



School of Exercise and Nutrition Sciences

2023 Honours Projects

Bachelor of Food and Nutrition Sciences (Honours) (H418)

Bachelor of Exercise and Sport Science (Honours) (H442)

deakin.edu.au

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TEDDY ANG

Bachelor of Food and Nutrition Sciences (Honours)

Former Honours & PhD student in Physiology and Metabolism at Deakin University

Honours Topic: Effects of omega-3 docosapentaenoic acid supplementation on oral glucose tolerance in an animal model of diet-induced glucose intolerance

Honours was undoubtedly the most challenging year of my undergraduate studies but also the most enriching. This is something you will hear from any Honours survivor, but the skills, experience and memories that you will acquire, if not embedded, during this 8-month roller coaster ride will be invaluable regardless of your future endeavours. For me, it was being able to work closely with a supervisory team and receive the hands-on laboratory training that I am truly grateful for, and not to mention, your very own unique masterpiece they call the 'Thesis' produced at the end. Honours is not simply another year of mundane coursework study, it is an opportunity to become part of something bigger and let it be known that the inevitable pain and struggle that accompanies it will be worth the blood, sweat and tears.

Honours Overview

The honours program in the School of Exercise and Nutrition Sciences (SENS) builds upon the foundations provided by a three-year undergraduate degree. The aim of the program is to provide students with the necessary knowledge and skills to enable them to undertake higher degree studies and advance their professional training.

The School offers the following Honours degrees:

- Bachelor of Food and Nutrition Sciences (Honours) H418
- Bachelor of Exercise and Sport Science (Honours) H442

All honours programs in the School have common features, specifically:

- Coursework units and a written thesis
- Undertaken over two semesters within a single year full time (~9 months total)
- Allocation of a supervisor and co-supervisor

Why do Honours with SENS?

- ✓ Our teaching facilities are outstanding
- ✓ We have strong industry partnerships/relations with over 150 sporting, government, community, health and food industry organisations
- ✓ Our students get 'hands-on' experience
- ✓ We provide a high-level of support and resources to assist students with their projects

You will learn to:

- ✓ Critically evaluate existing research
- ✓ Identify questions/hypotheses worth researching
- ✓ Understand and apply correct research methods to the collection and/or analysis of data
- ✓ Interpret study findings
- ✓ Understand strengths and limitations of research

Benefits of Learning Research

- ✓ Increased employability, skills transferable to many jobs/disciplines
- ✓ Learning & collaborative opportunities
- ✓ Independence to drive your ideas
- ✓ Opportunity to contribute to knowledge in your specialised area
- ✓ Gain important research skills and practical research experience

What are the career pathways after Honours?

Entry into Research/Research Degrees

Deakin University is interested in providing you with a fulfilling research experience in honours so that you will consider returning to complete a research masters or doctorate. These post-graduate research degrees allow you to further investigate in an area of interest to you and open up a range of career options; in academia, and as a leader in industry. The completion of Honours also opens up opportunities for employment in a research role within the School or other universities.

Careers

There are a range of careers that you can follow after gaining research experience in an Honours year. Aside from continuing to work in research, you can gain employment in industry such as in physiology, nutrition, fitness, and in government posts. In sport, you can work in player and team management, sports administration and development, strength and conditioning, sports science, and in coaching. The Honours degree allows you to gain some specialist knowledge in one of these areas and apply that knowledge.

KEREN BEST

Bachelor of Food and Nutrition Sciences (Honours)

Project manager at IPAN, Deakin University

Honours Topic: Parental predictors of maintenance of physical activity over three years in children

Undertaking honours was both challenging and rewarding. Honours allows you to immerse yourself in the research world and gain a range of skills in a short amount of time. The analytical writing, research processes and data management skills developed have been invaluable in enhancing my project management career.

What types of Honours projects can I do in SENS?

Food and Nutrition Sciences

- Nutrition choices and eating patterns;
- Salt, appetite control and blood pressure regulation;
- Fatty acids, inflammation, cognition and blood pressure regulation;
- Proteins, sport performance and muscle gain;
- Nutrition and ageing;
- Health effects of phytochemicals and minerals;
- Nutrition and gut bacteria;
- Food choice and perceptions;
- Food policy and safety;
- Early childhood influences on eating;
- Plus more!

Exercise and Sport Science

- Health and injury in work and sport;
- Physical activity;
- Obesity prevention;
- Coaching practices;
- Exercise physiology;
- Women's health;
- Behavioural aspects of sport;
- Skill acquisition;
- Motor control and motor learning;
- Biomechanics and performance analysis,
- Strength and conditioning;
- Plus more!

*****Refer to the back of this handbook for the 2023 Honours projects*****

Who supervises Honours projects?

Supervisors closely guide you through this first experience of research. They will assist you in planning your research, data collection and analysis and writing it in thesis format. In addition, they will offer you support in the planning and presentation of your oral assessments. All supervisors are experienced researchers who understand the rigours and requirements of your project and have knowledge of your topic area.

How do I choose a topic?

Each year the School provides a list of projects for you to peruse and choose those that interest you. We then advise that you speak to supervisors of these projects to gauge your interest and then to nominate your preferred projects during the application process. We aim to provide you with one of your preferences.

Can I develop my own project?

You are best to take a directed project in this first year of exposure to research, as it allows for the supervisor to direct the research in an area they know well. If you have a passion for something you may be able to tailor your Honours project to fulfil your interest or use that idea for a further degree; Honours is about research training.

*****Refer to the back of this handbook for the 2023 Honours projects*****

LILIA CONVIT

Bachelor in Exercise and Sports Sciences (Honours)

Current PhD Student in Female Exercise Physiology/Research Assistant/Casual Academic

Honours Topic: Sodium bicarbonate and sodium citrate as acute hyperhydration agents: indices of hydration status, buffering measures and gastrointestinal symptoms

The honours years was a wonderful experience, full of new challenges. COVID-19 allowed me to understand how resilient we can be. We had to reinvent the project, work with secondary data, learn and present our findings through Zoom. We were able to move this great learning experience to online mode and survive. I met great people and did a lot of networking. Honours allowed me to continue my career pathway with a PhD (with a scholarship), to start a research assistant role at Deakin and continue as a casual academic, while juggling with my private practice as a sports dietitian and my personal life as a wife and mum of two. The best advice I can give to anyone thinking about enrolling in an Honours year will be to go for it! If it is not now, when? Just be as organised as possible and plan ahead. Unexpected changes are always around the corner.

What happens in the Honours year?

Honours is an intense year and you will need to commit ~35 hours a week. Your Honours degree is mostly assessed on research but there is also a coursework component. Both parts count towards your final mark. The coursework is directed towards giving you the necessary research skills to complete your research project, and provides you with research training. There are two units in Semester 1, Research Methods (unit code HBS400) and Developing Research Skills (HSE401). They have classes and assignments to complete that incorporate aspects of your project. The remainder of your research is conducted in Semester 2 and this is where you complete your data collection, analyse the data and write a thesis (HSE402/HSN414). Aspects of these units are discussed below.

Research methods (HBS400; cloud-based unit)

This unit examines the ethics of research, critiquing research and an elective. It is directed towards your research and you can choose to take the quantitative (cloud), qualitative (cloud) or lab-based (on-campus, Burwood) stream. This unit is designed to help you develop the skills and knowledge needed to develop the methods for your research project.

Literature review and research proposal (HSE401)

You are asked to read and review the previously published research (i.e. the literature) in the area of your project, find aspects that have not been fully investigated and then propose your research that will answer a specific research question. This will provide you with a thorough understanding of your area of research, form the introduction to your thesis and allow you to understand how your research project fits within the current research literature. You will also present your literature review and research proposal to your peers as an oral presentation.

Thesis (HSE402/HSN414)

After you have planned your research and received ethics approval (if required), you are ready to collect your data. The final step is to analyse and write your research in a thesis format. This 12,000 word document is set out in chapters and describes the existing research literature, your research methods, the results of your research and then discussion of your findings. You will then present your findings at the School Research day at the end of the year.

Timelines

The year is short and intense, beginning with an orientation session in February and completing with your oral presentation of your research in October. In between, there is plenty to keep you busy.

What are the admission requirements?

Bachelor Degree or major in a related discipline with a WAM of at least 65 in all level 3 and level 4 Deakin units (or in final year units for awards from other providers). Eligible students with degrees from other universities are welcome to complete their Honours year at Deakin University.

How do I apply for Honours?

To apply for Honours in the School of Exercise and Nutrition Sciences there are three steps:

1. Submit a Course Application

- You will need to submit a course application via the [Deakin applicant portal](#) by Sunday November 27th 2022 and submit your project preferences (see below) in addition to your other supporting documents. Supporting documents can include academic transcripts, personal statement, course completion certificates etc. *Note: Deakin students are not required to submit academic transcripts.*
- If you are unable to upload your documents or have any questions about the application portal, please email enquire@deakin.edu.au or call (03) 9244 6333

2. Review Project Offerings and Complete Your Project Preference Form

- Please review carefully the list of Honours research projects that the School is offering in 2023. This project booklet will be available on the [school's honours program page](#).
- When you have selected the projects you are interested in, it is very important that you contact the named Supervisor (contact details are provided with each project) to discuss the proposed project/s. This will allow you to determine whether the project meets your career goals and allows the supervisor to determine whether you have the appropriate academic background to complete the research project.
- Once you have contacted the Supervisors of the projects that interest you, please complete the [online project preference form](#).
- Please direct queries related to the project preference selection to Dr Aaron Fox at sens_honours@deakin.edu.au

How are projects allocated?

Projects are allocated based on a combination of student project preferences, supervisor's student preferences and WAM. Students are advised that allocation to research projects is a competitive process and a student cannot be assured of being assigned to their choice of research project.

The list of available research projects reflects research being undertaken by Deakin staff and the availability of resources at the date of publication. It is the nature of research that projects change focus and direction over time and the final project therefore may not be exactly as described.

In rare cases, research staff and resources may become unavailable during the period when the project is being undertaken. If this occurs, the School will offer the student the best available alternative which will provide the opportunity to satisfy course requirements.

When do I find out if I have been accepted?

It is anticipated that successful candidates will be advised of their offer mid-December 2022.

Additional Information

You can also contact the Honours Coordinator on the contact details provided below:

Dr Aaron Fox

Ph: (03) 5247 9720

Email: sens_honours@deakin.edu.au

Honours Projects for 2023

The following pages provide a description of honours projects on offer within the school for 2022. Each project contains a project number, which you will need to provide when submitting your project preference form.

The primary supervisor contact details are provided for each project. It is strongly advised that you contact and discuss the project with the supervisor before including it on your preference list. These discussions will also allow you to obtain further information about the project and how it aligns to your interests. Some of the projects listed in this booklet are also broad and encompass multiple potential projects. Discussions with the listed supervisor(s) will provide more details about the possibilities within these broad areas. Each primary supervisor's name is linked to their profile at the end of this booklet, so please click these for more information on each supervisor.

Each project also has a location listed for where the project can be conducted. Please note that projects listed with an 'overseas or remotely' location are advisable for international applicants. These projects that can be completed remotely are, however, not limited to off-campus students and could also be completed by local students at the Melbourne Burwood or Waurin Ponds campuses.

Projects are grouped into the broad disciplines of Biomedicine, Exercise and Health or Disease, Food or Nutrition Science, Health or Food Behaviours, Public Health or Health Promotion, Sports Sciences, and Sustainability. Specific research topic area(s) are also provided with each project.

