sleeping times; and to examine the measurement properties, usability and validity of two commercially available inclinometer / accelerometers.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise Physiology) Honours
- Bachelor of Applied Science (Physiotherapy) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/emmanuel.stamatakis.php

Primary research interests:
Physical activity, exercise, sedentary behaviour, cardiovascular health, metabolic health, public health, obesity, epidemiology, mental wellbeing

Chief investigator: Associate Professor Emmanuel Stamatakis

Research team: Professor Adrian Bauman, Dr Martin MacKey, Dr Melody Ding

Aims and background:
The 45 and Up and the Social Economic Environmental Factors study (SEEF) are questionnaire-based studies with large sample sizes (n>200,000 & n>60,000 respectively) and great potential for answering research questions on sedentary behaviour, standing and sleeping. The corresponding self-administered survey items enquire about daily times spent on sitting, sleeping, standing, TV/computer combined (45 & Up only), TV (SEEF only), and computer use (SEEF only). Although several published and ongoing studies have used these time allocation data, none of these questions have been validated. The Actigraph is probably the most widely used accelerometer in physical activity research. The recent GT3X+ triaxial model is being marketed as an inclinometer but preliminary testing suggests that when...
worn on the usual placement spot (waist) its performance in determining postural allocation is poor. On
the other hand, ActivPAL is a specialised inclinometer used broadly in sedentary behaviour research
although is very expensive for large scale research and requires adherence directly on the thigh skin,
which may make it problematic in certain situations. The Actigraph is limited as a device for measuring
sedentary behaviour because its inclinometer has been found to have poor accuracy for determining
posture allocation when worn on the waist. Less is known regarding its accuracy when worn on the thigh,
a location used to differentiate between sitting and standing with the ActivPAL. There are several
ongoing Charles Perkins Centre research projects that use either the 45 & Up-SEEF data on
sleeping/sedentary behaviour/standing or are collecting data from office workers and looking to use a
feasible and inexpensive objective measurement of postural allocation that can differentiate between
sitting and standing with small measurement error.

Proposed method of data collection:

Aims and Objectives

The aim of the proposed project is to address the above two gaps. Specifically, the two main aims and
corresponding objectives will be:

1) To evaluate the question items on sitting, sleeping, standing, screen time (as an indicator of overall sedentary behaviour), in a sample of adults aged 45 and over:
   • Criterion validity of the sitting, standing, against ActivPAL postural allocation data
   • Comparative validity of the screen time questions (as an indicators of overall sedentary behaviour) against ActivPAL sitting output.
   • Comparative validity of the sleeping question against ActivPAL postural allocation data
   • Test-retest reliability of the sitting, sleeping, standing, TV/computer combined, TV, and computer questions

2) In the same sample, to examine the feasibility and validity of using the GT3X+ as a thigh-worn accelerometer
   • Acceptability and adherence to wearing the GT3X+ worn on the thigh
     O During work hours
     O After work
     O Weekdays vs weekends
   • Criterion validity of the GT3X+ postural allocation data (sitting and standing) against the ActivPAL
     O During work hours
     O After work
Ethics approval needed? Yes
Ethics applied for? No
Type of study: Quantitative
Resources needed (all available): Additional information:

Supervisor contact details: emmanuel.stamatakis@sydney.edu.au / 432704690
Supervisor: Dr Gillian Nisbet

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Clinical Placement Learning Experiences for Physiotherapy Students: A comparison of private and public sector placements

Is this an existing project? No

Research question: Is there a difference in physiotherapy student experiences for ambulatory care placements in the private sector compared with the public sector?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Physiotherapy) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/gillian.nisbet.php

Primary research interests:
- Work Integrated learning
- Clinical supervision (student)
- Interprofessional Learning

Chief investigator: Dr Gillian Nisbet

Research team: Julia Blackford

Aims and background
Traditionally Ambulatory Care placement for physiotherapy students have taken place in outpatient departments of public hospitals. However increasingly placements are being sourced in the private sector, primarily private practices. This change is due to the increasing demand for students placements, a reduction in ambulatory care physiotherapy services in the public sector; and the increasing number of graduate physiotherapist working in private practice. Given private practice is traditionally less associated with clinical education compared with the public sector, little is known how this influences the student learning experience in this setting, and indeed if it differs from the public sector student experience. This study aims to explore student experiences on their Ambulatory Care placement in both the public and private setting.

Proposed method of data collection: Primarily qualitative; to be discussed further at the beginning of the project.

Ethics approval needed? Yes

Ethics applied for? No

Type of study: Qualitative

Specific requirements: Nil
Additional information:
Supervisor contact details: gillian.nisbet@sydney.edu.au / 93519529
Supervisor: Dr Ollie Jay

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Ingested water temperature and the effect on exercise performance and thermoregulatory behaviour.

Is this an existing project? No

Research question: Is exercise performance and thermoregulatory behaviour modified by abdominal or oral thermal sensation?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

Research group type: Research Group based


Primary research interests:
- Assessing and understanding thermoregulatory impairments in specific populations (e.g. children, MS patients, obese)
- Cooling/survival interventions for at-risk groups during heat waves
- Biothermal modeling
- Heat stroke prevention in workers and athletes
- Pediatric temperature management
- The development of international standards

Chief investigator: Ollie Jay

Research team: Nathan Morris

Aims and background

Background: Two separate areas of the brain control the physiological and behavioural responses to heat stress and therefore a stimulus may evoke one response but not the other. During exercise, behavioural thermoregulatory responses are analogous to the work rate or exercise performance. Previous research from our lab demonstrated abdominal, but not oral, thermoreceptors independently modify physiological responses to heat stress, whereas other evidence suggests oral thermoreceptors independently affect behavioural responses. The aim of the project is to determine the relative contribution of oral and abdominal thermoreceptors to behavioural thermoregulatory responses during exercise.

Proposed method of data collection: Eight young healthy adults will participate in one preliminary trial and six experimental trials. During the experimental trials participants will be asked to maintain an RPE of 16 while cycling by adjusting the workload, while simultaneously being blinded to physiological and performance feedback. Exercise will continue until the workload declines to <70% the initial 5 min
average. During each trial, the participants will ingest either 1.5°C or 37°C water by three different methods: i) drinking normally, ii) swilling the water in the mouth before expelling it and iii) having the water directly administered to the stomach using a nasogastric tube. Core and skin temperatures, whole-body sweat losses, as well as local sweat rate on the forearm and back will be measured throughout.

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Is this already an existing project?** No

**Type of study:** Quantitative

**Resources needed (all available):** Climatic chamber, indirect calorimetry, ventilated sweat capsule and thermometry data collection apparatus, body mass platform scale, cycle ergometer, water bath and nasogastric tubes.

**Additional information:**

**Supervisor contact details:** ollie.jay@sydney.edu.au
Supervisor: Associate Professor Steven Cumming

Is there a specific project available? No

Is there a broad research topic/s for students to consider: Research with children with hearing loss who are developing oral language skills

Project title:

Is this an existing project? No

Research question: Theory of Mind and Children with Hearing Loss / Cochlear Implants - we will work with data provided by The Shepherd Centre for deaf and hearing impaired children. There is some flexibility with the topic, however the research will be with young children with hearing loss.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/steven.cumming.php

Primary research interests: The impact of psychological, particularly cognitive, factors of decision making and performance, and on aspects of communication.

Chief investigator:

Research team:

Aims and background

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for?

Type of study:

Specific requirements: Nil

Additional information: This project can build on the work by current Hons students - or it can be a related area of study, however the subjects will be children with hearing loss (hearing aids or cochlear implants) developing oral language skills. Additional supervisor on this project will be Dr Maree Doble, Speech Pathologist (CPSP), who completed her PhD in the field of early communication development of infants with hearing loss using cochlear implants. She also lectures on hearing impairment in the specialist studies curriculum in speech pathology

Supervisor contact details: steven.cumming@sydney.edu.au
Supervisor: Associate Professor Steven Cumming

Is there a specific project available? No

Is there a broad research topic/s for students to consider: Research with children with hearing loss who are developing oral language skills

Project title:

Is this an existing project? No

Research question: Theory of Mind and social pragmatic skills of Children with Hearing Loss / Cochlear Implants - we will work with data provided by The Shepherd Centre for deaf and hearing impaired children. There is some flexibility with the topic, however the research will be with young children with hearing loss

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/steven.cumming.php

Primary research interests: The impact of psychological, particularly cognitive, factors of decision making and performance, and on aspects of communication.

Chief investigator:

Research team:

Aims and background

Proposed method of data collection: Ethics approval needed? Yes

Ethics applied for?

Type of study:

Specific requirements: Nil

Additional information: This project can build on the work by current Hons students - or it can be a related area of study, however the subjects will be children with hearing loss (hearing aids or cochlear implants) developing oral language skills. Additional supervisor on this project will be Dr Maree Doble, Speech Pathologist (CPSP), who completed her PhD in the field of early communication development of infants with hearing loss using cochlear implants. She also lectures on hearing impairment in the specialist studies curriculum in speech pathology

Supervisor contact details: steven.cumming@sydney.edu.au
**Supervisor:** Doctor Melanie Keep

**Is there a specific project available?** Yes

**Project title:** Instagram Study

**Is this an existing project?** Yes

**Research question:** 1. What health behaviours do Instagram users engage in while on the platform?

2. Does type of Instagram use, particularly the number of friends and strangers followed and following, predict health risk factors and online health information seeking?

3. Does Instagram use, in particular the number of friends and strangers followed and following, predict perceived quality of life and mental and physical wellbeing?

**This project is appropriate for students in the following degree(s):**
- Any discipline

**Research group type:** Research Group based


**Primary research interests:**
- eHealth, including social media, telehealth, online health information
- Learning and teaching: strategies to support student engagement and learning.
- Student support, e.g. mentoring program evaluation.