Biomedicine	9
Exercise and Health or Disease	11
Food or Nutrition Science	20
Health or Food Behaviours	28
Public Health or Health Promotion	30
Sports Sciences	38
Sustainability	45

HONOURS PROJECTS 2023: BIOMEDICINE

Glucose, lipid and amino acid metabolism in muscle and liver

Project Number: FN_1

Primary Supervisor: Clinton Bruce

E-mail: clinton.bruce@deakin.edu.au

Phone: 9244 6684

Co-Supervisor(s): Greg Kowalski; Chris Shaw

Research Mentor(s):

Topic Area(s): Metabolism; physiology

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: We have a number of potential projects that can be developed according to individual interests. Projects will be particularly suited to students with a strong interest in the area of nutritional physiology, fuel metabolism and/or biochemistry. Potential areas of study include: - Understanding how liver glucose production is regulated following ingestion of various nutrients - Examining mechanisms of insulin resistance and hyperinsulinemia - Metabolic and hormonal responses following protein-carbohydrate co-ingestion - Understanding how lipids regulate skeletal muscle mass and mitochondrial function. Projects may involve human and animal experiments and will develop a broad range of skills including analytical laboratory skills. All techniques will be taught as part of honours training. Our projects may be of interest to both Food and Nutrition Sciences as well as Exercise and Sport Science students.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to work with blood and/or muscle biopsy samples; Laboratory techniques; Quantitative analysis (statistics)

Regulation of muscle adaptations to physiological stress by non-coding RNAs

Project Number: ESS_1

Primary Supervisor: Dr. Adam Trewin

E-mail: a.trewin@deakin.edu.au

Phone: 477840280

Co-Supervisor(s): Prof. Glenn Wadley; A/Prof. Severine Lamon

Research Mentor(s):

Topic Area(s): Exercise physiology; Cell biology; biochemistry

Project Location: Melbourne Burwood campus

Project Description: Cardiac and skeletal muscle cells adapt to stressful physiological stimuli in various ways, such as by increasing the amount of mitochondria. However the molecular mechanisms that mediate these responses are not fully understood. We have recently identified several interesting genes known as non-coding RNA (ncRNA), which may play a role in regulating muscle adaptations. In this project, the student will be involved in growing cultured muscle cells and experimentally modifying the expression of a ncRNA. Then, they will measure the expression of specific genes or proteins to analyse whether this affects that regulate muscle function. This is ideally suited to students wishing to pursue postgraduate study, a future career in biomedical or physiology research (i.e. a PhD) or medicine. By completing this Honours project, students will learn fundamentals of scientific research and various biochemistry and molecular biology techniques that are common in physiology and biomedical research.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program)

Skills Developed: Primary data collection skills; Laboratory techniques; Image and/or video analysis; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: BIOMEDICINE

Quantifying oxidative stress in skeletal muscle following endurance exercise

Project Number: FN_2

Primary Supervisor: Glenn Wadley

E-mail: glenn.wadley@deakin.edu.au

Phone: 92446018

Co-Supervisor(s): Dr Shaun Mason

Research Mentor(s):

Topic Area(s): Exercise physiology

Project Location: Melbourne Burwood campus

Project Description: Oxidative stress during exercise is due to increased production of reactive oxygen species (ROS) in the contracting skeletal muscle. The increased ROS is thought to be one of the mechanisms that stimulates muscle to adapt to exercise training. This project will use mass spectrometry to identify for the first time all the proteins that are altered in human skeletal muscle by ROS during a bout of endurance exercise. All laboratory techniques will be taught to the student as part of the honours training. By completing this project, students will become proficient at laboratory techniques that are common in physiology and biomedical research and also learn cutting-edge techniques utilizing mass spectrometry.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability to work as a team member

Skills Developed: Ability to work with blood and/or muscle biopsy samples; Laboratory techniques; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: EXERCISE AND HEALTH OR DISEASE

Evaluation of key factors associated with female injuries in youth Netball Players

Project Number: ESS_2

Primary Supervisor: Dominique Condo

E-mail: dominique.condo@deakin.edu.au

Phone: 03 9244 5487

Co-Supervisor(s): TBC

Research Mentor(s): Monica Kelly

Topic Area(s): Sports nutrition; Exercise; sport science

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: Netball is a physically demanding, high impact sport requiring a high degree of agility, speed and strength. The training demand of the sport often leads to a high incidence of overuse musculoskeletal injuries, such as stress fractures. Numerous factors may influence the risk of stress fractures, including mechanical loadings as well as seasonal training and detraining. Predetermined factors such as age, genetic predisposition and gender can also impact the risk of injury in athletes. The key gender difference is the prevalence of menstrual dysfunction in highly active female athletes. Nutritional factors including dietary and energy deficiencies as well as poor sleeping patterns may indirectly be associated with increased injury risk. Given the known risk of stress fractures in female athletes and the highly demanding training schedules, investigating the risk of injury in junior netball players and assessing sleep and nutritional intake in this population group is warranted.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other project related tasks

Skills Developed: Recruitment of participants; Primary data collection skills; Quantitative analysis (statistics)

Understanding young children's movement behaviours and associations with psychosocial health

Project Number: ESS_3

Primary Supervisor: Dr Katherine Downing

E-mail: k.downing@deakin.edu.au

Phone: 03 9244 6088

Co-Supervisor(s): Dr Lauren Arundell

Research Mentor(s):

Topic Area(s): Physical activity

Project Location: Overseas or remotely

Project Description: There is potential for this project to focus on cross-sectional or longitudinal associations between 24-hour movement behaviours (individually or all three behaviours) and different aspects of psychosocial health, depending on the students' interests. This project will involve secondary analysis of data from Let's Grow, a large NHMRC-funded study examining 24-hour movement behaviours (i.e., physical activity, sedentary behaviour and sleep) in young children. The study includes accelerometer-derived and parent-reported measures of 24-hour movement behaviours at ages 2 and 3 years, and parent-reported measures of psychosocial health (health-related quality of life and socio-emotional outcomes) at age 3 years.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects)

Skills Developed: Quantitative analysis (statistics)

HONOURS PROJECTS 2023: EXERCISE AND HEALTH OR DISEASE

Understanding the impact of work pattern on risk factors for dementia in people with type 2 diabetes

Project Number: ESS_4

Primary Supervisor: Prof David Dunstan

E-mail: david.dunstan@deakin.edu.au

Phone: +61 3 924 46313

Co-Supervisor(s): Dr Michael Wheeler

Research Mentor(s):

Topic Area(s): Exercise; sport science; Exercise physiology; Physical activity

Project Location: Melbourne Burwood campus

Project Description: Dementia is a growing health and economic challenge. In the absence of a cure, finding strategies to reduce the risk of developing dementia is a promising approach. This is especially important in people with type 2 diabetes (T2D) who have +50% increased risk of dementia. But not all people with T2D go on to develop dementia. Better management of diabetes can reduce dementia risk through improvements in physical activity, glucose regulation, and blood pressure regulation. However, office workers with T2D now face a major challenge to optimal diabetes management: deciding whether to work from home or work in the office. It is unknown what impact these different work models have on modifiable risk factors for dementia. Risk factors will be monitored in workers with T2D (40-60 years) on office days and work-from-home days using wearable technology; participants will serve as their own control. Findings will help inform guidelines on the optimal work pattern to reduce dementia risk.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other project related tasks

Skills Developed: Recruitment of participants; Primary data collection skills; Survey development; Quantitative analysis (statistics)

Regulation of skeletal muscle metabolic adaptations in response to exercise training

Project Number: ESS_5

Primary Supervisor: Kirsten Howlett

E-mail: kirsten.howlett@deakin.edu.au

Phone: 03 52272563

Co-Supervisor(s): Dr Chris Shaw;

Research Mentor(s):

Topic Area(s): Exercise physiology; Biology of health; disease

Project Location: Geelong Waurn Ponds campus

Project Description: Exercise training results in adaptations that improves metabolism and physiological processes that underpin the maintenance of health, and prevention and treatment of chronic disease. An emerging area of research highlights that changes or remodelling of skeletal muscle and the structural components called the extracellular matrix (ECM) may be an important adaptation following exercise training that influences metabolic and physiological processes in skeletal muscle. The aim of this study will be to determine if improvements in metabolism and skeletal muscle adaptations induced by exercise training are regulated by changes in skeletal muscle ECM. Determining the role that the ECM plays in response to aerobic exercise training could reveal potential benefits for targeting the ECM through specific exercise intervention or development of drug targets for the prevention and treatment of chronic disease such as insulin resistance and type 2 diabetes.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Ability to work as a team member

Skills Developed: Primary data collection skills; Ability to work with blood and/or muscle biopsy samples; Laboratory techniques

HONOURS PROJECTS 2023: EXERCISE AND HEALTH OR DISEASE

Understanding the development of impaired cardiac function in obesity.

Project Number: ESS_6

Primary Supervisor: Kirsten Howlett

E-mail: kirsten.howlett@deakin.edu.au

Phone: 03 52272563

Co-Supervisor(s): Dr Chris Shaw

Research Mentor(s): Mark Renton

Topic Area(s): Biology of health; disease

Project Location: Geelong Waurn Ponds campus

Project Description: Obesity-related cardiovascular disease is a leading contributor to death worldwide. In individuals that are obese many suffer from impaired cardiac function, which over time can progress to heart failure. This specific form of cardiac dysfunction is called obese cardiomyopathy and currently there are no effective treatments. Identifying the underlying mechanisms involved is the next critical step in the development of a treatment. An emerging area of research highlights that changes or remodelling of the heart muscle and associated structural components (extracellular matrix) is linked to altered cardiac function in obesity. This project aims to explore how changes in the structure and function of the heart muscle influences cardiac function in obesity. The outcomes from this project will reveal new aspects about the basic biology underpinning obese cardiomyopathy and potentially identify new molecular targets for therapeutic prevention of this disease or to slow disease progression.

Skills/Attributes Required: Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Ability to work as a team member

Skills Developed: Primary data collection skills; Ability to work with blood and/or muscle biopsy samples; Laboratory techniques

New telehealth approaches for delivering exercise programs for older with chronic disease

Project Number: ESS_7

Primary Supervisor: Dr Paul Jansons

E-mail: paul.jansons@deakin.edu.au

Phone: 61402283624

Co-Supervisor(s): Associate Professor David Scott; Jakub Mesinovic

Research Mentor(s): Costas Glavas

Topic Area(s): Exercise; sport science; Exercise physiology; Physical activity

Project Location: Melbourne Burwood campus

Project Description: Older adults with chronic health disorders are likely to benefit from lifestyle programs involving exercise and nutrition, which should be specifically-tailored to meet individual needs. Such interventions also need to be accessible, and telehealth, a mode of health care delivery that uses information and communications technologies, can play a role in improving accessibility for older adults with chronic health disorders. Nonetheless, further research is required to explore the effectiveness of telehealth for improving health in older adults with chronic disease, and ensure it is acceptable in these populations. Our program of research includes several trials of new telehealth methods including the use of novel voice controlled intelligent personal assistant (e.g. Amazon Alexas) which support conversation based interactions for delivering lifestyle prescriptions in older adults. We encourage students with an interest in these topics to contact us to discuss potential projects.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Exercise prescription and monitoring; Quantitative analysis (statistics); Qualitative analysis

HONOURS PROJECTS 2023: EXERCISE AND HEALTH OR DISEASE

Establishing a plasma proteomics profile for glycaemic control and type 2 diabetes risk

Project Number: ESS_8

Primary Supervisor: Shaun Mason

E-mail: s.mason@deakin.edu.au

Phone: 03 9244 6577

Co-Supervisor(s): Prof Glenn Wadley; A/Prof Michelle Keske

Research Mentor(s):

Topic Area(s): Exercise physiology; Endocrinology; Metabolism

Project Location: Melbourne Burwood campus

Project Description: There is a pressing need for better prognostic biomarkers for individuals at risk for developing type 2 diabetes (T2D), and for biomarkers of response to therapies in those with T2D. This project will involve measuring up to 1000's of proteins in plasma samples taken from population groups with varying degrees of glycaemic control and diabetes risk (healthy people without T2D, those with a family history of diabetes and those with overt T2D) using precise proteomics techniques. Study findings will help to establish a plasma proteomics profile associated with glycaemic control and other diabetes-related health markers, and explore effects of exercise training on the plasma proteome. When combined with other 'omics data, these findings can help to elucidate pathways of diabetes development and treatment effects, and provide effective tools for T2D screening, diagnosis, and prognosis. This project will develop laboratory and analytical skills as well as quantitative analysis skills.

Skills/Attributes Required: Knowledge and background in anatomy and/or physiology; Ability to learn relevant software programs (e.g. Excel, statistical software program)

Skills Developed: Ability to work with blood and/or muscle biopsy samples; Laboratory techniques; Quantitative analysis (statistics)

Implementing a clinical exercise program for cancer survivorship

Project Number: ESS_9

Primary Supervisor: Dr Niamh Mundell

E-mail: niamh.mundell@deakin.edu.au

Phone:

Co-Supervisor(s): Ms. Rebecca Turnbull; Assoc. Prof Steve Fraser

Research Mentor(s):

Topic Area(s): Exercise; sport science; Exercise physiology; Clinical exercise

Project Location: Melbourne Burwood campus

Project Description: Cancer is a leading cause of illness and health system expenditure in Australia. There are currently over 1 million Australians living with or having had cancer, and the survival rate is increasing. However, many cancer treatments are associated with adverse effects to health. There is a need to implement interventions capable of addressing multiple treatment-induced adverse effects. The Thrive Program is a 12-week group-based exercise and educational intervention designed to improve muscular strength, mobility, cardiovascular fitness, balance, and bone health in cancer survivors. The program also aims to reduce adverse health effects associated with common treatments for cancer (e.g. radiotherapy, chemotherapy, hormone therapy), and provide a supportive environment for cancer survivors to exercise throughout all cancer stages. The Honours project will investigate the efficacy and feasibility of implementing the 12 week program for cancer survivors in a community exercise clinic.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Ability to work as a team member

Skills Developed: Exercise prescription and monitoring

HONOURS PROJECTS 2023: EXERCISE AND HEALTH OR DISEASE

Determining pain phenotypes in adults with low back pain to improve treatment efficacy

Project Number: ESS_10

Primary Supervisor: Dr Patrick Owen

E-mail: p.owen@deakin.edu.au

Phone: 92445013

Co-Supervisor(s): Dr Jamie Tait

Research Mentor(s):

Topic Area(s): Exercise physiology; Clinical exercise; Physical activity

Project Location: Overseas or remotely

Project Description: Low back pain is the leading cause of disability worldwide and affects approximately four million Australians (16% of the population). Whilst low back pain is a heterogenous condition that varies in clinical presentation, 90% of cases are deemed 'non-specific' (i.e. a definitive cause of pain that meaningfully influences treatment cannot be identified). This is further complicated by 'flare-ups' that can leave patients physically immobilised for an undefined period of time. It is therefore pertinent to improve our understanding of how we conceptualise low back pain in an attempt to better characterise and subsequently treat patients. This project will identify clinical phenotypes using variables related to physical function and the experience of pain. The ultimate goal of this work is to enhance our understanding of low back pain presentations and its clinical manifestations, so that future treatment approaches may be tailored to the key features of this debilitating condition.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Ability to work as a team member

Skills Developed: Quantitative analysis (statistics); Data management

If you're not measuring, you're guessing: Non-invasive assessment of the anaerobic threshold

Project Number: ESS_11

Primary Supervisor: Jonathan Rawstorn

E-mail: jonathan.rawstorn@deakin.edu.au

Phone: 92468461

Co-Supervisor(s): Kim Way; Clint Miller

Research Mentor(s):

Topic Area(s): Exercise; sport science; Clinical exercise

Project Location: Melbourne Burwood campus

Project Description: The anaerobic threshold (AT) is an important indicator of sub-maximal exercise performance for athletic, healthy, and clinical populations but specialised/invasive measurement techniques are not feasible for many practitioners. We will investigate the validity and sensitivity of a method for detecting AT from heart rate variability. Students will gain skills in lab- and field-based exercise testing, measurement of respiratory gas exchange and blood lactate concentration, study design, quantitative data analysis, and applying exercise test data to improve exercise training. We expect to develop an HRVT detection method that can assess exercise performance, including changes over time. We plan to extend this work by developing real-time data analysis and reporting tools that integrate with existing digital health technologies for exercise training. This will lead to additional research opportunities for students interested in higher research degrees (Masters, PhD).

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts

Skills Developed: Recruitment of participants; Primary data collection skills; Exercise prescription and monitoring; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: EXERCISE AND HEALTH OR DISEASE

Remote assessment and coaching of resistance exercise training

Project Number: ESS_12

Primary Supervisor: Jonathan Rawstorn

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Phone: 92468461

Co-Supervisor(s): Yuxin Zhang; David Scott

Research Mentor(s):

Topic Area(s): Exercise; sport science; Applied Sports Science; Clinical exercise

Project Location: Melbourne Burwood campus

Project Description: Resistance exercise is important for health and performance in athletic, healthy, and clinical populations. Individualised coaching helps ensure training is safe and effective, but in-person coaching is inaccessible for many people. Growing evidence shows the benefits of remotely coached aerobic exercise, but challenges measuring performance mean resistance training has received less attention. We are investigating a new method using smartphone cameras and machine learning software to address this gap, and we want to determine if exercise practitioners can use the system to accurately determine key aspects of resistance training volume and technique. Students will gain skills in exercise assessment, digital health, study design, quantitative data analysis, and user experience assessment. Planned integration of this method into an existing remote exercise coaching platform will lead to additional research opportunities for students interested in higher research degrees (Masters, PhD).

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Exercise prescription and monitoring; Image and/or video analysis; Quantitative analysis (statistics)

Jumping to Health: Is the Jump Rope for Heart Program

Project Number: FN_3

Primary Supervisor: Shannon Sahlqvist

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Phone: 03 9251 7782

Co-Supervisor(s): Alfred Deakin Prof Anna Timperio

Research Mentor(s):

Topic Area(s): Physical activity

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: The Heart Foundation's Jump Rope for Heart Program has been implemented in Australian schools since 1983. Each year it reaches over 300,000 students from 1,300 schools. A team of researchers within the School have been working with the Heart Foundation to evaluate the Program. In 2023, they will collect data from children to determine the impact of the Program on children's (a) physical activity (measured via accelerometry), (b) fundamental movement skills, (c) cardiorespiratory and muscular fitness and (d) behavioral outcomes. We are now seeking students who are interested in examining the impact of this national Program on any of these outcomes. In doing so, students will gain experience in the evaluation of complex real-world interventions as well as data collection, analysis and interpretation and working within a wider team.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other projected related tasks

Skills Developed: Recruitment of participants; Primary data collection skills; Quantitative analysis (statistics); Qualitative analysis

HONOURS PROJECTS 2023: EXERCISE AND HEALTH OR DISEASE

Determining the role of insulin on muscle glucose uptake

Project Number: ESS_13

Primary Supervisor: Chris Shaw

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Phone: 03 5227 3394

Co-Supervisor(s): Prof Clinton Bruce; Dr Andrew Betik

Research Mentor(s): Vicky Kuriel

Topic Area(s): Exercise physiology

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: Insulin is a key hormone that regulates fuel utilization and storage. One of its most recognized functions is to control blood glucose concentrations, primarily by stimulating glucose uptake into skeletal muscle and other tissues. However, despite decades of work, the precise mechanisms regulating insulin action are not well understood. Current dogma links the activation of the insulin signalling pathway as the primary driver of glucose uptake after a meal. Further, it is thought that defects in early insulin signalling events result in the development of insulin resistance in key tissues. Our current projects are exploring how elevations in insulin and also glucose after a meal activate signalling pathways in skeletal muscle and regulate glucose uptake. We are also examining the impact of high insulin concentrations on metabolic and cardiovascular disease risk factors in young, healthy individuals.

Skills/Attributes Required: Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to work with blood and/or muscle biopsy samples; Laboratory techniques; Quantitative analysis (statistics)

Are mitochondria secreted into the circulation during endurance exercise?

Project Number: FN_4

Primary Supervisor: Glenn Wadley

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Phone: 92446018

Co-Supervisor(s): Dr Adam Trewin; A/Prof Severine Lamon

Research Mentor(s): Jessica Silver

Topic Area(s): Exercise physiology

Project Location: Melbourne Burwood campus

Project Description: Mitochondria are secreted into the circulation by tissues or cells and it is postulated that they may play a role in the adaptive response or contribute to cross-talk between tissues. However, it is unknown if the secretion of mitochondria are altered by stressors such as exercise. Pilot experiments will first be conducted to characterise the quality and quantity of mitochondria isolated from human blood samples. An exercise study will then be conducted in healthy participants with blood samples taken before and after a bout of endurance exercise. The mitochondria will be isolated from the blood and the quantity will be measured. All laboratory techniques will be taught to the student as part of the honours training. By completing this project, students will become proficient at exercise/VO₂max testing of healthy volunteers and also at laboratory techniques that are common in physiology and biomedical research, including various mitochondrial measurements.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Ability to work with blood and/or muscle biopsy samples; Laboratory techniques

HONOURS PROJECTS 2023: EXERCISE AND HEALTH OR DISEASE

Project(s) focused on Blood Flow Restricted (BFR) exercise

Project Number: ESS_14

Primary Supervisor: Stuart Warmington

E-mail: stuart.warmington@deakin.edu.au

Phone: (03)92517013

Co-Supervisor(s): TBC

Research Mentor(s):

Topic Area(s): Exercise; sport science; Applied Sports Science; Strength; Conditioning; Exercise physiology; Clinical exercise

Project Location: Melbourne Burwood campus

Project Description: Blood flow restriction (BFR) exercise is a training method that somewhat amazingly delivers outcomes similar to traditional strength training, but when using only light training loads. This even includes light aerobic exercise as well as light resistance exercise. Therefore, the versatility of this training method is extremely diverse, with relevance to athletes, within clinical rehabilitation, ageing populations, people unaccustomed to exercise, or players returning from injury. Our globally recognized team focused on BFR exercise can tailor projects to suit students interested in this valuable and attractive novel technique. These may be focused on the application of BFR to areas such as: * Strength and Conditioning * Clinical population health * The physiology of skeletal muscle (performance/growth) * ...and more The best option to explore what we can offer is to get in touch to learn more, and to talk about your interests and what's possible.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Laboratory techniques; Exercise prescription and monitoring; Quantitative analysis (statistics)

Exploring the role of sarcopenia in exercise intolerance in adults living with atrial fibrillation

Project Number: ESS_15

Primary Supervisor: Dr. Kim Way

E-mail: kim.way@deakin.edu.au

Phone: 9246 8894

Co-Supervisor(s): A/Prof David Scott; A/Prof Michelle Keske

Research Mentor(s):

Topic Area(s): Exercise physiology; Clinical exercise

Project Location: Melbourne Burwood campus

Project Description: Up to 45% of adults with atrial fibrillation (AF) suffer from exercise intolerance, the body's inability to keep up with the energy demands required for physical exertion and leads to shortness of breath and fatigue while performing activities of daily living. It is unknown if low muscle mass and poor muscle function as a result of sarcopenia may be a cause of this symptom. Exercise training is effective for improving exercise intolerance, muscle function and muscle mass in other chronic disease populations, however there are no exercise guidelines for AF patients. This project aims to explore the role of sarcopenia in exercise intolerance and the effect of exercise training to manage these outcomes. Skills developed: cardiopulmonary exercise testing, strength testing, cardiovascular ultrasound techniques, blood sampling, dual energy x-ray absorptiometry analysis, quantitative statistical analysis, research writing skills. There may be the opportunity to supervise exercise sessions.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to work with blood and/or muscle biopsy samples; Laboratory techniques; Exercise prescription and monitoring; Quantitative analysis (statistics); Body composition analysis – DEXA

HONOURS PROJECTS 2023: EXERCISE AND HEALTH OR DISEASE

The feasibility of high-intensity interval resistance exercise in cardiovascular disease patients

Project Number: ESS_16

Primary Supervisor: Dr. Kim Way

E-mail: kim.way@deakin.edu.au

Phone: 9246 8894

Co-Supervisor(s): Dr. Hannah Thomas; Dr. Lewan Parker

Research Mentor(s):

Topic Area(s): Exercise physiology; Clinical exercise

Project Location: Melbourne Burwood campus

Project Description: People living with cardiovascular diseases (CVD) often present with low muscle mass, poor muscle pump function, and an array of CVD risk factors. Resistance exercise is heavily underutilized in these patients, despite the known benefits of engaging in such exercise. Cluster sets, or interval resistance exercise, may reduce fatigue and the haemodynamic responses that are observed with traditional resistance exercise, which in turn, may improve the quality of the exercise performance and safer implementation of higher intensities of resistance exercise in CVD patients. The aim of this project is to describe and compare the acute cardiovascular responses of high-intensity traditional resistance exercise to high-intensity interval resistance exercise in CVD patients. Skills developed: continuous blood pressure monitoring, cardiopulmonary exercise testing, strength testing, cardiovascular ultrasound techniques, blood sampling, quantitative statistical analysis, research writing skills.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to work with blood and/or muscle biopsy samples; Laboratory techniques; Exercise prescription and monitoring; Quantitative analysis (statistics)

Exercise performance following immunisation

Project Number: ESS_17

Primary Supervisor: Dr Craig Wright

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Phone: 03 5247 9266

Co-Supervisor(s): Dr Giselle Allsopp

Research Mentor(s):

Topic Area(s): Exercise physiology

Project Location: Geelong Waurin Ponds campus

Project Description: The fear of adverse reactions are more often than not, the reason why 60% of Australians do not receive seasonal vaccinations. A season viral endemic leads to an increase in incidence rates amongst the entire population leaving those susceptible more vulnerable. Exercise is known to improve the efficacy of vaccination. Despite anecdotal evidence, little is known about the exercise and physiological response to exercise following vaccination. Therefore there are no exercise-immunisation guidelines leading to low vaccination rates among the healthy active populations. Providing this data may increase vaccination rates amongst the Australian population which in turn may reduce the morbidity and mortality and lessen the burden on the Australian health care system. This study seeks to collect pilot data on the interaction between immunisation and exercise tolerance.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to work with blood and/or muscle biopsy samples; Laboratory techniques; Exercise prescription and monitoring; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: FOOD OR NUTRITION SCIENCE

How and when do children develop eating behaviours, and how are these related to health outcomes?

Project Number: FN_5

Primary Supervisor: Alissa Burnett

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Phone:

Co-Supervisor(s): Jazzmin Zheng

Research Mentor(s):

Topic Area(s): Public health nutrition; Health promotion (including policy)

Project Location: Overseas or remotely

Project Description: Why do some children love food and others are fussy? Are children born this way or it is a result of the way their parents feed them? And do these things affect their weight and dietary intake? We will have data from parents of babies aged 0-12 months exploring the children's eating behaviours, weight, and dietary intake, as well as the parent's feeding practices. This secondary data analysis will draw on this data, the research question can be informed by the student's interests and could include: - Understanding the development of children's eating behaviours (food avoidance and food approach); what influences the development of children's eating behaviours, and when do they develop? - Understanding parental feeding practices and how these influence children's eating behaviours, dietary intake and weight. - Examining the influences on child dietary intake and weight; is it the parents or eating behaviours?