**Chief investigator:** Melanie Keep

**Research team:** Krestina Amon

**Aims and background**
Despite being one of the most popular social media platforms, research on the relationship between Instagram and health is limited. Existing research suggests that individuals who follow larger numbers of strangers engage in more social comparison and also report greater depressive symptoms (Lup, Trub & Rosenthal, 2015). However, peer support through online social networks has also demonstrated positive effects on health through enhanced physical activity (Bauman, et al., 2002) and social capital (Steinfield,
This project will explore the role of “follower” and “following” relationships on Instagram and their effects on health behaviours and outcomes.

**Proposed method of data collection:**
An online survey design will be used to explore the research questions. Participants will be at least 300 adult users of Instagram (aged 18+) recruited through flyers around campus and online notices. Support is available for recruitment, survey design and quantitative data analyses.

**Ethics approval needed?** Yes
**Ethics applied for?** Yes

**Type of study:** Mixed methods

**Specific requirements:** Students will be required to have access to SPSS and the research team Survey Monkey account. Other requirements are standard (e.g. access to a desk and computer).

**Any additional information:** This project extends on existing work by Dr Krestina Amon and Dr Melanie Keep. Students will be mentored and supported by their supervisors but also the Faculty’s eHealth research team. Students will be working with peers in the eHealth area and have access to support from the team.

**Supervisor contact details:** 9351 9390 / melanie.keep@sydney.edu.au
Supervisor: Doctor Claire Hiller

Is there a specific project available? No

Is there a broad research topic/s for students to consider:
- Lower limb musculoskeletal injury
- Dancers musculoskeletal injury

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Research Group based


Primary research interests:
- Musculoskeletal injury esp lower limb
- Ankle instability
- Dancers health
- Long-term impact of musculoskeletal injury

Chief investigator:

Research team:

Aims and background

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for?

Type of study:

Resources needed (all available):

Additional information: The project could be part of an already running project or developed independently. You will be part of the Arthritis and Musculoskeletal Research Group which has a strong collaborative multidisciplinary approach.

Supervisor contact details: claire.hiller@sydney.edu.au
Supervisor: Dr Mary Lam

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Interdisciplinary e-Health Advancement

Project title: Interdisciplinary e-Health Advancement

Is this an existing project? Yes

Research question:
1. What are the facilitators of Interdisciplinary eHealth?
2. What are the barriers of Interdisciplinary eHealth?
3. What are the data systems and types of data collected by interdisciplinary health professionals?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Occupational Therapy) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Speech Pathology) Honours
- Any discipline

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/mary.lam.php

Primary research interests:
- e-Health
- Big Data

Chief investigator: Leanne Togher

Research team: iEHART: Interdisciplinary eHealth Advancement and Research Team

Aims and background

eHealth is a growing area of practice and research. The term e-Health describes the use of information communication technology (ICT) in the delivery and management of healthcare services. It includes, but is not limited to, the delivery of health services (for example, remote healthcare delivery), monitoring of health conditions via telehealth tools/applications and online health education and treatment. Another critical application is the management of patient information through personally controlled electronic health records (PCEHR) and routinely collected health system data. At present, there is no evidence-based interdisciplinary eHealth service delivery model. This may be due, in part, to the variable adoption of eHealth by health professionals. Research has found that OTs working in rural and remote NSW do not use telehealth for delivery of services to their clients with disabilities1 despite the fact that clients and carers are willing to try accessing services via technology2. In addition, a survey of 10,000 members of the Australian Nursing Federation found that fewer than 25% of nurses were very confident in using technology3. A 2011
Commonwealth Government report on “The eHealth Readiness of Australia’s Allied Health Sector” concluded that:

“most allied health practitioners see the potential benefits of eHealth to their practice and health outcomes, and can and will use well-designed solutions.... Self-contained administrative, research, professional education and note viewing applications are already being widely used. However, when considering more networked, care-focused solutions, most practitioners see the potential costs and barriers currently outweighing the benefits”.

In this project, we aim to provide insight into the barriers and facilitators of interdisciplinary eHealth use and develop an evidence-based model of interdisciplinary, patient-centred care. To achieve this, we will:

1. Explore what health professionals perceive to be the barriers and facilitators to engaging in interdisciplinary eHealth.
2. Investigate the data systems and types of data collected by interdisciplinary health professionals.

References:


Proposed method of data collection: This project will use a survey design to address the research questions above. This survey will be administered online. Participants will be health professionals and, if a
second student is interested in joining the team, health consumers. This project is part of a larger study so support is available for recruitment. Students will be supported in developing skills in quantitative analysis techniques as appropriate.

**Ethics approval needed?** Yes

**Ethics applied for?** Yes

**Is this already an existing project?** Yes

**Type of study:** Quantitative

**Resources needed (all available):** Students will be required to have access to SPSS and the research team Survey Monkey account. Other requirements are standard (e.g. access to a desk and computer).

**Additional information:** The IeHART team is an interdisciplinary team of professionals/academics. It consists of members from the following disciplines: Speech Pathology, Physiotherapy, Occupational Therapy, Health Informatics, Computing Sciences, Medical Radiation Sciences, and Social Sciences (Psychology and Behavioural Science). The IeHART team is collaborative in our research and supportive of students and their development as health professionals.

The student will be supervised by Dr Mary Lam, Dr Monique Hines and Dr Robyn Lowe. Other members of the IeHART team will also provide expert support to student when required.

Student/s will have the opportunity to learn concepts and techniques in questionnaire design and implementation. Student/s will also learn practical data management and analysis skills.

This project can be taken up by two students. If this project is taken up by two students, one student will focus on the perspective of health professionals and the other student will focus on consumers’ perspectives.

**Supervisor contact details:** mary.lam@sydney.edu.au
Supervisor: Doctor Jean Nightingale

Is there a specific project available? No (your name and research interest will be made available to students)

Is there a broad research topic/s for students to consider:

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Physiotherapy) Honours

Research group type: Research Group based

University Profile: Elizabeth Nightingale

Primary research interests:
- Knee and Ankle Injuries
- Netball injuries
- Clinical biomechanics

Chief investigator:

Research team:

Aims and background:

Proposed method of data collection:

Ethics approval needed? N/A

Ethics applied for?

Is this already an existing project?

Type of study:

Resources needed (all available):

Additional information:

Supervisor contact details: jean.nightingale@sydney.edu.au
Supervisor: Professor Mark Onslow

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Pre-school children who stutter

Project title: Preschool stuttering throughout the day

Is this an existing project? Yes

Research question: What is the variability of stuttering severity with pre-school children during the day.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/asrc/about_us/director.shtml

Primary research interests: Stuttering

Chief investigator: Mark Onslow

Research team: Australian Stuttering Research Centre

Aims and background
Audio recordings are available of stuttering pre-school children during an entire day. The project studies their stuttering during that period in detail.

Proposed method of data collection: Analysis of stuttering from audio recordings of children.

Ethics approval needed? Yes

Ethics applied for? No

Type of study: Quantitative

Resources needed (all available): N/A

Additional information:

Supervisor contact details: mark.onslow@sydney.edu.au
Supervisor: Doctor Milena Simic

Is there a specific project available? No

Is there a broad research topic/s for students to consider: Research in musculoskeletal conditions with or without use of biomechanics.

Some examples may be to evaluate risk factors of injury or disease progression. There is also potential to conduct an intervention study, such as strength training, gait retraining or use of devices.

Project title:
Is this an existing project? No

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Physiotherapy) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/milena.simic.php

Primary research interests:
- Musculoskeletal pain
- Biomechanics
- Osteoarthritis
- Knee conditions

Chief investigator: Milena Simic

Research team:

Aims and background:

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for? No

Is this already an existing project? No

Type of study: Quantitative

Resources needed (all available):

Additional information:

Supervisor contact details: milena.simic@sydney.edu.au
Supervisor: Mr Robyn Lowe

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Language and stuttering with pre-school children

Project title: Language and stuttering with pre-school children

Is this an existing project? Yes

Research question: How does language throughout the day influence stuttering with pre-school children.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/asrc/about_us/researchers.shtml

Primary research interests:
- stuttering

Chief investigator: Robyn Lowe

Research team: Australian Stuttering Research Centre

Aims and background
Recordings are available of pre-school stuttering children during an entire day. The research draws on those recordings to explore the relation between stuttering and childhood language.

Proposed method of data collection: Concurrent language and stuttering analysis.

Ethics approval needed? Yes

Ethics applied for? No

Is this already an existing project? Yes

Type of study: Quantitative

Resources needed (all available): NA

Additional information:

Supervisor contact details: Robyn.Lowe@sydney.edu.au
Supervisor: Doctor Zakia Hossain

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Research in breast cancer, teenage reproductive health

Project title: Ethnic differences in breast cancer knowledge and screening practices among women living in Sydney

Is this an existing project? Yes

Research question:

Research Question(s) and/or hypothesis:
1. What factors influence migrant women’s decision to carry out breast screening?
2. Is there any difference in the use of clinical breast examination among CALD-women?
3. Is ethnicity an important factor in determining breast screening practices?
4. What are the barriers in utilization of clinical breast examination, breast self examination and mammogram among the CALD-women?
5. To what extent religious and cultural values play significant role in the utilization of breast screening services among these women?
6. What are the barriers of utilisation in use of health care services among these women?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Occupational Therapy) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Discipline based


Primary research interests: Chronic disease and disability, women's health, ethnicity, cross-cultural issues

Chief investigator: Zakia Hossain

Research team: Dr Sarah Lewis and Dr Ann Poulos

Aims and background

Ethnic differences in survival of breast cancer were reported in the USA study (Hunter 2000). Limited evidence suggests that people from NESB have lower than average rates of population in cancer screening in Australia (Weber, Banks, Smith, O’connell and Sitas, 2009). In New South Wales, 31 one per cent populations aged 45 years or older in 2006 were born outside Australia (ABS, 2006). However, little is known about the breast cancer screening practices among women from diverse ethnic groups living in
Ethnic differences in breast cancer knowledge and screening practices among women living in Sydney Metropolitan Area.

The aims of this study is to: 1. document the breast cancer screening including BSE (Breast self examination) and CBE (clinical breast Examination) and mammogram among women from culturally and linguistically diverse groups (CALD-women) living in Sydney Metropolitan area; 2. examine the impact of beliefs and cultural values on health care behavior of CALD women living in Sydney metropolitan area, particularly with regard to breast cancer screening.