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects)

Skills Developed: Quantitative analysis (statistics)

Exploring Fat Taste Measurements

Project Number: FN_6

Primary Supervisor: Andrew Costanzo

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Phone: +61 3 9246 8207

Co-Supervisor(s):

Research Mentor(s):

Topic Area(s): Sensory; consumer science

Project Location: Melbourne Burwood campus

Project Description: Fat taste is the taste response to fatty acid in food. Its role is to help regulate the intake of dietary fat - i.e., when the body senses fatty acid on the tongue, it triggers the satiety cascade and starts to make an individual feel full. Individuals who are more sensitive to fat taste tend to eat smaller portion sizes of fatty foods and have lower body mass compared to insensitive individuals. The CASS Food Research Centre is on the forefront of researching fat taste, and it has demonstrated potential for fat taste to be used in appetite suppression and weight management. There are multiple potential projects in this area, including method development, dietary analysis, sensory testing, and analytical chemistry. Students are welcome to discuss this topic with Andrew to determine an individual project idea related to fat taste that suits them.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Interpersonal skills and ability to communicate directly with participants and other project contacts

Skills Developed: Recruitment of participants; Primary data collection skills; Laboratory techniques; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: FOOD OR NUTRITION SCIENCE

Sugar reduction in processed and packaged foods: how are food companies approaching the challenge?

Project Number: FN_7

Primary Supervisor: Dr Shirani Gamlath

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Co-Supervisor(s): Staff from CASS Food Research Centre TBC

Research Mentor(s): Dipendra Mahato

Topic Area(s): Sensory; consumer science

Project Location: Melbourne Burwood campus

Project Description: Reformulating packaged foods to reduce nutrients such as added sugar is one strategy likely to have significant impacts on improving the diets and health of Australian consumers. However, consumers also demand that processed and packaged foods meet expectations and overall liking. This necessitates using clever formulation strategies to reduce added sugar but maintain consumer satisfaction. This project will examine the strategy currently being used by food manufacturers to reduce added sugar in products (e.g. in “low sugar” variants), including an analysis of ingredients and formulation changes (e.g. whether sugar replacers are used and/or whether other ingredients such as fat are substituted) by utilising the MINTEL Global New Products Database. The data will provide an insight into future product reformulation strategies.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Knowledge and background in a sensory or consumer science; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program)

Skills Developed: Primary data collection skills; Laboratory techniques; Quantitative analysis (statistics)

Can krill oil supplementation improve symptoms in ME/CFS patients?

Project Number: FN_8

Primary Supervisor: Lee Hamilton

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Phone:

Co-Supervisor(s): Dr Ahrathy Selathurai

Research Mentor(s):

Topic Area(s): Dietetics

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: Krill oil contains the long chain omega-3 fatty acids, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). It is also high in the antioxidant astaxanthin and choline. EPA and DHA are conditionally essential fatty acids found in all tissues of the body with critical roles in neurological and mitochondrial function, in addition to being potent anti-inflammatory agents with analgesic properties. EPA and DHA can also improve cognitive function and sleep quality. Choline is an acetyl-choline precursor with important roles in the nervous system and energy metabolism while astaxanthin is a potent antioxidant. These compounds have systemic biological actions, and they have the potential to alleviate some of the systemic disruptions associated with ME/CFS such as brain fog, chronic pain and sleep disturbances resulting in reduced fatigue. Students on this project will assist with a clinical trial to determine if 12weeks krill oil supplementation can improve symptoms in ME/CFS patients.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Ability to work with blood and/or muscle biopsy samples; Laboratory techniques; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: FOOD OR NUTRITION SCIENCE

Microbial Spoilage: A concern for food waste

Project Number: FN_9

Primary Supervisor: Snehal Jadhav

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Phone: 392468606

Co-Supervisor(s): Associate Professor Robert Shellie

Research Mentor(s): Heng Wan Sin

Topic Area(s): Food Safety

Project Location: Melbourne Burwood campus

Project Description: Food waste due to microbial spoilage is a major hindrance for food sustainability. Food spoilage and pathogenic microbes can proliferate in a range of different foods ranging from fresh produce to ready-to-eat food products and bring about chemical changes in the food rendering it unsuitable or unsafe for consumption. The presence of these microbes and their metabolites can also serve as markers of food quality and food freshness. The current project aims to develop an understanding of microbial spoilage in perishable foods to eventually identify early markers of food quality. The project will most likely have industry involvement and include training for industry relevant basic and advanced food microbiology and analytical skills in the laboratory.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability to work as a team member

Skills Developed: Laboratory techniques; Multivariate data analysis

Investigation of the antimicrobial and biofilm-inhibitory effects of plant-based antimicrobials

Project Number: FN_10

Primary Supervisor: Snehal Jadhav

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Phone: 392468606

Co-Supervisor(s): Associate Professor Robert Shellie

Research Mentor(s): Agnes Mukurumbira

Topic Area(s): Food Safety

Project Location: Melbourne Burwood campus

Project Description: Maintenance of microbial food safety in the supply chain is a major challenge for the industry. Not only are foodborne pathogens a threat to public health but they can also colonise abiotic surfaces in the food processing environments forming 'biofilms', that are generally known to be quite resistant to disinfection. Considering the increase inclination of consumers towards products derived from natural sources, plant-based antimicrobials seem a useful alternative. In this project, plant-based antimicrobials will be explored for their antimicrobial and biofilm inhibitory effects. The project will involve using basic aseptic techniques in microbiology as well as using some advanced laboratory techniques to assess the effect of the antimicrobials against biofilms. In addition, it will also focus on characterising the composition of the antimicrobial components of the plant-based antimicrobials using advanced analytical techniques such as gas chromatography coupled to mass spectrometry.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability to work as a team member; Ability to travel to offsite for data collection and other projected related tasks

Skills Developed: Laboratory techniques

HONOURS PROJECTS 2023: FOOD OR NUTRITION SCIENCE

Sweet taste and habitual sugar consumption

Project Number: FN_11

Primary Supervisor: Gie Liem

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Phone: 458988996

Co-Supervisor(s): TBC

Research Mentor(s):

Topic Area(s): Sensory; consumer science

Project Location: Melbourne Burwood campus

Project Description: Humans are born with a liking for sweet taste, which, during childhood, seems to be associated with sugar content of parts of children's diet. However, it is unknown if the association between sweet taste liking is associated with habitual sugar intake in adults in various parts of the world. The current honours research is part of a large global project which aims to understand the link between sweet taste preferences and sugar intake. In this project you will be collecting and analysing sensory and dietary data from adults. This project is of special interest to students who are interested in sensory and consumer research.

Skills/Attributes Required: Knowledge and background in a sensory or consumer science; Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Primary data collection skills; Quantitative analysis (statistics)

The impact of evoked sensory stimulation in food reviews on food desire and choice

Project Number: FN_12

Primary Supervisor: Gie Liem

E-mail: gliem@deakin.edu.au

Phone: 458988996

Co-Supervisor(s): TBC

Research Mentor(s):

Topic Area(s): Sensory; consumer science

Project Location: Overseas or remotely

Project Description: To steer consumers towards healthier online food choices, it is important to understand what drives consumers' online food choices and how this choice process can be influenced. Although it is clear, that online sensory reviews impact consumers' choice and desire for a wide variety of products and services, it is less clear how this works for foods. This research investigates the impact of sensory descriptions in food reviews on food desire and choice

Skills/Attributes Required: Knowledge and background in a sensory or consumer science; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts

Skills Developed: Primary data collection skills; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: FOOD OR NUTRITION SCIENCE

Co-designing affordable, healthy, plant-based recipes for Victorian childcare services

Project Number: FN_13

Primary Supervisor: Penny Love

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Phone: 352278484

Co-Supervisor(s): Penny Love; Alison Spence

Research Mentor(s):

Topic Area(s): Public health nutrition

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: The increasing number of children and amount of time spent in childcare provides strong rationale to explore this as an opportunity to influence the provision of healthy, environmentally sustainable and affordable meals and snacks, which can also be replicated at home. This project involves secondary data analysis of surveys and focus groups with childcare providers regarding perceptions, challenges and strategies related to plant-based food provision; and co-designing appropriate recipes for use in childcare and home environments. Project findings will provide valuable insights regarding strategies that can be implemented at scale through the Victorian Healthy Eating Advisory Service (HEAS) to support environmentally sustainable food environments within Victorian childcare services. This project forms part of a broader body of research exploring food provision within Victorian childcare services.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Quantitative analysis (statistics); Qualitative analysis; Application of the co-design process

Nutrition communication in the media

Project Number: FN_14

Primary Supervisor: Prof Sarah McNaughton

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Phone:

Co-Supervisor(s): TBA

Research Mentor(s): Emily Dennis

Topic Area(s): Public health nutrition

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: Nutrition communication and miscommunication are identified as key emerging priorities for the discipline of nutrition science by the Australian Academy of Science. Nutrition science is often criticised for the appearance of controversy and for causing public confusion. "Nutrition confusion" is a term that has been coined to describe perceived ambiguity about nutrition recommendations and research and online news and social media environments provide a fertile ground for real and perceived conflicting information in nutrition. The overall purpose of this project is to examine the communication and miscommunication of nutrition science through the media and specifically to examine the content, framing and quality of reporting of media articles addressing nutrition issues in Australia over the last ten years. News media coverage of nutrition will be coded and analysed for content and framing and descriptive analysis will be conducted to examine trends over time and compare media outlets.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Primary data collection skills; Survey development; Quantitative analysis (statistics); Qualitative analysis

HONOURS PROJECTS 2023: FOOD OR NUTRITION SCIENCE

How do dietary guidelines incorporate messages on eating patterns and eating behaviours?

Project Number: FN_15

Primary Supervisor: Prof Sarah McNaughton

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Phone:

Co-Supervisor(s): Rebecca Leech; Kate Wingrove

Research Mentor(s):

Topic Area(s): Public health nutrition

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: Eating patterns refers to the ways in which foods are consumed together in discrete eating occasions (e.g. meals and snacks), and includes measures of eating occasion patterning, eating occasion format and eating occasion context. Eating pattern approaches provide the opportunity for optimal translation to consumers since they can directly inform healthy eating messages and intervention strategies. While it is now recognised that dietary pattern evidence is crucial for formulating dietary guidelines, many dietary guidelines provide only broad advice on quantities of food to be consumed. They rarely incorporate messages relating to how foods are actually eaten as meals and consumers are required to translate general advice on foods into specific eating habits. This project will analyse dietary guidelines from to understand how evidence on eating patterns and eating behaviours is being used in dietary guidelines, and what evidence has been used to underpin the development of guidelines.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Primary data collection skills; Survey development; Quantitative analysis (statistics); Qualitative analysis

FASTER – Fluids After Surgery To Enhance Recovery

Project Number: FN_16

Primary Supervisor: Judi Porter

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Phone: 992468625

Co-Supervisor(s): Dr Amelia Lee; Brooke Chapman; Christine Choong (Austin Health)

Research Mentor(s):

Topic Area(s): Dietetics

Project Location: Overseas or remotely

Project Description: Achieving adequate nutritional intake post gastrointestinal (GI) surgery is difficult. Hospitalised patients may receive a fluid-only diet until adequate bowel function is restored, or the surgical anastomosis is deemed safe for diet upgrade. Patients may remain on a fluid-only diet for 3-4 days after surgery, and 83% of patients do not achieve nutritional adequacy by day 5 post-op. Fluid-only diets are grossly inadequate in terms of nutrition provision. On average, they provide less than 25% of a patient's nutritional needs. Patients are at risk of nutritional decline during this period. Aims: To implement and evaluate the acceptability, feasibility, fidelity and implementation cost of an ERAS-fluids diet for patients who have undergone GI surgery. Expected outcomes include 1) Improvement in the energy and protein provided by this diet code, 2) Improvement in patient's nutritional intake after surgery, 3) Patient and stakeholder acceptability.

Skills/Attributes Required: Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other projected related tasks

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Quantitative analysis (statistics); Qualitative analysis; nutritional assessment

HONOURS PROJECTS 2023: FOOD OR NUTRITION SCIENCE

What does the dietary intake of Fijians look like?