Proposed method of data collection: A quantitative method will be used for the purpose of the study. CALD women aged 35 years or over living in SMA for more than one year will be recruited as eligible participants of the study. The study will examine CALD women’s knowledge and ever practice of breast self-exam (BSE); clinical breast examination and mammogram, It will also examine barriers in utilization of BSE, CBE and Mammogram among the participants. Survey will cover participants’ socio-demographic background, migration status, access to and utilisation of health care services and health insurance status, breast cancer knowledge, breast screening practices and utilisation of health care services.

Study Design: Cross-sectional study.

Outcome measures: Breast cancer screening practices.

Criteria for inclusion: CALD women aged 35 years or over living in Sydney Metropolitan area.

Source of subjects, method of recruitment, method of model validation: Migrant Resource centers; snowball sampling, and recruitment via flyers etc.

Ethics approval needed? No

Ethics applied for? Yes

Type of study: Quantitative

Additional information: Project has got ethics clearance from the University of Sydney Human Research Ethics committee.

Supervisor contact details: zakia.hossain@sydney.edu.au

Faculty of Health Sciences, The University of Sydney
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Or Demountable, Camperdown campus
The University of Sydney
NSW 2006 Australia

Doctor Zakia Hossain
T 93519340
E zakia.hossain@sydney.edu.au
sydney.edu.au
**Supervisor:** Associate Professor Colleen Canning

**Is there a specific project available?** No

**Is there a broad research topic/s for students to consider:** Contribution of motor and non-motor impairments to activity limitations in neurological conditions. Exercise interventions to improve mobility and reduce falls in neurological conditions.

**Project title:**

**Is this an existing project?**

**Research question:**

This project is appropriate for students in the following degree(s):

- Bachelor of Applied Science (Physiotherapy) Honours

**Research group type:** Research Group based


**Primary research interests:** Descriptive studies, randomized controlled trials, systematic reviews

**Chief investigator:**

**Research team:**

**Aims and background**

**Proposed method of data collection:**

**Ethics approval needed?** No

**Ethics applied for?**

**Type of study:**

**Resources needed (all available):**

**Additional information:**

**Supervisor contact details:** [colleen.canning@sydney.edu.au](mailto:colleen.canning@sydney.edu.au)
Supervisor: Dr Mary Lam

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Interdisciplinary e-Health Advancement

Project title: Interdisciplinary e-Health Advancement in Cancer Management

Is this an existing project? Yes

Research question: 1. What are the facilitators of Interdisciplinary eHealth in cancer care?
2. What are the barriers of Interdisciplinary eHealth in cancer care?
3. Are there differences between Rural and Metro services in their perceived barriers and facilitators to engaging in interdisciplinary eHealth?

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Occupational Therapy) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Speech Pathology) Honours
- Any discipline

Research group type: Research Group based


Primary research interests:
- e-Health
- Big Data

Chief investigator: Professor Tim Shaw

Research team: ieHART: Interdisciplinary eHealth Advancement and Research Team

Aims and background

eHealth is a growing area of practice and research. The term e-Health describes the use of information communication technology (ICT) in the delivery and management of healthcare services. It includes, but is not limited to, the delivery of health services (for example, remote healthcare delivery), monitoring of health conditions via telehealth tools/applications and online health education and treatment. Another critical application is the management of patient information through personally controlled electronic health records (PCEHR) and routinely collected health system data. At present, there is no evidence-based interdisciplinary eHealth service delivery model. This may be due, in part, to the variable adoption of eHealth by health professionals. Research has found that OTs working in rural and remote NSW do not use telehealth for delivery of services to their clients with disabilities1 despite the fact that clients and carers are willing to try accessing services via technology2. In addition, a survey of 10,000 members of the Australian Nursing Federation found that fewer than 25% of nurses were very confident in using technology3. A 2011
Commonwealth Government report on “The eHealth Readiness of Australia’s Allied Health Sector” concluded that:

“most allied health practitioners see the potential benefits of eHealth to their practice and health outcomes, and can and will use well-designed solutions.... Self-contained administrative, research, professional education and note viewing applications are already being widely used. However, when considering more networked, care-focused solutions, most practitioners see the potential costs and barriers currently outweighing the benefits”.

In this project, we aim to provide insight into the barriers and facilitators of interdisciplinary eHealth use and develop an evidence-based model of interdisciplinary, patient-centred care. To achieve this, we will:
1. Explore what health professionals perceive to be the barriers and facilitators to engaging in interdisciplinary eHealth.
2. Investigate if there is a difference between rural and metro services in their perceived barriers and facilitators to engaging in interdisciplinary eHealth.

References:

Proposed method of data collection: Data Collection - Focus group
Analysis – thematic analysis of transcribed data collected from focus group.
Ethics approval needed? Yes
Ethics applied for? Yes

Type of study: Qualitative

Resources needed (all available): Standard requirements - e.g. access to a desk and computer.

Additional information: The IeHART team is an interdisciplinary team of professionals/academics. It consists of members from the following disciplines: Speech Pathology, Physiotherapy, Occupational Therapy, Health Informatics, Computing Sciences, Medical Radiation Sciences, and Social Sciences (Psychology and Behavioural Science). The IeHART team is collaborative in our research and supportive of students and their development as health professionals.

The student will be supervised by Dr Mary Lam, Dr Monique Hines, Dr Melanie Keep, Professor Tim Shaw. Other members of the IeHART team will also provide expert support to student when required.

Student will have the opportunity to learn concepts and techniques in conducting focus group discussions and practical skills in analysing qualitative data.

Supervisor contact details: mary.lam@sydney.edu.au
Supervisor: Elise Baker

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: The effect of phonological intervention on the expressive language abilities of preschoolers with phonological impairment.

Is this an existing project? Yes

Research question: Do preschoolers with SSD improve their realization of simple and complex morphophonological morphemes following input-based phonological intervention targeting cluster reduction?

This project is appropriate for students in the following degree(s): Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/elise.baker.php

Primary research interests:
- speech sound disorders (SSD)
- phonological impairment
- intervention
- evidence-based practice
- word learning.

Chief investigator: Dr. Elise Baker

Research team: Prof. Sharynne McLeod, Ms Sarah Masso, Dr. Natalie Munro.

Aims and background

Phonological impairment is the most common type of speech sound disorder in early childhood. Children with phonological difficulties can also have concomitant expressive language impairment. Research on whether intervention targeting one domain can have cross effects on an untreated domain are equivocal, with some research supporting cross-over domain generalization (e.g., Tyler, Lewis, Haskill, Tolbert, 2002) and other research not providing support (e.g., Fey et al., 1994).

The purpose of this study will be to determine if input-based phonological intervention targeting consonant cluster difficulties in children, indirectly improves expressive morphosyntax.

For further reading:


(2) Tyler, A. A., Lewis, K. E., Haskell, A., & Tolbert, L. C. (2002). Efficacy and cross-domain effects of a
The effect of phonological intervention on the expressive language abilities of preschoolers with phonological impairment.


**Proposed method of data collection:** This project is part of a larger study—the Sound Start Study (McLeod, Baker, McCormack, Wren, & Roulstone, 2013-2015). The Sound Start Study is a 6-staged randomized controlled trial designed to examine the effectiveness of a computerized intervention program—Phoneme Factory Sound Sorter (Wren & Roulstone, 2013). This program is an input-based intervention targeting common phonological processes in preschoolers with phonological impairment.

The honours student would examine pre- and post-intervention data (speech and expressive morphosyntax) for two groups of children (i.e., children who did, and children who did not receive intervention targeting cluster reduction).

**Ethics approval needed?** Yes
**Ethics applied for?** Yes
**Type of study:** Quantitative

**Resources needed (all available):** Students would need to have good phonetic transcription skills; a computer and access to statistical analysis software.

**Additional information:**

**Supervisor contact details:** elise.baker@sydney.edu.au
Supervisor: Doctor Roger Bourne

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Can we do MRI scans faster if we account for human visual perception?

Is this an existing project? No

Research question: Can we do MRI scans faster if we account for human visual perception?

This project is appropriate for students in the following degree(s):
Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/roger.bourne.php

Primary research interests:
- MRI
- Image processing
- Biophysics

Chief investigator: Dr Roger Bourne

Research team: MIOPEG

Aims and background

MRI scans generally have much higher image quality than is necessary for their diagnostic purpose. This means most scans could be done faster with no adverse effect on diagnostic accuracy. This project investigates the best strategy for fast scanning that will produce images that have good diagnostic quality but also do not affect radiologists' confidence due to looking 'too weird'.

Proposed method of data collection: The project will involve simulation of fast MRI scans by starting with high quality clinical images and adding different amounts of noise at different spatial frequencies. We will then test radiologists' accuracy and confidence in making diagnostic decisions using the simulated fast scan images.

Ethics approval needed? Yes

Ethics applied for? No

Type of study: Quantitative

Resources needed (all available): The student needs to have good computer skills, ideally with computer programming experience.

Additional information:

Supervisor contact details: roger.bourne@sydney.edu.au
Supervisor: Doctor Joanna Diong

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Research in use of devices to assess movement in the clinic, and stroke and Parkinson's disease, but open to student suggestions.

Project title: What do the fingers do all day after a stroke?

Is this an existing project? Yes

Research question: How much is the hand used after stroke? – 24 hour monitoring of thumb and finger motion after acute stroke

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Exercise and Sport Science) Honours
- Bachelor of Applied Science (Occupational Therapy) Honours
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (Exercise Physiology) Honours

Research group type: Discipline based

University Profile: [link]

Primary research interests:
- Human movement in clinical conditions
- Reproducibility in research
- Stroke and Parkinson's disease
- Hand function
- Evidence based practice

Chief investigator: Joanna Diong

Research team: Martin Héroux, Evangelos Pappas, Stephanie Potts

Aims and background

Less than half of all stroke survivors who have impaired arm movement will recover physical function 6 months after stroke, and up to 30% of people will develop joint contractures (loss of range of motion) at the affected wrist and hand.

Wrist and hand contractures after stroke could be due to decreased range of motion during movement of thumb and fingers, decreased amount of use of thumb and fingers, or both. In healthy people, muscles often undergo large active and passive changes in length as part of normal movement during daily activities. However after stroke, data from studies that use accelerometry to map physical activity report an 80%
reduction in use of the affected arm compared to the unaffected arm during daily activities. In addition, the thumb and finger joints of the affected arm may not undergo sufficient, large amplitude movements to maintain normal passive muscle length and stiffness.

One limitation in previous physical activity studies is that accelerometer measures commonly taken at the wrist cannot quantify the amount of thumb and finger joint motion, and so cannot identify whether or how much thumbs and fingers move through range during daily activities. This study proposes to apply modern stretch sensors – sensors that detect relative changes in position of adjacent segments of limbs – to measure joint range of motion for long periods of time, and so provide a rich pool information on amount and range of joint range of motion over time.

This study aims to determine how much finger joint range of motion occurs in the affected hand after stroke, over 24 hours.

**Proposed method of data collection:** Customised stretch sensors will be positioned over the extensor surface of the index finger and thumb. Stretch sensors will be applied across (1) the metacarpophalangeal, proximal and distal interphalangeal joints of the index finger, and (2) the metacarpophalangeal and interphalangeal joints of the thumb. Data will be collected from 15 participants with stroke and 15 able-bodied control participants. These data will recorded by a wireless device.

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Type of study:** Quantitative

**Resources needed (all available):** An interest in use of wearable technology in clinical settings could be beneficial but is not necessary.

**Additional information:**

**Supervisor contact details:** joanna.diong@sydney.edu.au
Supervisor: Associate Professor Joanne Arciuli

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:
Project title: Exploring and remediating loss of language function in primary progressive aphasia (PPA)

Is this an existing project? No

Research question: 1. Does use of network model to drive selection of stimuli improve language learning outcomes in PPA? (Student 1)

2. Does an individual’s capacity for relearning improve language learning outcomes in PPA? (Student 2)

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Research Group based


Primary research interests:

Chief investigator: Arciuli and Ballard

Research team:

Aims and background

Loss of language function in primary progressive aphasia (PPA) leads to social disconnectedness, dependency on carers, and depression. The network model defines how words are connected within the adult lexicon. We will examine phonological perception and production skills and how variables defining network structure (as they relate to stimuli) and individual differences (as they relate to participants’ cognitive capacities) influence language outcomes for PPA.

Proposed method of data collection: N=20 adult participants with PPA will be recruited through Prof Kirrie Ballard’s links with PPA community. Brief intervention suitable for Hons projects will be designed in collaboration with students using network model of how words in the lexicon are connected. A battery of tests examining individual differences, including the capacity for relearning, will also be administered prior to intervention. Perception and production of target stimuli will be tested pre-post intervention. Quantitative statistical methods will be used to analyse data. The two Honours students will share the data collection responsibilities and each will then analyse and write up data according to either (1) or (2).

Ethics approval needed? Yes

Ethics applied for? No

Type of study: Quantitative

Resources needed (all available):
Additional information: Arciuli and Ballard will co-supervise these students. Both are ARC Future Fellows with significant research and supervisory experience. Arciuli will be out of the country 2-3 months in the second half of each year as per the needs of her Fellowship. As such, and because this research program has been developed by both Ballard and Arciuli, students are being co-supervised.

Supervisor contact details: joanne.arciuli@sydney.edu.au
Supervisor: Professor Patrick Brennan

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: There are several projects (5) around the BREAST SCREEN READER ASSESSMENT STRATEGY (BREAST)


High quality breast imaging and accurate image assessment are critical to the early diagnoses, treatment and management of women with cancer. Mammography is the primary diagnostic tool for detecting breast cancer with 800,000 women X-rayed annually in Australia; however, it fails to detect 30% of breast cancers, with many missed cancers being visible on the image. The BreastScreen Reader Assessment Strategy (BREAST) monitors mistakes, identify reasons for mammographic errors and create innovative solutions to reduce errors.

The BREAST initiative is based on digital screen reading test sets designed to assess the performance of screen-reading radiologists and radiology registrars. The strategy provides immediate feedback to individual readers and BreastScreen Services on their performance on a set of 60 clinically relevant test cases. The feedback is made possible through the Ziltron online tool.

BREAST is a resource by which BreastScreen Australia and BreastScreen Aotearoa (New Zealand), with the financial support of the Australian National Breast Cancer Foundation and the New Zealand Ministry of Health respectively, may continue to meet their aim of reducing morbidity and mortality from breast cancer via early detection and diagnosis. BREAST significantly enhances the well established quality assurance program of mammography screening in Australia and New Zealand.

The titles of specific projects are:

ANZ test set performance

AD and Stellate test set

Variation in test set performance between radiologists and registrars

Variation in test set performance between screening services

Identifying the characteristics of false positive cases
Project title: The titles of specific projects are:

ANZ test set performance

AD and Stellate test set

Variation in test set performance between radiologists and registrars

Variation in test set performance between screening services

Identifying the characteristics of false positive cases

Is this an existing project? Yes

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Discipline based


Primary research interests:
- Dr Mark McEntee's research interests include Breast density assessment, Optimisation of Breast cancer detections, Medical Image Perception, Diagnostic Reference Levels in CT and X-ray examinations, optimisation of radiation dose and image quality, optimisation of soft copy displays, the ambient environment and lighting conditions for radiological reporting, image quality measurement, and ROC.

Chief investigator: Prof Patrick Brennan

Research team: BREAST

Aims and background

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for? No

Type of study: Mixed methods

Resources needed (all available):

Additional information: Please contact Prof Patrick Brennan at patrick.brennan@sydney.edu.au to express and interest.
Supervisor contact details: patrick.brennan@sydney.edu.au
Supervisor: Associate Professor Mark McEntee

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Breast density measurement with bioimpedance analysis

Is this an existing project? No

Research question: Significance

Having a no-dose technique for measurement of breast density is novel, as it has potential to provide a better understanding of breast density and how density may promote growth of breast cancer development. Regular BIA density measurement might provide opportunities to monitor life-course breast density changes, and thus changes in breast cancer susceptibility with no detrimental effect. Knowledge of cancer risk will allow for earlier adoption of cancer prevention strategies. It will also help inform clinical decision-making such as individualization of screening intervals and pathways for women with dense breasts and enable early detection of breast cancers.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Physiotherapy) Honours
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/mark.mcentee.php

Primary research interests:
- Dr Mark McEntee's research interests include Breast density assessment, Optimisation of Breast cancer detections, Medical Image Perception, Diagnostic Reference Levels in CT and X-ray examinations, optimisation of radiation dose and image quality, optimisation of soft copy displays, the ambient environment and lighting conditions for radiological reporting, image quality measurement, and ROC.

Chief investigator: Mark McEntee

Research team: MIOPEG, Breast Cancer Research Group

Aims and background

Background

Breast density is defined as the proportion of the breast that is composed of fibroglandular tissue. High breast density is a determinant of breast cancer risk, interval cancers, and mammographic sensitivity1, 2. These have made breast density assessment clinically relevant, and its notification laws have been passed by 19 states in the USA. Breast density information can be used in combination with other risk factors for risk stratification and clinical decision-making such as screening intervals and the selection of the more appropriate imaging pathways for earlier detection of breast cancer. Breast density information
Breast density measurement with bioimpedance analysis is most commonly acquired through mammographic breast density assessment. However, imaging the breast to measure breast density alone is currently unjustified due to radiation risk, with 2mGy of mean glandular dose (MGD) being delivered on the average. Bioimpedance analysis (BIA) is a unique and highly innovative non-ionizing radiation method with great potentials for diagnosis of breast cancer and classification of breast density. Its use in breast density measurement will be novel and have the potential to be a disruptive technology, changing the way we classify women’s risk. This study seeks to assess the accuracy of BIA in breast density measurement.

Literature review
High breast density represents high quantity of epithelial and stromal cells and collagen. Since 90% of cancers originate from epithelial cells and stromal cells regulate epithelial cell proliferation and collagen is responsible for tumor reorganization, breast with high density is associated with high breast cancer risk. Studies have shown that heterogeneously dense and extremely dense breast are associated with 4 to 6 fold risk of cancer and cancer and 50% of interval cancers. Additionally, breast density is associated with established risk factors for breast cancer related to genetics, ethnicity and lifestyle. Therefore assessment and monitoring of breast density with lifestyle changes such as alcohol, hormonal, diet and other factors is very important, as a 1% increase in breast density is associated with a 2% increase in relative risk of breast cancer. It is also increasingly important to avoid exposure of the highly radiosensitive breast cells to ionizing radiation as it has potential to cause cancer.

It is also desirable to develop improved no-dose technology suitable for characterizing dense breast tissue and breast cancer. Magnetic resonance imaging (MRI) and ultrasound are alternatives to no-radiation dose measurement of breast density, but the mechanisms of breast density measurements from these modalities are poorly understood. For example, with MRI, biopsies from patients with breast density measurement from standard digital mammography need to be correlated with water mobility measured by diffusion weighted MRI. Further MRI is expensive and not all patients can afford the examination just for density assessment. Bioimpedance analysis is a potential solution to no-radiation dose measurement of breast density, and it substantially cheaper ($20-$30). BIA has been shown to be useful in classification of pre-cancerous tissue and ascertaining the condition of breast ductal structures. Such characterization may ultimately be useful in diagnosis or risk assessment by measuring the electrical impedance of breast tissue. BIA works by passing a low-level electric current through the tissue, with a measurement of the voltage drop across the tissue providing an indirect indication of the overall tissue impedance. The impedance of the tissue is associated with different conditions ranging from normal fatty and dense tissue to abnormal condition of the cells composing the tissue such as tumor or other abnormal biological conditions. Since breast density is a significant risk factor for breast cancer and is...
subject to modulation by established breast cancer risk factors, BIA might provide opportunities to monitor change in breast cancer susceptibility, and thus allow for prevention and earlier adoption of intervention strategies. This will eliminate the use of radiation-based methods, and may overcome subjectivity and inter-observer variability radiologists’ assessments.