Project Number: FN_17

Primary Supervisor: Dr Erica Reeve

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Phone:

Co-Supervisor(s): Dr Kristy Bolton; Prof Colin Bell

Research Mentor(s):

Topic Area(s): Public health nutrition

Project Location: On campus at either campus or remotely

Project Description: Pacific Island countries, like Fiji, are facing a non-communicable disease (NCD) crisis. Poor diet is a key risk factor for the development of NCDs. As part of a large research project monitoring the Fijian food supply, a cross-sectional survey of dietary intake has been conducted in Fiji. Projects are available to undertake secondary data analysis on quantitative data and might include: examining sugar or salt consumption, anthropometry, demographic information such as ethnicity or level of socioeconomic disadvantage. This information will be significant in informing future food interventions and policies in Fiji. Contact Erica and the team for more information and ideas in this area. Note, supervisors are based off campus/at Waurn Ponds campus Geelong. Therefore unless the student is willing to come to Geelong, the majority of meetings will be conducted via zoom.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Quantitative analysis (statistics); Data preparation and management, interpretation of findings

Plant-based diets in young adults

Project Number: FN_18

Primary Supervisor: Dr Ewa Szymlek-Gay

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Co-Supervisor(s): Dr Claire Margerison

Research Mentor(s):

Topic Area(s): Public health nutrition

Project Location: Overseas or remotely

Project Description: Currently, 12% of Australians follow a plant-based diet, such as vegetarian and vegan diets. Plant-based diets are most popular among young adults with close to 20% adhering to a vegetarian or vegan lifestyle. However, some young adults who exclude animal foods from their diet may not have the knowledge or skills to replace them with nutritionally equivalent plant foods, which may lead to inadequate nutritional intakes resulting in poor health outcomes in the long term. Our research program includes several studies that aim to assess food consumption and nutrient intake/adequacy of young adults who exclude animal foods from their diet to various degrees; and assess food-related knowledge, attitudes and health behaviours of young adults adopting plant-based diets. Students will have an opportunity to work with existing national survey data or participate in data collection. We encourage students with an interest in plant-based diets to contact us to discuss potential projects.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Skills/attributes required will depend on student project preferences

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Survey development; Quantitative analysis (statistics); Qualitative analysis; Skill development will depend on student project preferences

HONOURS PROJECTS 2023: FOOD OR NUTRITION SCIENCE

Does salt taste preference associate with dietary intake in adults?

Project Number: FN_19

Primary Supervisor: Dr Sze-Yen Tan

E-mail: szeyen.tan@deakin.edu.au

Phone: 03-92468977

Co-Supervisor(s): Prof Russell Keast

Research Mentor(s):

Topic Area(s): Sensory; consumer science; Public health nutrition

Project Location: Melbourne Burwood campus

Project Description: Taste is often cited as the primary determinant of food choice and driver of dietary intake. Therefore, our taste function may be a useful predictor of what we eat. For example, we are interested to find out if salt taste function can predict salt intake in adults. To answer this question, individual's salt taste sensitivity, measured as thresholds, can be quantified. However, research has repeatedly shown that taste sensitivity is a poor predictor of dietary intake. Instead, understanding one's liking and preference for salt taste may be more meaningful. However, to-date, there is no method to assess individual's preferred salt taste concentration. Therefore, this research project aims to adapt an existing method used to assess sweet taste preference to measure salt taste preference, and to validate this new method. The method developed from this project will be used in future studies to understand the associations between salt taste preference and dietary salt intake.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Knowledge and background in a sensory or consumer science; Basic familiarisation with laboratory techniques; Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: HEALTH OR FOOD BEHAVIOURS

Technology for tots: What influences the use of screens during infant mealtimes?

Project Number: FN_20

Primary Supervisor: Dr Katherine Downing

E-mail: k.downing@deakin.edu.au

Phone: 03 9244 6088

Co-Supervisor(s): Dr Alissa Burnett

Research Mentor(s):

Topic Area(s): Screen time; infant feeding

Project Location: Overseas or remotely

Project Description: Why do some parents use screens when feeding their babies and others don't? Is it to do with fussy eating or the baby's personality? Or are there certain family traits that make parents more likely to use screens during mealtimes? We will have data from parents of babies aged 0-12 months exploring the use of screens and eating behaviours, fussy eating, personality (temperament), and a range of family characteristics. This secondary data analysis project would draw upon this dataset to examine a particular aspect of screen use during mealtimes in infancy, tailored to the student's interests.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects)

Skills Developed: Quantitative analysis (statistics)

Food Practices of Australians during COVID-19

Project Number: FN_21

Primary Supervisor: Claire Margerison

E-mail: claire.margerison@deakin.edu.au

Phone: 92517293

Co-Supervisor(s): Dr Alison Booth; Dr Janandani Nanayakkara

Research Mentor(s):

Topic Area(s): Public health nutrition

Project Location: Overseas or remotely

Project Description: In 2020, we ran a series of online surveys about Australian household's experiences during COVID-19 and associated lockdowns. We have several datasets to be analysed and the Honours student can choose which of the topics they would like to analyse. The topics include: *the use of food gardens during COVID-19 (reasons for starting food gardens, how successful the food garden was, challenges and benefits of having a food garden) *the use of meal kits (Hello Fresh, Marley Spoon etc) during COVID-19 (frequency of usage of meal kits during COVID-19; advantages and disadvantages of meal kits, expectations and experiences of using them) *the use of food delivery services (eg Uber, Deliveroo, Menulog etc) during COVID-19 (frequency of usage and change during COVID-19, reasons for using, expectations) Surveys asked both quantitative and qualitative questions. We are happy to discuss projects ideas relating to any of these datasets/surveys with potential honours students.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Ability to work as a team member

Skills Developed: Quantitative analysis (statistics)

HONOURS PROJECTS 2023: HEALTH OR FOOD BEHAVIOURS

Examining Primary School Lunch Practices

Project Number: FN_22

Primary Supervisor: Janandani Nanayakkara

E-mail: j.nanayakkara@deakin.edu.au

Phone: 03 924 68383

Co-Supervisor(s): Alison Booth; Claire Margerison

Research Mentor(s):

Topic Area(s): Public health nutrition

Project Location: Overseas or remotely

Project Description: In 2022, we ran an online survey to explore parents' perceptions and practices of providing school lunches for their primary school children. As a part of this survey, we collected digital food photographs of school lunches. Also, we will be running another survey in late 2022 to explore primary school students' perceptions of their school lunch practices. An Honours student can involve in the analysis of these survey data. There are a few options; -Analyze parent or children survey data related to school lunch practices -Analysis of digital photographs of children's school lunches -We are also keen to conduct some interviews with parents to obtain a detailed understanding of factors influencing preparing school meals for their primary school students. We are flexible and are happy to work with the student to develop a project to suit their interests and plan it around the skills they wish to develop (quantitative/ qualitative data analysis, interview skills, photography analysis).

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Image and/or video analysis; Quantitative analysis (statistics); Qualitative analysis

Not just a meal. Putting food first for culturally diverse (CALD) communities at Western Health

Project Number: FN_23

Primary Supervisor: Dr Paige van der Pliigt

E-mail: p.vanderpligt@deakin.edu.au

Phone: 9246 8738

Co-Supervisor(s): Vicki Barrington (Western Health)

Research Mentor(s):

Topic Area(s): Dietetics; Hospital; clinical nutrition

Project Location: Western Hospital and Deakin Burwood

Project Description: Many cultures have traditional food customs that provide the feeling of comfort when sick. When in hospital, having access to culinary traditions and comfort foods help improve nutritional outcomes and the meal experience. Currently CALD patients are nutritionally vulnerable as they consume less than two thirds of their nutritional needs in hospital. This project aims to improve the cultural diversity of hospital food by interviewing Western Health's CALD community to determine what foods are important to incorporate into the hospital menu. Qualitative data will be collected and transcribed from interviews and responses analysed to explore consumer perceptions of traditional foods for sick patients. The student will gain skills in qualitative data sets, with inductive content analysis to determine themes. The student also will gain skills in translating themes to menu options to improve nutritional outcomes.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other projected related tasks

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Qualitative analysis

HONOURS PROJECTS 2023: PUBLIC HEALTH OR HEALTH PROMOTION

Healthy infant and young child diets from sustainable first-food systems

Project Number: FN_24

Primary Supervisor: Phillip Baker

E-mail: phil.baker@deakin.edu.au

Phone: +61 3 924 68870

Co-Supervisor(s): Dr Phillip Baker; Professor Mark Lawrence

Research Mentor(s):

Topic Area(s): Public health nutrition

Project Location: Overseas or remotely

Project Description: Today's food systems are driving multiple intersecting health and ecological crises. Many are calling for transformative food systems change. Yet almost completely missing from this 'transformation agenda', and from food systems research and action more generally, is the role of breastfeeding, breastmilk and other foods introduced in the first years of life. This is a glaring omission, given early-life food exposures are crucial to establishing life-long food preferences, and therefore diets that are both healthy for children and the planet. The aim of this project is to develop a first-food systems conceptual framework, to help researchers, educators, policy-makers and practitioners, better understand the determinants of infant and young child dietary change, in global context. This will build off an initial framework developed by Dr Baker, that will be further developed and refined following a review of the literature and WHO, UNICEF and FAO food systems documents.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Qualitative analysis

Enhancing Australia's Dietary Guidelines

Project Number: FN_25

Primary Supervisor: Prof Colin Bell

E-mail: colin.bell@deakin.edu.au

Phone: 352278043

Co-Supervisor(s): Dr Penny Love; Dr Erica Reeves

Research Mentor(s):

Topic Area(s):

Project Location: Geelong Waurin Ponds campus

Project Description: Dietary guidelines provide valuable nutritional information for populations, however, changes in our understanding of how people, food and the environment are connected have drawn attention to the need for guidelines to reflect broader concepts of diet that include the environmental, social and cultural factors to improve adherence and ultimately, population health. By comparing the language of the Australian Dietary Guidelines (ADGs) and the Brazilian Dietary Guidelines against an Indigenous Peoples' framework on food systems, this research aims to describe key terms and illustrations for capturing cultural, social, and environmental dimensions of diet, identify differences in language and structure of the guidelines, and provide recommendations to enhance the relevance, usability and adherence of the ADGs. This project uses qualitative research methods (comparative discourse analysis) and will require an ethics exemption application.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; ability and willingness to learn qualitative analysis methods

Skills Developed: Qualitative analysis

HONOURS PROJECTS 2023: PUBLIC HEALTH OR HEALTH PROMOTION

An evaluation of the food environment in a rural health service in Victoria

Project Number: FN_26

Primary Supervisor: Dr Kristy Bolton

E-mail: kristy.bolton@deakin.edu.au

Phone: 03 5227 8277

Co-Supervisor(s): Dr Jill Whelan; Prof Colin Bell

Research Mentor(s):

Topic Area(s): Public health nutrition; Health promotion (including policy)

Project Location: On campus or remotely

Project Description: Poor diet is a key risk factor for non-communicable disease. Health services are criticised for selling food that is energy dense and nutrient poor, thereby contributing to the chronic diseases they are funded to treat. Governments in Australia have applied regulatory pressure for health services to provide healthy food/drinks to their workforces and visitors. In Victoria, the State Government developed the Victorian Healthy Choices Classification Guide; a suite of policy guidelines on product placement and labelling using traffic light colour coding based on nutrients such as saturated fat, sugar, sodium, fibre, and kilojoules. This project examines stakeholder perspectives, enablers and challenges to the creation of a health promoting cafe within a health service located in rural Victoria via online focus groups/interviews. Note, supervisors are based off campus/at Waurn Ponds campus Geelong. Unless the student is willing to come to Geelong, the majority of meetings will be via zoom.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Depending on project, may include travel to a rural health service

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Survey development; Qualitative analysis

Secondary analysis of urinary excretion and diet recall data in Victorian adults over time

Project Number: FN_27

Primary Supervisor: Dr Kristy Bolton

E-mail: kristy.bolton@deakin.edu.au

Phone: 03 5227 8277

Co-Supervisor(s): Dr Carley Grimes

Research Mentor(s):

Topic Area(s): Public health nutrition

Project Location: On campus or remotely

Project Description: Projects are available using secondary data collected from a recent state-wide salt reduction initiative implemented across Victoria (sodium publication, potassium publication). The aim of the project was to reduce salt intake in the population of Victoria by 1gram per day, over four years. Data was collected cross-sectionally in 2016/17 (n=340) and 2019/20 (n=210). Data includes demographic characteristics, discretionary salt use behaviours, urinary biochemistry (e.g. sodium/salt, potassium) via 24-hour urine collection and a subsample participated in a 24-hour dietary recall. Potential projects include: examining changes in potassium intake over time, or salt intake by socioeconomic status or weight status or a longitudinal analysis over time in sodium/salt/potassium (including 2011 and 2014). Contact Kristy for more information and ideas. Note, Kristy is based off campus/at Waurn Ponds campus Geelong. Unless the student is willing to come to Geelong, meetings will be via zoom.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Quantitative analysis (statistics); Data preparation and management, interpretation of findings

HONOURS PROJECTS 2023: PUBLIC HEALTH OR HEALTH PROMOTION

The School Food Environment, School lunches and School Food and Nutrition Education