Aims and objectives of study
1. To assess the accuracy of BIA for measurement of breast density in the screening population (asymptomatic women who present for annual or biennial mammography screening)
2. To compare the performance of BIA vs. standard mammography for measurement of breast density
3. To investigate the relationship between breast density measured by BIA, digital mammography, and water mobility measured by diffusion weighted MRI, potentially developing a no-dose technique for breast density assessment.

Proposed method of data collection: Methods
After ethics approval, informed and written consent will be sought from women undergoing annual mammography screening at the Sydney Breast Clinic for screening purposes. Only 100 asymptomatic women will be included in this study. Those with known breast lesions will be excluded.

The procedure for the BIA examination will be explained to the women prior to examination. The BIS procedure will be performed on the same day as the subject scheduled mammogram.

Breast density assessment will be performed as follows using the BIA. Subject will be asked to remove their upper body clothing and bra and then cover them up with a towel draped horizontally across their chest. The area around the breast and nipple will be cleaned one side at a time with alcohol, keeping the towel covering the other side at all times. The skin will be allowed to dry, and the participant will be asked to sit on the side of the bed. Four measurement sites will be marked as listed below:

1. MR: distance between nipple and medial breast border
2. LR: distance between nipple and lateral breast border
3. IR: distance between nipple and infra-mammary fold
4. MP: mammary projection will be measured by viewing the test participant from the lateral aspect from sternum to nipple, and the measurement will be recorded.
5. If the subject has pendulous breasts, the subject will be asked to place hands on top of head to elevate breast or may be asked to assist in lifting the infra-mammary fold so that measurement can be made accurately.

An adhesive electrode (SenoSENSE Medical Systems, Toronto, Canada) interfaced to an impedance
Breast density measurement with bioimpedance analysis meter (Bodystat 500, Bodystat, Isle of Man, UK) with a customized cable will be used for the study. Study will be conducted as follows;

1. A connection will be established between a first electrode and subepithelial parenchymal tissue in the breast of the individual;
2. A second electrode will be placed in contact with the skin surface of the breast at the subepithelial tissue at a fixed distance from the nipple of the breast;
3. A electrical signal having a frequency between the first and second electrodes will be established;
4. The subepithelial impedance (Zsub), at least one frequency between the first and second electrode will be measured;
5. An estimate of the density of the breast will be obtained according to an algorithm relating Zsub to mammographic breast density estimated or calculated according to a method independent of steps (1) through (4).

This procedure will be performed on both breasts. Once the above measurements have been completed, the participant can get dressed.

The BIRADS and/or Volpara mammographic breast density grades of these women will be retrieved from databases. Pearson’s correlation will be used to assess the relationship between BIS breast density measures of right and left breasts. Pearson’s correlation will also be used to assess the relationship between mammographic breast density measured by BIRADS and BIA as well as Volpara and BIA.

Significance

Having a no-dose technique for measurement of breast density is novel, as it has potential to provide a better understanding of breast density and how density may promote growth of breast cancer development. Regular BIA density measurement might provide opportunities to monitor life-course breast density changes, and thus changes in breast cancer susceptibility with no detrimental effect. Knowledge of cancer risk will allow for earlier adoption of cancer prevention strategies. It will also help inform clinical decision-making such as individualization of screening intervals and pathways for women with dense breasts and enable early detection of breast cancers.

References


4. Davies RJ. Electrical bioimpedance analysis as a biomarker of breast density and/or breast cancer risk. Google Patents; 2009.


Ethics approval needed? Yes
Ethics applied for? Yes
Type of study: Mixed methods
Resources needed (all available):
Additional information:
Supervisor contact details: mark.mcentee@sydney.edu.au
Supervisor: Dr Warren Reed
Is there a specific project available? Yes
Is there a broad research topic/s for students to consider: Hindsight Bias in Medical Imaging
Project title:
Is this an existing project? No
Research question:
This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours
Research group type: Research Group based
Primary research interests:
- Medical image optimisation and Perception
Chief investigator:
Research team:
Aims and background

Proposed method of data collection:
Ethics approval needed? Yes
Ethics applied for? No
Type of study: Quantitative

Resources needed (all available):
Additional information: There is the potential for two students to be able to work on differentiated project on this theme
Supervisor contact details: warren.reed@sydney.edu.au
Supervisor: Mr John Robinson

Is there a specific project available? No (your name and research interest will be made available to students)

Is there a broad research topic/s for students to consider: The knowledge of a sample group of diagnostic radiography students in years 1-4 of the 4 year Undergraduate Degree on the facts on ageing and the impact of this knowledge on their approach to imaging elderly patients.

The knowledge of a sample group of University of Sydney clinical supervisors in selected sites on the facts on ageing and whether their knowledge influences their approach to imaging elderly patients.

Compare the response of a Carestream Computed Radiography system to the established Bit System and the proposed DigiBit radiographic exposure system derived by Ching, Mcentee and Robinson on a Carestream DR system.

Project title: Project 1 Determine the knowledge of a sample group of diagnostic radiography students in years 1-4 of the 4 year Undergraduate Degree on the facts on ageing and the impact of this knowledge on their approach to imaging elderly patients.

Project 2 The knowledge of a sample group of University of Sydney clinical supervisors in selected sites on the facts on ageing and whether their knowledge influences their approach to imaging elderly patients.

Project 3. Compare the response of a Carestream Computed Radiography system to the established Bit System and the proposed DigiBit radiographic exposure system derived by Ching, Mcentee and Robinson on a Carestream DR system.

Is this an existing project? No

Research question: Project 1 Is the student knowledge on the facts of ageing influenced by their extent of clinical education?

Project 2 Does the clinical supervisors knowledge on the facts of ageing influence their approach to imaging aged patients?

Project 3 Is the response of a Computed Radiography system the same as the DigiBit Radiographic Exposure System proposed by Ching, Mcentee and Robinson on a DR system?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Discipline based
University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/john.robinsonmrs.php

Primary research interests:
- Radiographic exposure determination
- Radiation dosimetry
- Radiographic image optimisation
- Paediatric Imaging
- Cardiac imaging
- Influence of student and radiographers perceptions of obese, elderly patients on their delivery of education and healthcare

Chief investigator: John Robinson

Research team: 1 - Sarah Lewis / 2 - Warren Reed / 3 - Mark MacEntee

Aims and background

Proposed method of data collection: Projects 1 and 2 would be qualitative studies using interviews and validated questionnaire. These would be pilot studies and the sample size would be approximately 30-40. These studies will require ethics approvals.

Project 3 is a quantitative study and would be following the methodology and combination of exposure factors established by Ching, Mcentee and Robinson. This study uses an anthropomorphic phantom and does not require ethics approval.

Ethics approval needed? Yes
Ethics applied for? No
Type of study: Mixed methods

Resources needed (all available):

Additional information: These projects are not existing projects but are extensions of prior honours students projects. The studies very relevant to professional practice in diagnostic radiography and the results will have educational value in the education of diagnostic radiography students. Projects 1 and 2 are similar to studies performed at Westmead Hospital by John Robinson and the obesity studies supervised by Lewis and Robinson in 2014/5. Project 3 is a comparison of a study by a honours student in 2013 and has received a large amount of international interest. This study was supervised by Mcentee and Robinson.

Supervisor contact details: john.robinsonmrs@sydney.edu.au

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CRICOS 00026A
Supervisor: Doctor Karen Dobeli

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Determining the impact of lower keV and iterative reconstruction on contrast CT

Is this an existing project? No

Research question: Does the use lower keV and iterative reconstruction (IR) provide improve image quality for contrast CT.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/karen.dobeli.php

Primary research interests:
- Computed Tomography

Chief investigator: Doctor Karen Dobeli

Research team: Doctor Peter Kench

Aims and background

Lowering keV from 120 to 100 when performing contrast CT should improve image contrast. The us of IR will reduce the noise within the reconstructed images. The amount of injected contrast could be reduced whilst maintaining the same image quality.

Proposed method of data collection: This will be a retrospective study of data stored on the PACS system. Patient CT data has been recorded for contrast CT at 120 keV and 100 keV plus IR. Image contrast and noise will be measured and compared for both groups.

Ethics approval needed? Yes

Ethics applied for? No

Type of study: Quantitative

Resources needed (all available): Internet access.

Additional information:

Supervisor contact details: karen.dobeli@sydney.edu.au
Supervisor:  Doctor Karen Dobeli

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: The impact of the timing and method of contrast injection for cardiac computed tomography.

Is this an existing project? No

Research question: Predicting the time of contrast arrival based on estimated ejection fraction predicted by patient height weight age.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/karen.dobeli.php

Primary research interests:  
- Computed Tomography

Chief investigator: Doctor Karen Dobeli

Research team: Doctor Peter Kench

Aims and background

Appropriate timing of contrast is essential for diagnosis as bolus tracking and test injection both involve serial scanning and radiation dose.

Using estimated ejection fraction may reduce the number of scans to determine the contrast arrival time therefore reducing dose to the patient.

Proposed method of data collection: Retrospective analysis method will be used. Review of an existing excel spreadsheet used for capturing teaching files has also captured the required details. e.g. patient height, age and weight. The CT tacking scan is also sent to thin PACS archive which contains 6 months data. Exclusion criteria: patients outside of a standard size.

Ethics approval needed? Yes

Ethics applied for? Yes

Type of study: Quantitative

Resources needed (all available): Internet access

Additional information:

Supervisor contact details: karen.dobeli@sydney.edu.au
Supervisor: Doctor Karen Dobeli

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: The role of contrast flush for contrast Computed Tomography of the Chest.

Is this an existing project? No

Research question: Does the saline flush used in the chest CT angiography improve image quality or workflow efficiency.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/karen.dobeli.php

Primary research interests:
- Computed Tomography

Chief investigator: Doctor Karen Dobeli

Research team: Doctor Peter Kench

Aims and background

A saline flush or 'chaser' is routinely performed post chest CT angiography but there is conflicting evidence as to whether this improves image quality or workflow efficiency.