Project Number: FN_28

Primary Supervisor: Alison Booth

E-mail: alison.booth@deakin.edu.au

Phone: 61392517211

Co-Supervisor(s): Claire Margerison; Janandani Nanayakkara

Research Mentor(s):

Topic Area(s): Public health nutrition

Project Location: Overseas or remotely

Project Description: IPAN's School Food and Nutrition Group currently has several projects underway. The honours student will work with the supervisors on a project that may be of interest to them and could include: - Analysis of existing survey data of teachers and parents in the area of school food environments, school food lunches or school food and nutrition curriculum. - Analysis of a pilot healthy lunch educational intervention in a primary school. - Conducting a new survey of teachers and/or parents in the area of school food and nutrition lunches, food and nutrition curriculum or food environment in primary and/or secondary schools - Conducting interviews with parents or teachers exploring school lunches (current practices, evaluating healthiness, thoughts on school provided lunches and main parental/teacher concerns over lunchtime practices in students attending secondary school. - Developing and evaluating teacher professional development resources in the area of food and nutrition.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Survey development; Quantitative analysis (statistics); Qualitative analysis

Determining the characteristics of patients who complete PROMS following joint replacement surgery

Project Number: ESS_18

Primary Supervisor: Dr Stephen Gill

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Phone: (03) 5227 3776

Co-Supervisor(s): Dr Aaron Fox; Prof Richard Page

Research Mentor(s):

Topic Area(s): Clinical exercise; Orthopaedics

Project Location: Geelong Waurin Ponds campus

Project Description: Patient reported outcomes measures (PROMS) are increasingly important for evaluating outcomes following joint replacement surgery. The utility of PROMS is dependent of patients completing the surveys. Patient response rates are modest with between 25-75% completing surveys. The current study aims to understand the associations between patient characteristics and the likelihood of returning PROMS following joint replacement surgery. This information will be used to inform evidence-based strategies to improve response rates and better understand the effects of surgery. The student will work closely with clinicians at Barwon Health (surgeons, physiotherapists, nurses) and researchers from Deakin University. Data will be extracted from the Barwon Joint Registry, one of the largest orthopaedic clinical registries. Data for several thousand patients will be analysed using statistical software such as R. The student will conduct the study at Barwon Health and St John of God Hospital Geelong.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Ability to work as a team member

Skills Developed: Quantitative analysis (statistics)

HONOURS PROJECTS 2023: PUBLIC HEALTH OR HEALTH PROMOTION

Digital health and wearables for improving cardiovascular disease and diabetes

Project Number: FN_29

Primary Supervisor: Associate Professor Shariful Islam **E-mail:** shariful@deakin.edu.au **Phone:** 451733373

Co-Supervisor(s):

Research Mentor(s):

Topic Area(s): Dietetics; Sensory; consumer science; Public health nutrition; Exercise; sport science; Applied Sports Science; Exercise physiology; Clinical exercise; Physical activity; Health promotion (including policy)

Project Location: Melbourne Burwood campus

Project Description: Information technologies provide exciting opportunities to improve human health. The recent developments in technologies using network-connected sensors, wearables and medical devices are a promising way to improve a healthy lifestyle for people with chronic conditions. However, little is known about how these technologies are designed and used to support healthy lifestyles and behaviour changes. We will explore the use of different digital health tools and wearable devices for collecting health information from people with cardiovascular disease and diabetes. This project will provide an opportunity for the selected student to test a prototype wearable device system to explore how data are collected and used to improve physical exercise and a healthy diet. The selected student will develop skills in data collection, data analysis, and scientific writing and contribute to developing this exciting project.

Skills/Attributes Required: Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews

Measuring the burden of chronic diseases in Australia and Asia-Pacific countries

Project Number: FN_30

Primary Supervisor: Associate Professor Shariful Islam **E-mail:** shariful@deakin.edu.au **Phone:** 451733373

Co-Supervisor(s):

Research Mentor(s):

Topic Area(s): Dietetics; Public health nutrition; Exercise; sport science; Health promotion (including policy)

Project Location: Overseas or remotely

Project Description: Non-communicable diseases (NCDs) such as diabetes and heart diseases are a major cause of premature death, disability and poor health globally and in Australia. Diet is a key determinant of NCDs. The adverse effects of poor dietary behaviours on NCDs is well-established. However, little is known about sex and age-specific trend of dietary risk factors and how these behaviours have affected chronic health conditions in Australian population. This project aims to explore the prevalence and trend of dietary risk factors and their contribution to NCDs in Australia, by sex and age group. A secondary analysis of data from the Global Burden of Disease will be conducted. Publicly available country-specific data on 14 dietary risk factors (i.e., diets low in fruits, vegetables, whole grains, nuts and seeds, milk, fibre, calcium, omega-3, and polyunsaturated fatty acids, diets high in red and processed meat, sugar-sweetened beverages, trans fatty acids, and sodium) between 1990 and 2019 will be

Skills/Attributes Required: Knowledge and background in a nutrition related field; Knowledge and background in an exercise or sports science related field; Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Quantitative analysis (statistics)

HONOURS PROJECTS 2023: PUBLIC HEALTH OR HEALTH PROMOTION

Improving the dietary patterns of Australian adults

Project Number: FN_31

Primary Supervisor: Dr Katherine Livingstone

E-mail: k.livingstone@deakin.edu.au

Phone: +61 3 9244 5416

Co-Supervisor(s): TBC

Research Mentor(s): TBC

Topic Area(s): Public health nutrition

Project Location: Melbourne Burwood campus

Project Description: Project aims: There are multiple projects on dietary patterns in adults that can be tailored to the interests of the student. Projects are available that span quantitative research (such as collecting online survey data or analysing existing data from large studies) and qualitative research (such as conducting focus groups with participants). There is also the possibility to work on projects that involve stakeholders (such as dietitians, local government or non-government organisation). Expected outcomes and skills gained: The expected outcomes include a greater understanding of the diets of Australian adults and opportunities to disseminate findings, including leading a peer-reviewed publication. Dr Livingstone is committed to a high standard of support and supervision to the student. Specific skills gained will depend on the project topic, but all projects will help develop research skills that will be transferable for future careers.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Survey development; Quantitative analysis (statistics); Qualitative analysis

The relationship between body composition and metabolic health in older adults with obesity

Project Number: ESS_19

Primary Supervisor: Dr Jakub Mesinovic

E-mail: jakub.mesinovic@deakin.edu.au

Phone: 0402 481 022

Co-Supervisor(s): A/Prof David Scott; Dr Paul Jansons

Research Mentor(s):

Topic Area(s): Clinical physiology

Project Location: Melbourne Burwood campus

Project Description: Skeletal muscle is the largest glucose-sensitive organ in the body. Low skeletal muscle mass and performance (sarcopenia) and obesity have been implicated in the pathogenesis of poor metabolic health (e.g. insulin resistance and type 2 diabetes). However, it is unclear how different body composition profiles (e.g. higher/lower adiposity/ectopic adiposity plus lower/higher skeletal muscle mass) influence metabolic health in older adults with obesity. This project will utilise data from one completed and two ongoing randomised controlled trials involving exercise and dietary interventions. The final research question will be developed in consultation between the student and supervisory team pending interests, data availability and feasibility. It is intended that the results of this project will lead to the submission of one or more peer-reviewed journal articles following project completion, with an opportunity for the Honours student/s to be involved.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other project related tasks

Skills Developed: Recruitment of participants; Primary data collection skills; Exercise prescription and monitoring; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: PUBLIC HEALTH OR HEALTH PROMOTION

The link between metabolic health, musculoskeletal pain and physical function in sarcopenic obesity

Project Number: ESS_20

Primary Supervisor: Dr Patrick Owen

E-mail: p.owen@deakin.edu.au

Phone: 0414 221 902

Co-Supervisor(s): Dr Jakub Mesinovic; A/Prof David Scott

Research Mentor(s):

Topic Area(s): Clinical physiology

Project Location: Melbourne Burwood campus

Project Description: Poor metabolic health can cause musculoskeletal pain, which has a substantial economic and healthcare burden in Australia and is a leading cause of disability. Associations between poor metabolic health, musculoskeletal pain and physical function in older adults with poor muscle strength and performance (sarcopenia) and obesity are unclear. This project will utilise cross-sectional data from the baseline of an ongoing randomised controlled trial of 116 older adults with sarcopenic obesity undertaking remotely-delivered diet and exercise interventions. There will also be opportunities for involvement with the larger trial. The final research question will be developed in consultation between the student and supervisory team pending interests, data availability and feasibility. It is intended that the results of this project will lead to the submission of one or more peer-reviewed journal articles following project completion, with an opportunity for the Honours student/s to be involved.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other project related tasks

Skills Developed: Recruitment of participants; Primary data collection skills; Exercise prescription and monitoring; Quantitative analysis (statistics)

Diabetes in pregnancy at Joan Kirner Women's and Children's Hospital: a retrospective analyses

Project Number: FN_32

Primary Supervisor: Dr Paige van der Pligt

E-mail: p.vanderpligt@deakin.edu.au

Phone: 9246 8738

Co-Supervisor(s): Ms Kim Dennis (Dietitian, Western Health)

Research Mentor(s):

Topic Area(s): Dietetics; Clinical nutrition

Project Location: On-campus at Burwood or remotely

Project Description: A diagnosis of gestational diabetes mellitus (GDM) increases risk for multiple pregnancy complications and can lead to long-term adverse health outcomes for mothers and babies. This project aims to increase understanding of important factors related to GDM diagnosis at Joan Kirner Women's and Children's Hospital, Western Health. Joan Kirner Hospital is responsible for over 7,000 births annually and current prevalence of GDM is almost 23%; significantly higher than for the general population. This project will be nested within a larger, retrospective study. Data has been collected at Western Health for women diagnosed with GDM over the past ten years and at Joan Kirner Hospital since 2019. Secondary analyses of existing clinical and medical record data will be conducted. The student will gain an understanding of the link between GDM and clinical outcomes. The student will also develop skills in quantitative data analysis and statistics.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Knowledge of clinical research conducted in a hospital environment would be an advantage

Skills Developed: Quantitative analysis (statistics)

HONOURS PROJECTS 2023: PUBLIC HEALTH OR HEALTH PROMOTION

Understanding physical activity and screen time of children of South Asian origin in Australia

Project Number: ESS_21

Primary Supervisor: Dr Susan Paudel Subedi

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Phone: +61 3 9244 6369

Co-Supervisor(s): Prof. Kylie Hesketh

Research Mentor(s):

Topic Area(s): Physical activity

Project Location: Overseas or remotely

Project Description: Cultural diversity is increasing in Australia and South Asians are one of the largest incoming migrant group to Australia. Previous studies have shown lower rates of out-of-school physical activity and higher rates of overweight and obesity among children of Asian background. In this research project, the student will use already collected data from the Physical activity and sedentary behaviour of South Asian mothers and children study. This is a cross-sectional mixed-methods study consisting of quantitative information on 500 mothers and children (2-12 years) and interviews with 45 mothers and children. There is flexibility to design this honours project around the specific interests of the student using the existing data. Example research questions include prevalence and correlates of parent-child screen media co-viewing, parent-child physical activity co-participation, active transport to school or after-school physical activity.

Skills/Attributes Required: Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Ability to work as a team member

Skills Developed: Quantitative analysis (statistics); Qualitative analysis

Does children's preference for salty foods predict dietary intake?