Proposed method of data collection: Chest CT with and without a saline chaser will be compared using a retrospective study design. Two different chest CT protocols will be compared. Chest CT with without saline flush and chest CT angiography with saline flush. A retrospective study design will be used. The required information for the data analysis is stored on the patient request form and the PACS system.

Ethics approval needed? Yes

Ethics applied for? No

Type of study: Quantitative

Resources needed (all available): internet access.

Additional information:

Supervisor contact details: karen.dobeli@sydney.edu.au
Supervisor: Doctor Grace Spencer

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: The Honours project will be part of the Sydney Playground Project. See the project website for full description. 

The proposed project will focus on video data collected on uncertainty in the school playground. The student can suggest possible directions for this work and linked to the broad aims of the SPP as given below.

Project title: The Sydney Playground Project (SPP) - understanding risk and uncertainty in the playground.

Is this an existing project? Yes

Research question: The SPP is a multi-method and multi-site project that aims to test the effectiveness of a simple, innovative program for changing the views of adults (parents and teachers) towards manageable risk-taking for children with disabilities (Risk Reframing); and for increasing children’s responsibility for their own actions on the school playground through the introduction of play materials with no obvious play value into the school playground.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/grace.spencer.php

Primary research interests:
- Health Promotion
- Young People’s Health
- Health Practices and Risk
- Empowerment Theory
- Qualitative Research

Chief investigator: Anita Bundy

Research team:

Aims and background

See above.

Proposed method of data collection: The SPP is a cluster randomized-controlled trial and includes six Sydney-area based primary schools for children with disabilities. Observation data are collected during recess periods via an iPAD and video recordings on risk/uncertainty during play. Survey scales on risk
The Sydney Playground Project (SPP) - understanding risk and uncertainty in the playground.

and play are also used, along with qualitative data drawn from Risk-Reframing sessions and interviews with parents and school staff.

Ethics approval needed? Yes
Ethics applied for? Yes
Type of study: Mixed methods

Resources needed (all available): A Working with Children Check will be needed. The participating schools are in different localities across Sydney and the student must be able and willing to travel to study sites each week. Regular team meetings take place on Wednesday afternoons and the student would become an active participant of these meetings.

Additional information: The SPP is a multi-disciplinary and cross-institutional collaborative research project funded by the Australian Research Council. We have recently completed data collection in our first two schools and have now started data collection in two more schools. We are an enthusiastic and supportive team and welcome students into the project. As an Honours student, you would have access to the expertise and experience of our team, as well as tailored supervision specific to the requirements of the Honours project.

Supervisor contact details: grace.spencer@sydney.edu.au
**Supervisor:** Doctor Peter Kench

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:**

**Project title:** Diagnostic reference levels for plain radiography

**Is this an existing project?** No

**Research question:** What are the national diagnostic reference level (DRL) for different plain x-ray procedures. What are the contributing factors for high or low facility reference levels (FRL)

**This project is appropriate for students in the following degree(s):**

- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours

**Research group type:** Research Group based


**Primary research interests:**

- Dose reference levels for Radiography and Nuclear Medicine

**Chief investigator:** Doctor Peter Kench

**Research team:** Assoc. Prof. Mark McEntee, Doctor Warren Reed and Prof.Patrick Brennan

**Aims and background**

DRLs provide a national standard to which facility reference levels FRLs can be compared. Facilities can then determine if the radiation dose routinely administered is within an acceptable range. Those facilities with a high FRL are encouraged to review their equipment and techniques to determine if these can be optimised so that the administered radiation dose to the patient is reduced.

**Proposed method of data collection:** Routine plain x-ray protocols and equipment will be recorded for each facility. The radiation dose for a minimum or 10 procedures will be recorded for each facility. A sample of facilities will be selected to be representative of the population, Australian radiography practices, so that a national DRL may be established.

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Type of study:** Quantitative
Resources needed (all available):

Additional information: The development of DRL for medical imaging is a sub speciality of the Medical Imaging, Optimisation & Perception Group (MIOPeG) with the discipline of Medical Radiation Sciences. Associate Professor Mark McEntee and Professor Patrick Brennan have published extensively within this field over many years. We have three PhD students completing DRL investigations. Staff and students are collaborating with scientists from the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) on DRL projects.

Supervisor contact details: peter.kench@sydney.edu.au
Supervisor: Doctor Jennifer Smith-Merry

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Living well in the context of mental ill-health: the recovery experiences of carers.

Project title: Living well in the context of mental ill-health: the recovery experiences of carers.

Is this an existing project? Yes

Research question: What does recovery mean for those caring for someone experiencing severe and complex mental ill-health.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/jennifer.smith-merry.php

Primary research interests:
- Mental health services
- Recovery
- Mental health policy
- Qualitative methods
- Consumer collaboration

Chief investigator: Dr. Jennifer Smith-Merry

Research team: Dr. Sarah Wayland, Nicola Hancock

Aims and background

Recovery is a prominent concept in mental health services. It developed out of the consumer movement to become a core part of both policy and practice. Recovery means to live well in the context of mental ill-health. This honours project is part of a wider project, already underway, which will look at what recovery means from the position of carers. This is an innovative approach and complements our research with consumers.

Proposed method of data collection: Qualitative interviews and narrative analysis. Sample- carers of those people enrolled in Partners in Recovery Western Sydney. Sample approx. 5-15 people. This project already has ethics approval. We have funding for transcription of interviews and publication of results online and in booklet form.
Living well in the context of mental ill-health: the recovery experiences of carers.

Ethics approval needed? No
Ethics applied for? Yes Type of study: Qualitative
Resources needed (all available): Additional information:
Supervisor contact details: jennifer.smith-merry@sydney.edu.au
**Supervisor:** Professor Anne Cusick

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:** This is a specific project because data is already collected and we will get more in 2016. So you will be working with an existing and growing data set. Although the data set and type of data is established, we can spin the focus onto an area of interest to you. For example if you are interested in what values influence students to choose to study occupational therapy you can focus in on that. Or if you want to know whether the values of occupational therapy students in the 1990s are different to those in the 2000’s or 2010’s then you can look at that and use literature to explore why that might be the case. You can explore whether there is a difference between males/females, school-leavers and mature age and zone in on literature that might explain why that is the case.

**Project title:** What do they care? Values of occupational therapy students

**Is this an existing project?** Yes

**Research question:** What are the personal values of occupational therapy students and does it make any difference if we know what they are?

**This project is appropriate for students in the following degree(s):**
- Bachelor of Applied Science (Occupational Therapy) Honours

**Research group type:** Discipline based

**University Profile:** TBC

**Primary research interests:**
- Occupational Therapy
- Sociology of Professions
- Developing research capacity in professions
- Developing research capacity and productivity in trainees
- Function, activity & participation standardized measures
- Psychometric and clinimetric properties of functional assessments

**Chief investigator:** Professor Anne Cusick

**Research team:** Previous partners have included Dorcas Lam, Kay Kent

**Aims and background**

Aim: To describe the personal values of occupational therapy students

Background: There are many reasons why people behave as they do. One approach to human behaviour postulates that a person's values will influence the choices he/she makes and the actions he/she takes. At the moment very little is known about the values of occupational therapy students and practitioners even though a great deal is written about the values of occupational therapy as a profession. This study
What do they care? Values of occupational therapy students

will add to the emerging body of literature about the personal values of occupational therapy students and will explore whether or not knowing this information is useful and how it could be used.

**Proposed method of data collection:** Design: Survey study using existing data plus new data that you will collect.

Procedure: This study uses an existing standardised survey that assesses personal values. You will administer the survey again to a 2016 sample and add this into the data already collected. Then we will use SPSS to analyse the data to describe personal values of occupational therapy students. We will then select those variables that you are particularly interested to explore relationships in the data and then you will consider what you found in relation to what is already known in literature about your particular focus.

**Ethics approval needed?** Yes

**Ethics applied for?** No

**Type of study:** Quantitative

**Resources needed (all available):** This project would suit someone who prefers to work with numbers and write structured reports rather than essays.

You will spend a lot of time working in SPSS - entering data, running reports and doing analysis with the project supervisor.

**Additional information:** This project has collected data from the 1990's, 2000's and 2010's and so there are opportunities to compare values across different time.

If you are someone with multiple time commitments, this project might suit you because we can use a flexible schedule to meet and work with the data. Just make sure you have access to SPSS so you can do work between meetings.

This project can be chosen by more than one student - if this happens we will do one part together and then separate out a particular question or issue for your own unique focus.

**Supervisor contact details:** acusickot@gmail.com
Supervisor: Professor Anne Cusick

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: This is a specific project but we can spin it to your particular area of interest so long as it relates to occupational therapy mental health practice and so long as you are prepared to first take a broad look at the field using critical appraisal methods so we can answer the research question, before narrowing down to your particular interest.

Project title: Title: Mental as anything - but did these occupational therapy mental health research priorities ever get researched?

Is this an existing project? Yes

Research question: Description: Professions often set research priorities to help direct efforts of investigators to particular problems or knowledge gaps. Official occupational therapy research priorities have been set in the United Kingdom, Canada, USA and other countries but not yet in Australia. This project will provide evidence relating to Australian data and perspectives on research priorities in mental health. It is the third in a series of longitudinal studies on mental health research priorities of Australian occupational therapists. The project scope and method is described below.

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Discipline based

University Profile: TBA

Primary research interests:
- Occupational Therapy
- Sociology of Professions
- Developing research capacity in professions
- Developing research capacity and productivity in trainees
- Function, activity & participation standardized measures
- Psychometric and clinimetric properties of functional assessments

Chief investigator: Anne Cusick

Research team: Previous partners include: Michelle Bissett, Geraldine Albornoz, Ros Bye, Lynne Adamson all at different universities across Australia

Aims and background
15 years ago an occupational therapy research team with the support of OT Australia, conducted a survey of occupational therapists across Australia to identify research priorities in mental health practice,
Title: Mental as anything - but did these occupational therapy mental health research priorities ever get researched?