Project Number: FN_33

Primary Supervisor: Dr Sze-Yen Tan

E-mail: szeven.tan@deakin.edu.au

Phone: 03-92468977

Co-Supervisor(s): Dr Carley Grimes

Research Mentor(s):

Topic Area(s): Sensory; consumer science; Public health nutrition

Project Location: Overseas or remotely

Project Description: Taste is an important influence on food choice, particularly in children, but there are very few studies worldwide that describe children's taste preferences for foods with varying levels of sodium. Therefore, the aim of this project is to investigate the associations between children's liking of salty foods and their dietary and sodium intake. This project will use data collected from a large cross-sectional study involving >600 children recruited in the Salt and Other Nutrients In Children (SONIC) study in 2010-2013. Within this study, a range of measures were assessed, including: dietary intake via a 24-hour dietary recall; sodium and potassium intake via a 24-hour urine collection; and child and parental knowledge, attitudes and behaviours related to dietary salt. This project will improve our understanding of how Australian children's taste function can shape their dietary behaviours.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Knowledge and background in a sensory or consumer science; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects)

Skills Developed: Quantitative analysis (statistics)

HONOURS PROJECTS 2023: PUBLIC HEALTH OR HEALTH PROMOTION

Parks, public open spaces and physical activity among adolescents

Project Number: ESS_22

Primary Supervisor: Anna Timperio

E-mail: anna.timperio@deakin.edu.au

Phone: 9244 7244

Co-Supervisor(s): Jenny Veitch; Venurs Loh

Research Mentor(s): Chahana Paudel

Topic Area(s): Physical activity

Project Location: Melbourne Burwood campus

Project Description: Neighbourhood settings, parks and public open spaces are important places where formal and informal physical activity can take place. However adolescents are less commonly observed using parks than other age groups and how much physical activity they accumulate in different settings is not well understood. In the NEArbY study, approximately 300 adolescents wore an ActiGraph accelerometer and a GPS device for a week. Location data from the GPS can be used to identify where physical activity occurs, and patterns of physical activity (eg. intensity, duration, intermittent vs sustained bouts) at those locations can be determined from accelerometry. Together with survey data, these data can be used to explore the importance of parks and public open spaces for physical activity, and for whom these spaces are important. This is a secondary analysis project. The student will develop skills using accelerometer and GPS data, and data management, coding and quantitative analysis using Stata.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects)

Skills Developed: Quantitative analysis (statistics)

Examining seasonal changes in sedentary behaviours

Project Number: ESS_23

Primary Supervisor: Dr Simone Verswijveren

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Phone: 499805839

Co-Supervisor(s): Dr Lauren Arundell; A/Prof Nicola Ridgers

Research Mentor(s):

Topic Area(s): Physical activity

Project Location: Melbourne Burwood campus

Project Description: Evidence suggests that too much sitting and screen time may be harmful for child health. Despite this, only 15% of children meet recommended screen time guidelines. This has led to global rises in cardio-metabolic health issues, such as obesity. This project aims to understand whether seasonal changes (e.g. weather patterns and daylight hours) have an impact on children's sitting and screen time levels. It will answer questions such as: Are children more likely to have more screen time during winter compared to summer? Such information has the potential to inform the design of intervention programs aimed at changing these behaviours. As this project is a secondary data analysis, it suits a student who is interested in learning advanced analytical skills. It provides opportunity to gain considerable experience in using a large and complex data set to explore a topical issue. There may also be opportunities for fieldwork on related projects through the year.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects)

Skills Developed: Quantitative analysis (statistics); Accelerometer data processing

HONOURS PROJECTS 2023: SPORTS SCIENCES

Health and performance issues in Australian Rules Football: Preliminary Sports Science Investigation

Project Number: ESS_24

Primary Supervisor: Dr Elizabeth Bradshaw

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Phone: 9244 6646

Co-Supervisor(s): Dr Eric Drinkwater

Research Mentor(s):

Topic Area(s): Applied Sports Science; Strength; Conditioning; Biomechanics

Project Location: Melbourne Burwood campus

Project Description: This project offers the opportunity to conduct research in sports science topics related to Australian Rules Football. Example topics include: - Validity and reliability of inertial measurement units for measuring biomechanical loads when running on different ground surfaces - Reliability of measures of head injury protective factors - Strengthening the neck and trunk to lower the risk of concussion injury This research project will provide new knowledge to support longitudinal, cross-sectional studies in football codes on strength and conditioning practices for injury prevention in youth players.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other projected related tasks

Skills Developed: Recruitment of participants; Primary data collection skills; Laboratory techniques; Exercise prescription and monitoring; Quantitative analysis (statistics)

Anticipation in Soccer: Examining the use of kinematic and contextual sources of information

Project Number: ESS_25

Primary Supervisor: David Broadbent

E-mail: david.broadbent@deakin.edu.au

Phone: 92446945

Co-Supervisor(s): Dr Lyndell Bruce

Research Mentor(s):

Topic Area(s): Applied Sports Science; Sports coaching

Project Location: Melbourne Burwood campus

Project Description: The ability to use both kinematic and contextual sources of information to facilitate rapid and accurate anticipation of an opponents' action is a significant marker of expertise in sport. Kinematic information emanates from the biological motion of the opponent, whereas contextual information refers to non-kinematic information that is relevant to a specific situation, such as the action preferences of the opponent or the time and score in the match. In the current project, video-based stimuli of a 2-versus-2 defensive situation in soccer will be manipulated to examine the manner and timeline by which athletes can detect, utilise and integrate these information sources in different situations. This research will inform current practices in expert performance and skill acquisition to enhance anticipation skills in soccer defenders.

Skills/Attributes Required: Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts

Skills Developed: Recruitment of participants; Primary data collection skills; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: SPORTS SCIENCES

The impact of physical and mental load on athletes' decision making in sport

Project Number: ESS_26

Primary Supervisor: David Broadbent

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Phone: 92446945

Co-Supervisor(s): Dr Lyndell Bruce

Research Mentor(s):

Topic Area(s): Applied Sports Science; Sports coaching

Project Location: Melbourne Burwood campus

Project Description: Expert performance in sport is underpinned by the ability to make effective decisions under severe time constraints and pressure. In many sports, athletes are required to cover large distances at high speeds and complete numerous accelerations and decelerations resulting in an accumulation of physical load across competition. As well as the physical aspects of the sport, athletes must also remain focused for extended periods, continuously scanning the everchanging environment to identify and process relevant information resulting in increasing levels of mental load during competition. Current evidence is mixed on the impact of increasing physical and mental load on an athletes' decision making skills. The aim of this project is to examine the impact of physical and mental load on decision making in sport. There is the opportunity to examine this in a variety of sports dependent on the interest of the student.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts

Skills Developed: Recruitment of participants; Primary data collection skills; Quantitative analysis (statistics)

The impact of gender responsive coaching practices on athlete learning and performance

Project Number: ESS_27

Primary Supervisor: Helen Brown

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Phone: 92446327

Co-Supervisor(s): Zoe Avner; David Broadbent

Research Mentor(s):

Topic Area(s): Sports coaching

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: This project aims to explore women and girls perspectives on gender responsive sport coaching practices, where attention is paid to the unique needs of females, valuing their perspectives and experiences and ultimately supporting their participation, performance and wellbeing. The study will involve a series of interviews with sub elite athletes and coaches, using a scenario based design to elicit discussion. It is anticipated that the findings will inform future coach development and practice. This project will suit students who are interested in sport coaching / development, particularly those with an interest in the participation of women and girls in sport.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Interpersonal skills and ability to communicate directly with participants and other project contacts

Skills Developed: Recruitment of participants; Primary data collection skills; Survey development; Quantitative analysis (statistics); Qualitative analysis

HONOURS PROJECTS 2023: SPORTS SCIENCES

Coaches use of athlete data to inform decisions regarding training and competition

Project Number: ESS_28

Primary Supervisor: Helen Brown

E-mail: h.brown@deakin.edu.au

Phone: 92446327

Co-Supervisor(s): Zoe Avner; David Broadbent

Research Mentor(s):

Topic Area(s): Sports coaching

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: A primary goal of sport science is to provide evidence-based data which coaches can draw upon for physical, tactical, and technical decision making. However, research indicates that a level of uncertainty exists around what data is needed by the coach and how it can be applied effectively in practice. Therefore, this study will examine the decision making of sport coaches relating to the use of athlete data, using a quantitative survey to capture a broad range of views from sub elite coaches. The study will suit students interested in sport science and how sport science can inform coaches in practice to develop athletic performance.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program)

Skills Developed: Primary data collection skills; Survey development; Quantitative analysis (statistics)

Effect of manipulating task constraints on performance in Australian Rules Football

Project Number: ESS_29

Primary Supervisor: Lyndell Bruce

E-mail: lyndell.bruce@deakin.edu.au

Phone: 9246 8967

Co-Supervisor(s): David Broadbent; Tim Buszard (external)

Research Mentor(s):

Topic Area(s): Applied Sports Science

Project Location: Melbourne Burwood campus

Project Description: This project will investigate the effect of task constraints, such as player numbers and space, on individual and group behaviour in Australian Rules Football. The overarching aim is to understand how constraints can be manipulated in practice to recreate match-like environments and shape the development of skill.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other projected related tasks

Skills Developed: Primary data collection skills; Image and/or video analysis; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: SPORTS SCIENCES

Nutritional supplementation: effects on athletes' hydration status and buffering capacity

Project Number: ESS_30

Primary Supervisor: Dr Amelia Carr

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Phone: 03 9251 7309

Co-Supervisor(s): Dr Rhiannon Snipe; Dr Lee Hamilton

Research Mentor(s): William Jardine

Topic Area(s): Sports nutrition; Exercise; sport science; Applied Sports Science; Exercise physiology

Project Location: Melbourne Burwood campus

Project Description: During exercise in hot weather conditions, sweat production increases, which can result in dehydration, cardiovascular strain, impaired thermoregulation, and performance decrement of up to 13%. Interventions are therefore needed to support athletes when competing in hot environmental conditions. Nutritional supplementation is a cost-effective method that can facilitate improved hydration status and performance benefits in hot conditions. Glycerol, an osmotic agent which previously featured on the World Anti-Doping Agency (WADA) list of prohibited substances, is now classified as safe and legal for unrestricted use in competition. Other osmotic agents, containing sodium (e.g., sodium bicarbonate, which can also improve performance via increased buffering capacity), can facilitate an improved hydration status. Further investigation is required to identify optimal supplementation protocols for glycerol and sodium bicarbonate (e.g., in isolation and combined).

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to work with blood and/or muscle biopsy samples; Laboratory techniques; Exercise prescription and monitoring; Quantitative analysis (statistics)

How have Super Netball's rule changes impacted strategy and performance?

Project Number: ESS_31

Primary Supervisor: Dr Aaron Fox

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Phone: 5247 9720

Co-Supervisor(s): Dr Lyndell Bruce

Research Mentor(s):

Topic Area(s): Exercise; sport science; Applied Sports Science; Performance analysis

Project Location: Either Burwood or Waurin Ponds Campuses

Project Description: The 2020 Super Netball season saw three major changes to competition rules: (i) the use of rolling substitutions in was implemented; (ii) teams were able to call a series of timeouts through play; and (iii) the 2-goal Super Shot was made available in the final 5-minutes of each quarter. These rule changes may have resulted in a dramatic shift in team strategy and performance. This project will explore and compare across a range of areas in the years prior to and since these rule changes, such as: (i) substitution patterns and line-up structures; (ii) the use and timing of time-outs; (iii) performance indicators (i.e. match statistics); and (iv) scoring. Pre-coded data from the Super Netball Match Centre (provided by Champion Data) will be used to examine team and player performance across years.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Ability to work as a team member

Skills Developed: Quantitative analysis (statistics)

HONOURS PROJECTS 2023: SPORTS SCIENCES

Using biomechanics to understand running performance and injury risk in the real-world

Project Number: ESS_32

Primary Supervisor: Dr Aaron Fox

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Phone: 5247 9720

Co-Supervisor(s): Dr Jason Bonacci; Dr Danielle Trowell

Research Mentor(s):

Topic Area(s): Exercise; sport science; Applied Sports Science; Biomechanics

Project Location: Either Burwood or Waurm Ponds Campuses

Project Description: Modern biomechanical analysis tools and techniques allow us to understand movement strategies, joint forces and muscle function during running. Recent advances (e.g. wearable sensors, artificial intelligence) allow us to take these measures outside of the lab and examine running in real-world scenarios. Our group uses these techniques to investigate running performance and injury risk, and this description encompasses a series of potential projects to select from focusing on this broad theme — including: (i) Understanding how running biomechanics change during a long-distance run and the implications for performance/injury risk; (ii) The impact of wearable sensor placement location on biomechanical measures of running; and (iii) Measuring biomechanical running performance indicators in realistic settings. Each project includes a similar methodological focus (i.e. biomechanical measures in real-world running scenarios) applied in the context of the research question.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Laboratory techniques; Quantitative analysis (statistics)

The impact of sports apparel on thermoregulation during exercise in the heat

Project Number: FN_34

Primary Supervisor: Dr Samantha Hoffmann

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Phone: (03) 5227 3398

Co-Supervisor(s): A/Prof Paul Collins

Research Mentor(s): Izzy Di Domenico

Topic Area(s): Exercise; sport science; Applied Sports Science; Exercise physiology

Project Location: Geelong Waurm Ponds campus

Project Description: This broad research area aims to investigate the effect of different sports apparel on thermal, physiological, perceptual, and performance measures during exercise in hot and humid conditions. More specifically, the research team are interested in assessing cycling skinsuits in hot and humid conditions that mimic indoor velodromes. The fit of sports garments is also an interest area. Previous literature speculates that both tight- and loose-fitted sports clothing have specific strengths and limitations in regards to body cooling and wearer comfort. However, very few studies have actually explored nor compared the effect of tight and loose fitted clothing during exercise in the heat, or determined the level of fit most optimal to promote heat loss, improve comfort or enhance exercise performance. Such work may generate practical insights for the development of specific clothing recommendations for elite-level athletes and recreational exercise goers when exercising in hot climates.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Exercise prescription and monitoring; Quantitative analysis (statistics)

HONOURS PROJECTS 2023: SPORTS SCIENCES

Effects of concussion and contact sport participation on the sleep and cognition of female athletes

Project Number: ESS_33

Primary Supervisor: Dr. Spencer Roberts

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Phone: +61 3 924 68837

Co-Supervisor(s): Aaron Fox; Dominique Condo

Research Mentor(s): Tess Rolley

Topic Area(s): Exercise; sport science; Sport medicine

Project Location: Melbourne Burwood campus

Project Description: Athletes involved in contact sport are exposed to head impacts during competition. Most impacts are asymptomatic (sub-concussive) but others result in concussion - a form of mild traumatic brain injury associated with cognitive impairment. There is concern about the cumulative effects of both sub-concussive and concussive head impacts on long-term athlete health. Compared with males, female athletes have a greater risk of concussion, and experience greater cognitive impairment post-concussion. As such, there is a need to understand the negative effects of head impact exposure for female athletes, and to identify modifiable factors that may mitigate these effects. This project will examine the sleep and cognitive function of female athletes with a history contact sport participation and / or concussion, and determine whether sleep has a moderating effect on any observed cognitive impairment. In completing this project, students will collect primary data in field and laboratory settings.