Education and research. 27 topics were identified to be priorities in need of research. 10 years later another team investigated whether or not any of these priority topics had occupational therapy research evidence available. In this study we will follow up the research evidence base for each of the original 27 topics to see if the knowledge gap has been filled, whether it really ever existed, and whether the process of setting research priorities has any impact on the research evidence that is ultimately generated in a profession.

Proposed method of data collection: This project will replicate a previous study done 5 years ago which used (A) Critical Appraisal methodology to determine whether or not research evidence had been generated to address a research priority in Australian occupational therapy mental health; and (B) a survey of mental health practitioners that was conducted 5 years ago to see whether or not the original research priority topics were still considered relevant or if new ones had emerged.

If one student chooses this project you can do either the critical appraisal method only or the survey only.

If two students choose this topic I can halve the scope of the project for each of you so you can do both methods - critical appraisal and survey.

Ethics approval needed? Yes
Ethics applied for? No
Type of study: Mixed methods

Resources needed (all available): Make sure you like reading journal articles and you feel comfortable analysing them in detail and writing summaries about them - there will be a lot of this if you do the critical appraisal method. Strong written English will help you here.

Make sure you like quantitative data and want to learn more about statistics if you do the survey method. This will be basic inferential statistics so a general comfort in numeracy and willingness to spend time in SPSS will help you here.

This is an ongoing team project - so you need to be comfortable sharing your findings and having team outcomes from this project.

Additional information: I have supervised many research students over 25 years in a range of disciplines including health science, public health, physio and psychology but mostly occupational therapists. Some honours graduates have gone on to PhD study, some have won prizes, most have

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Title: Mental as anything - but did these occupational therapy mental health research priorities ever get researched?

presented at professional conferences if they wanted to, and some have been part of publication teams. I love working with honours students to extend confidence, deepen their professional knowledge and skill and give them an employability edge through advanced enquiry.

Supervisor contact details: acusickot@gmail.com
**Supervisor:** Professor Anne Cusick

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:** This is a specific project but we can spin it to your particular area of interest so long as it relates to occupational therapy paediatric practice and so long as you are prepared to first take a broad look at the field using critical appraisal methods so we can answer the research question, before narrowing down to your particular interest.

Description: Professions often set research priorities to help direct efforts of investigators to particular problems or knowledge gaps. Official occupational therapy research priorities have been set in the United Kingdom, Canada, USA and other countries but not yet in Australia. This project will provide evidence relating to Australian data and perspectives on research priorities in paediatrics. It is the third in a series of longitudinal studies on paediatric research priorities of Australian occupational therapists. The project scope and method is described below.

**Project title:** Has paediatric research investigated the topics identified to be priorities of Australian paediatric occupational therapists?

**Is this an existing project?** Yes

**Research question:**

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Occupational Therapy) Honours

**Research group type:** Discipline based

**University Profile:** TBA

**Primary research interests:**
- Occupational Therapy
- Sociology of Professions
- Developing research capacity in professions
- Developing research capacity and productivity in trainees
- Function, activity & participation standardized measures
- Psychometric and clinimetric properties of functional assessments

**Chief investigator:** Professor Anne Cusick

**Research team:** There have been a number of previous partners in this project series including Michelle Bissett and Simone O'Driscoll
Has paediatric research investigated the topics identified to be priorities of Australian paediatric occupational therapists?

Aims and background
15 years ago an occupational therapy research team with the support of OT Australia, conducted a survey of occupational therapists across Australia to identify research priorities in paediatric practice, education and research. Priority topics were identified. 10 years later another team investigated whether or not they were still priorities and if any research had been done on them. In this present study we will follow up the research evidence base for each of the original topics to see if the knowledge gap has been filled, whether it really ever existed, and whether the process of setting research priorities has any impact on the research evidence that is ultimately generated in a profession.

Proposed method of data collection: This is a literature based study which will use quantitative and qualitative approaches to:
(a) summarize findings from the two previous studies, specifically the range of topics and the type of topics in paediatric occupational therapy research
(b) conduct topic specific literature reviews to determine whether or not the research priorities identified many years ago now have evidence available for therapists to use.
(c) the findings of the study will be compared with paediatric research priorities in other clinical disciplines to see how aligned occupational therapy is with national and international concerns.

Ethics approval needed? No

Ethics applied for? N/A

Type of study: Mixed methods

Resources needed (all available): You will need to be very interested in paediatric occupational therapy as this will help sustain and inspire you to wade through large amounts of literature to find out whether or not priority topics previously identified by occupational therapists have actually had research done on them and thus whether the information that therapists said they needed is now available.

You will end up having a broad overview of occupational therapy paediatric practice, approaches that are used in research with children and the gaps that still exist. If you are interested in doing paediatric practice once you graduate this could be a useful way to build your specialist knowledge in this area.

Make sure you like reading journal articles and you feel comfortable analysing them in detail and writing summaries about them - there will be a lot of this if you do the critical appraisal method. Strong written English will help you here.
Has paediatric research investigated the topics identified to be priorities of Australian paediatric occupational therapists?

Additional information: This project is big enough for two students - we will met and discuss how to split the topics and tasks so you each get an independent research project experience but you will have the benefit of working in a team.

The methodology used here is basically doing multiple/ many/ lots of CAPS/ CATS - you will become an expert on these! This project will suit students who like to manage their own time and work to deadlines.

This is an ongoing team project - so you need to be comfortable sharing your findings and having team outcomes from this project - ie team conference presentations or publications that bring together different team members work.

Supervisor contact details: acusickot@gmail.com
Faculty of Health Sciences

**Supervisor:** Associate Professor Lisa Keay

**Is there a specific project available?** Yes

**Is there a broad research topic/s for students to consider:** Safe mobility and older drivers

**Project title:** Long term changes in driving habits of older people living in the community: 3 year follow-up to a trial in north and north-western Sydney

**Is this an existing project?** Yes

**Research question:** Giving up driving is one of the most difficult decisions an older person can make. While there are concerns about safety of older drivers, driving cessation can dramatically reduce independence and social inclusion. This project will involve field work collecting data from study participants and analysis of this data. The aim of this project is to describe the long term changes to driving practices after a transport planning program.

**This project is appropriate for students in the following degree(s):**
- Any discipline

**Research group type:** Research Group based

**University Profile:** [http://sydney.edu.au/research/opportunities/supervisors/1192](http://sydney.edu.au/research/opportunities/supervisors/1192)

**Primary research interests:**
- Safe mobility, ageing, driver safety, community participation, vision loss, falls

**Chief investigator:** Lisa Keay

**Research team:** Kristy Coxon

**Aims and background**
There is evidence that older people with functional limitations are more likely to restrict their driving or give up driving altogether. However, there are other factors which influence the timeliness of this decision. We have recently completed a large trial involving a group of 380 drivers aged 75 years and older who were resident in the suburban outskirts of North and North-Western Sydney. This study evaluated the effectiveness of an education-based safe transport program.

**Proposed method of data collection:** In this honours project we plan to build on the findings of this 12 month trial by collecting data from this group again 3 years after they joined the study. The student would be involved in assessment of older people participating in the study. This includes a standardised battery of vision and cognitive tests and a structured interview about their health status, socialization, community participation and transport needs. This project will generate evidence about the longer term effectiveness of education and planning for retirement from driving as an approach to promote road safety but preserve mobility in this age group.

**Ethics approval needed?** Yes

**Ethics applied for?** Yes

**Type of study:** Quantitative

**Resources needed (all available):** Driver's license
Long term changes in driving habits of older people living in the community: 3 year follow-up to a trial in north and north-western Sydney

Additional information: The scope of the project can be changed to meet timelines. There is the opportunity to work with a large project team. The project has been highly productive and it is anticipated that the honours student would be able to publish their project results. The project team have extensive experience in student supervision and the student would be well supported. Hot desk office space will be made available as required but the student will be involved in some field work also.

Supervisor contact details: lkeay@georgeinstitute.org.au
Supervisor: Doctor Michael Millington

Is there a specific project available? No (your name and research interest will be made available to students)

Is there a broad research topic/s for students to consider: Integrating ICF framework into rehabilitation practice, management, research or pedagogy.

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/michael.millington.php

Primary research interests:
- International Classification of Function
- Community Based Rehabilitation
- Family-based Care & Support (Disability)
- Action Research/Change Theory/Group Dynamics
- Social Network Analysis
- Disability Management
- Scientist Practitioner & Evidence-based Practice
- Community (Rehabilitation) Counselling & Development
- Learning Communities / Communities of Practice
- Distance Education / Technology & Design

Chief investigator:
Research team:
Aims and background

Proposed method of data collection:
Ethics approval needed? N/A
Ethics applied for?
Type of study:
Resources needed (all available):
Additional information:
Supervisor contact details: michael.millington@sydney.edu.au
Supervisor: Doctor Margaret McGrath

Is there a specific project available? No (your name and research interest will be made available to students)

Is there a broad research topic/s for students to consider: I am interested to explore sexuality post stroke - with a focus on women's experiences of sexuality and also on healthcare professionals' willingness and readiness to address issues of sexuality in the context of rehabilitation. I am happy to discuss with interested students.

I am also particularly interested in traditional rural occupations and how these are used to transmit values across generations.

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours),
- Bachelor of Applied Science (Exercise and Sport Science) Honours,
- Bachelor of Applied Science (Occupational Therapy) Honours,
- Bachelor of Applied Science (Physiotherapy) Honours,
- Bachelor of Applied Science (MRS) Diagnostic Radiography Honours,
- Bachelor of Applied Science (Speech Pathology) Honours,
- Bachelor of Applied Science (Exercise Physiology) Honours, Any discipline

Research group type: Discipline based

University Profile: Not available at this time

Primary research interests:

- Sexuality and Disability - in particular sexuality post onset of disability and sexuality and ageing
- Ageing in Place
- Rural ageing in place
- Study of Occupation as a means to generate intergenerational connectedness and belonging

Chief investigator:

Research team:

Aims and background

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for? N/A
Type of study:

Resources needed (all available):

Additional information: I have just recently joined the faculty having previously worked at the National University of Ireland, Galway and The University of Dublin, Trinity College (Singapore). I have supervised over 40 honours theses and have a wide range of experiences in both qualitative and quantitative methods. My clinical background is in occupational therapy for older people and my research is driven by principles of collaboration and partnership. Many of my previous students have published their research with me and have presented their work at national and international conferences.

Supervisor contact details: margaret.mcgrath@sydney.edu.au
Supervisor: Doctor Clare Coleman

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: Aboriginal and Torres Strait Islander Health and Wellbeing

Project title: Indigenous identification in administrative data in regional and remote areas of Australia

Is this an existing project? No

Research question: This project has been developed to address the issue of under-representation of Indigenous people in administrative data in regional and remote areas of Australia. This is a one year qualitative research project. It will use the best assessed qualitative research methods and thematic analysis.

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours)

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/clare.coleman.php

Primary research interests:
- Aboriginal and Torres Strait Islander Health and Wellbeing
- Statistical analysis

Chief investigator: Clare Coleman

Research team: Kalinda Griffiths

Aims and background

Proposed method of data collection: The aims of this project are to:
1) Provide a literature review of the research to date that has qualitatively assessed issues of Indigenous identification in the administrative data in Australia.
2) Identify key reasons for Indigenous people choosing to or not to identify in administrative data in remote areas of Australia.

Ethics approval needed? No

Ethics applied for? No

Type of study: Qualitative

Resources needed (all available):

Additional information:

Supervisor contact details: clare.coleman@sydney.edu.au
Supervisor: Doctor Justin Scanlan

Is there a specific project available? No (your name and research interest will be made available to students)

Is there a broad research topic(s) for students to consider: Research in mental health, but open to discussion

Project title:

Is this an existing project?

Research question:

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Discipline based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/justin.scanlan.php

Primary research interests:
- Mental health
- Employment and disability / impact of unemployment
- Rasch analysis
- Quantitative research
- Survey research

Chief investigator:

Research team:

Aims and background

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for?

Type of study:

Resources needed (all available):

Additional information:

Supervisor contact details: justin.scanlan@sydney.edu.au
Supervisor: Doctor Michelle Villeneuve

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title:

Is this an existing project? Yes

Research question: Community inclusion is fundamentally a shared enterprise. There is limited research exploring the multiple perspectives of young adults with ID and their families, family, service providers and community members. There is no current study that explores the interactions and outcomes of this dynamic system on community inclusion. This study will focus on understanding the experiences of young adults with an ID from the multiple perspectives of the individual, family, organisation and community to achieve a holistic view of the interactions and outcomes of community inclusion within this system. This study will explore how these components interact with each other to provide a holistic description of barriers to community inclusion and strategies that enable community inclusion.

This project is appropriate for students in the following degree(s):
- Bachelor of Health Sciences (Honours), Bachelor of Applied Science (Occupational Therapy) Honours

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/michelle.villeneuve.php

Primary research interests:

Chief investigator:

Research team:

Aims and background

This research is concerned with describing the experience of community inclusion and the barriers and facilitators of community inclusion, including the care and support provided by family, community members, friends, and service providers that enable community inclusion. Community inclusion is greatly influenced by the transactions made with others in the community. Community inclusion of young adults with intellectual disability (ID) is beneficial for the individual but also for their family and community because it provides opportunities for individuals with ID to develop relationships and allow for meaningful engagement in activities, meaningful roles, and the opportunity to contribute as citizens. Better understanding about how to facilitate community inclusion will come from a multiple perspective case study understanding of the experience of community inclusion. Therefore the nature of information collected from nominated participants about the focal participants (young adults with ID) will be about their experiences of engaging in community activities with the focal participant, the nature of the support they provide to enable participation, and their perception of barriers and facilitators to the individuals community inclusion as well.
as their perspective on the benefits of community inclusion from their experience with the focal participant.

**Proposed method of data collection:** The methodology for this project is a qualitative case study approach. A qualitative approach will be adopted as it has the ability to capture and understand complex social phenomena from the perceptions of research participants within their natural setting (Curry, Nembhard, & Bradley, 2009). Qualitative research also allows for a holistic view from multiple perspectives to provide an in depth account of the complex interactions (Creswell, 2007). A qualitative research approach is therefore relevant as projects aims in gaining a holistic understanding of the complex interactions within community care and support that influence community inclusion.

**Ethics approval needed?** Yes
**Ethics applied for?** Yes
**Type of study:** Qualitative

**Resources needed (all available):** This can be discussed with the supervisor. There is nothing specific required.

**Additional information:**
**Supervisor contact details:** michelle.villeneuve@sydney.edu.au
Supervisor: Professor Tim Shaw

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider: eHealth is now impacting on almost all aspects of care. The honours project is focused on increasing capacity for eHealth delivery and innovation within the health sciences. A review of the literature surrounding barriers and enablers for health professionals undertaking eHealth initiatives will be undertaken during the project. Additionally, there will be opportunities to design and evaluate a framework to inform the development of an eHealth curriculum. This project has a wide scope and can be adapted to the interest area of the student.

Project title:

Is this an existing project? No

Research question:

This project is appropriate for students in the following degree(s):

- Any discipline

Research group type: Research Group based

University Profile: http://sydney.edu.au/health-sciences/about/people/profiles/tim.shaw.php

Primary research interests:

- eHealth, Health Education, Implementation Science, Research Translation

Chief investigator:

Research team:

Aims and background

Proposed method of data collection:

Ethics approval needed? Yes

Ethics applied for? No

Type of study: Qualitative

Resources needed (all available):

Additional information:

Supervisor contact details: tim.shaw@sydney.edu.au
Supervisor: Doctor Elizabeth Murray

Is there a specific project available? Yes

Is there a broad research topic/s for students to consider:

Project title: Comparing the speech and language characteristics of childhood apraxia of speech and ataxic dysarthria: a matched case study.

Is this an existing project? Yes

Research question: What are the quantifiable feature differences in a speaker with childhood apraxia of speech and a speaker with ataxic dysarthria that could facilitate improved differential diagnosis?

This project is appropriate for students in the following degree(s):
- Bachelor of Applied Science (Speech Pathology) Honours

Research group type: Discipline based


Primary research interests:
- Childhood apraxia of speech
- Severe speech sound disorders
- Phonological impairment
- Differential diagnosis
- Genetic and neurological correlates
- Treatment efficacy
- Evidence based practice

Chief investigator: Elizabeth Murray

Research team: Kimberley Docking

Aims and background

Background: Children with motor speech disorders are difficult to differentially diagnose in clinical practice (Murray et al, 2015). Sometimes these children first present to a speech pathologist and limited neurological or genetic information is available. Children with CAS and AD are perhaps the hardest to discriminate as they both have similarities with breakdowns in motor programming and features of impaired prosody or speech rhythm, lengthened sounds and syllables, resonance impairments and slow speech rate (ASHA, 2007; Duffy, 2013). However CAS is theoretically different to AD in that it is also a disorder of motor planning (ASHA, 2007) and the consequences of their breakdowns can also cause flow-on effects to language learning and other communication skills (Docking & Murdoch, 2006). Ultimately these disorders need to be discriminated as treatment and long-term outcomes can differ (e.g. children with ataxic dysarthria may require medical intervention as a priority). Currently there is limited information for paediatric cases of ataxic dysarthria (as opposed to adult onset cases, e.g. van Mourik et al, 1998) in comparison to other motor speech disorders in children. Likewise children with CAS cannot reliably be
Comparing the speech and language characteristics of childhood apraxia of speech and ataxic dysarthria: a matched case study.

differentiated from children with dysarthria as yet (ASHA, 2007). The existing literature tends to investigate at one disorder group at a time or uses typically developing children as comparisons (e.g. Bunton et al, 2000). Clinical best practice is perceptual rating of motor speech features to determine diagnosis, however this requires significant training and experience (Duffy, 2013; Murray et al, 2015). Moreover the motor speech rating scales’ validity has been questioned in paediatric cases of ataxic dysarthria (e.g. van Mourik et al, 1998 and Aarson et al, 2004).

This study will add important information on the characteristics of these two motor speech disorders to determine potential features that discriminate these disorders to be further tested in larger scale research.

Aims:
- To complete a detailed perceptual and acoustic analysis of speech characteristics (and in particular prosody) to determine any quantifiable differences in measures between two female, 8 year old speakers one with CAS and the other with AD.
- To rate the 2 speakers using existing diagnostic ratings scales for CAS and AD and compare the results across disorders and also the literature on adults with apraxia of speech and AD.

Proposed method of data collection: Research approach: quantitative, pilot study

Source and data collection: the data has already been collected as part of a larger study on treatment efficacy in CAS (Murray's PhD)

Size of sample: 2 speakers

Analysis: Samples of the participants' oral musculature assessments, diadochokinesis tasks, polysyllable word production, nonword repetition and connected speech will be further analysed to determine similarities and differences according to theoretical knowledge in areas of breakdown in each disorder and features determined to be sensitive but not yet tested in the paediatric population. Specifically perceptual analyses (e.g. percent phonemes correct, percent stress matches, syllable segregation or noticeable gaps in between syllables in speech) will be measured as well as selected acoustic prosody and suprasegmental analyses (e.g. pairwise variability index, Lowe et al, 1994 and articulation rate). Scores on completed norm-referenced testing will also be compared (e.g. language measures).

Finally both participants will be rated on the Motor Speech Rating Scale for ataxic dysarthria (Duffy, 2013) and the three ASHA consensus-based features of CAS (ASHA, 2007 operationalised in Murray et al, 2015) and the four preliminary discriminative features of CAS identified in Murray et al, 2014 to determine if they can be reliably used for differentiating these cases as intended.
Comparing the speech and language characteristics of childhood apraxia of speech and ataxic dysarthria: a matched case study.

Ethics approval needed? Yes
Ethics applied for? Yes
Type of study: Quantitative

Resources needed (all available):

Additional information: This is a great project if you are interested in neurology, areas of breakdown in the speech system and want to improve your clinical skills in hearing and determining the differences in children with complex speech sound disorders.

Supervisor contact details: elizabeth.murray@sydney.edu.au