Skills/Attributes Required: Knowledge and background in anatomy and/or physiology; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other projected related tasks

Skills Developed: Recruitment of participants; Primary data collection skills; Quantitative analysis (statistics)

Understanding the sleep of professional male Australian Rules Football (AFL) players across a season

Project Number: ESS_34

Primary Supervisor: Dr. Spencer Roberts

E-mail: s.roberts@deakin.edu.au

Phone: +61 3 924 68837

Co-Supervisor(s): Dominique Condo

Research Mentor(s): Jackson Barnard

Topic Area(s): Exercise; sport science; Sport / exercise psychology

Project Location: Either Burwood or Waurn Ponds Campuses

Project Description: Sleep has been shown to impact the performance and health (e.g., injury risk) of athletes. While previous research has examined the sleep of athletes during acute isolated time periods (e.g., 1-2 weeks), there is no published data on long-term sleep trends of professional athletes across a season. A better understanding of such trends will help identify when athletes are most at-risk of poor sleep, and therefore, when sleep-promoting interventions may be most beneficial. This project will require the analysis of pre-existing sleep data provided by professional male Australian Rules Footballers (AFL). A willingness to learn sophisticated statistical analysis techniques is required.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Ability to work as a team member

Skills Developed: Quantitative analysis (statistics)

HONOURS PROJECTS 2023: SPORTS SCIENCES

Comparing the effectiveness of combined precooling on running performance in male and female athlete

Project Number: FN_35

Primary Supervisor: Rhiannon Snipe

E-mail: r.snipe@deakin.edu.au

Phone:

Co-Supervisor(s): Dr Amelia Carr

Research Mentor(s): Lilia Convit

Topic Area(s): Sports nutrition; Exercise; sport science; Exercise physiology

Project Location: Melbourne Burwood campus

Project Description: Heat mitigation strategies such as pre-cooling with an ice vest and ice slurry are commonly used by athletes to delay the rise in core body temperature and improve exercise performance in the heat. Research to date suggests that pre-cooling may provide a greater performance benefit to male athletes and very little or no performance benefit in female athletes. However, research directly comparing sexes using the same pre-cooling strategy and exercise protocol is scarce. This research project therefore aims to compare the effectiveness of a combined pre-cooling strategy on 10km running performance in male and female runners. Findings from this research will improve our understanding on the effectiveness of combined pre-cooling in male and female athletes and inform the practical implementation of pre-cooling by athletes competing in hot environments. Students will gain extensive research experience including laboratory-based data collection that will be of benefit to their future career.

Skills/Attributes Required: Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Basic familiarisation with laboratory techniques; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to work with blood and/or muscle biopsy samples; Laboratory techniques; Exercise prescription and monitoring; Quantitative analysis (statistics); monitoring thermoregulatory/CVD strain

Menstrual cycle management in female athletes

Project Number: FN_36

Primary Supervisor: Rhiannon Snipe

E-mail: r.snipe@deakin.edu.au

Phone:

Co-Supervisor(s): TBC

Research Mentor(s):

Topic Area(s): Dietetics; Sports nutrition; Exercise; sport science; Exercise physiology

Project Location: Melbourne Burwood campus

Project Description: Female athletes can suffer adverse side effects associated with their menstrual cycle including pain, fatigue, bloating and mood disturbances. The majority of these side effects occur prior to or during menstruation and between 46-77% of female athletes perceive a reduction in training and competition performance during menstruation. Menstrual cycle management strategies such as medications/hormonal contraceptives, diet/supplements, exercise and other strategies may assist with managing menstrual cycle side effects. However, research investigating the use of menstrual cycle management strategies in female athletes is scarce. This project therefore aims to fill this gap by identifying menstrual cycle management strategies used by female athletes. Findings will inform future research on menstrual cycle management and/or education requirements for female athletes to minimise adverse menstrual cycle side effects.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Knowledge and background in an exercise or sports science related field; Ability to learn relevant software programs (e.g. Excel, statistical software program); Interpersonal skills and ability to communicate directly with participants and other project contacts

Skills Developed: Recruitment of participants; Primary data collection skills; Survey development; Quantitative analysis (statistics); Qualitative analysis

HONOURS PROJECTS 2023: SUSTAINABILITY

Understanding school teacher perceptions about food sustainability

Project Number: FN_37

Primary Supervisor: Alison Booth

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Phone: 61392517211

Co-Supervisor(s): Claire Margerison; Janandana Nanayakkara

Research Mentor(s): Jessica Kempler

Topic Area(s): Public health nutrition

Project Location: Melbourne Burwood campus

Project Description: Food sustainability is important for human and planetary health. Teaching children about food sustainability is essential for the development of future generations who utilise food in a way that protects natural resources and can continue into the future without harming our environment or health. Schools are important settings for food education and teachers are well positioned to teach children about food sustainability. However little is known about teachers' knowledge of food sustainability. This study aims to explore teacher perceptions about food sustainability and their capacity to integrate this into teaching practices. We are happy to work with the student to identify research questions and methodologies about this topic. Findings from this study will have real-world implications for school-based food and nutrition education practices. It is expected that this project could lead to publication of the study in a scientific journal.

Skills/Attributes Required: Knowledge and background in a nutrition related field; Basic familiarisation with laboratory techniques; Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member; Ability to travel to offsite for data collection and other projected related tasks

Skills Developed: Recruitment of participants; Primary data collection skills; Ability to conduct interviews; Survey development; Quantitative analysis (statistics); Qualitative analysis

SUPERVISOR PROFILES

Honours Supervisors for 2023

Clinton Bruce

Dr Bruce's research is focused on understanding the regulation of glucose metabolism in skeletal muscle and liver in health and disease. He is particularly interested in identifying mechanisms underlying the development of glucose intolerance and insulin resistance. He also has an interest in determining the role of lipids in regulating skeletal muscle function. His research involves using stable isotope methodology and GC-MS-based metabolomics to measure glucose and lipid fluxes, protein synthesis and mitochondrial biogenesis.

Adam Trewin

Dr. Adam Trewin is a postdoctoral research fellow whose research aims to identify novel molecular regulators of cardiac and skeletal muscle. This has implications for the development of new strategies to treat and prevent cardiovascular disease. Dr. Trewin is an expert in mitochondria (the powerhouse of the cell) and muscle biology. As an Honours student, you will benefit from Dr. Trewin's international experience and be provided with training in important laboratory techniques and other transferable research skills while conducting an exciting study to better understand cardiac and skeletal muscle cell biology. View Dr. Trewin's research profile here <https://orcid.org/0000-0001-7322-4054>.

Glenn Wadley

A key focus of Prof Wadley's research program is investigating the molecular mechanisms regulating skeletal and cardiac muscle adaptations following exercise. These topics have important implications for the treatment and prevention of Type 2 diabetes and cardiovascular disease. His research utilizes a range of approaches from human exercise trials down to animal and cell culture experiments to investigate these areas. He has successfully supervised over 20 Honours students to completion and his previous Honours students have been successful in obtaining entry to competitive postgraduate programs including PhD, Medicine, Physiotherapy and Master of Dietetics. Prof Wadley's research profile can be viewed at <https://orcid.org/0000-0002-6617-4359>

Dominique Condo

Dr Dominique Condo is a lecturer in sports nutrition. She is an Accredited Practicing Dietitian and Accredited Sports Dietitian, consulting at Richmond Football Club and the WNBL Deakin Melbourne Boomers. Dr Condo is passionate about nutrition in the athletic population and optimising overall health and wellbeing as well as performance, with a specific interest in team sports. Her current research interests investigating the relationship between diet and sleep in athletes as well as energy availability in female athletes.

Katherine Downing

Dr Katherine Downing is a Lecturer in Physical Activity and Health. Her research focuses on 24-hour movement behaviours (physical activity, sedentary behaviour and sleep) in early childhood. Katherine has particular interests in the health and developmental outcomes associated with 24-hour movement behaviours, and how we can best educate and support parents to promote a healthy balance of movement behaviours for their children. <https://www.deakin.edu.au/about-deakin/people/katherine-downing>

David Dunstan

David's research focuses on understanding the adverse health consequences of too much sitting and the potential health benefits resulting from frequently breaking up sitting time. In particular, he has developed effective strategies to reduce and break up sitting time in adults with or at risk of developing chronic diseases and to support office workers to reduce sedentary behaviour in workplace settings. His current focus is directed at understanding how best to implement efficacious 'sit less and move more' interventions at scale within the healthcare setting for those living with chronic diseases and elucidating the effects of sedentary behaviour on brain health.

Kirsten Howlett

Dr Kirsten Howlett is a Senior Lecturer in the School of Exercise and Nutrition Sciences. Her research program is focused on understanding the physiological and metabolic responses that underpin the beneficial effects of exercise, and the detrimental impact of obesity or high fat diet in the development of metabolic diseases. By examining the underlying cellular mechanisms in skeletal muscle and the heart, this research aims to provide insight into how we can maintain good health, and prevent and treat diseases such as insulin resistance, type 2 diabetes and heart disease.

SUPERVISOR PROFILES

Paul Jansons

Dr Paul Jansons is a Research Fellow and exercise physiologist whose research focuses on maintaining independence for older adults through lifestyle interventions which prevent and reverse the age-related onset of chronic disease and functional decline. He is involved in several clinical trials exploring the effects of exercise and nutrition interventions on improving body composition, physical function and bone health in older populations, and is particularly interested in developing appropriate lifestyle programs that are widely accessible for older adults. As such, he has recently focused on home-based interventions using new telehealth methods including voice-activated virtual assistants.

Shaun Mason

Dr Shaun Mason is a lecturer in Nutrition Science, and undertakes research in redox biology and proteomics across domains of chronic metabolic disease, exercise and nutrition. As part of Dr Mason's research, he has undertaken clinical trials involving antioxidant supplementation treatments in healthy individuals and in patients with type 2 diabetes. Dr Mason's main teaching areas are diet and disease, nutritional physiology, and sports nutrition. Dr Mason's research profile can be found via Orcid at: <https://orcid.org/0000-0002-6138-2239>.

Niamh Mundell

Dr Mundell is a research-clinician (Accredited Exercise Physiologist) and Lecturer of Clinical Exercise physiology within the Masters of Clinical Exercise Physiology at Deakin University. She is also a Non-Executive Director at Exercise and Sports Science Australia. She is passionate about extending the inclusion of clinical exercise physiology within usual care for people with chronic and complex conditions, including in emerging areas of practice. She currently supervises 2 students (1 PhD, 1 Masters) and previously mentored 1 PhD and 2 Honours students. Moreover, she has clinically supervised >300 accredited exercise physiologists.

Patrick Owen

Dr Owen is a Research Fellow and Lead of the Musculoskeletal Pain Research Group at Deakin University. He is also a Statistical Consultant at Brigham Young University (USA) and Editor at Sports Medicine and BMJ Open Sport Exercise Medicine. His research focuses on musculoskeletal health, with particular interests in back pain, research methods and biostatistics. He has supervised nine Honours (mean grade: 86%), three Masters (mean grade: 81%) and two Doctoral completions. Seven of his students have since commenced Doctoral degrees and two are now medical doctors. Under his supervision, his students have been awarded three publication awards, five postgraduate research scholarship, three conference awards and presented at national/international conferences on 29 occasions.

Jonathan Rawstorn

Jonathan is an exercise and behavioural scientist at the Institute for Physical Activity and Nutrition (IPAN). His research explores the use of technologies for monitoring delivering exercise/lifestyle programs to help improve health and performance. His research skills include intervention design/evaluation, exercise testing, validation studies, systematic reviews/meta-analysis. <https://www.deakin.edu.au/about-deakin/people/jonathan-rawstorn>

Shannon Sahlqvist

CI-Sahlqvist is a Senior Lecturer within the School of Exercise and Nutrition Sciences at Deakin University. They are also a member of the Institute for Physical Activity and Nutrition (IPAN). Broadly, her research focuses on promoting physical activity in children and adults with a specific interest in promoting walking and cycling that is done for travel. Her recent research has focused on evaluating real-world physical activity interventions, including natural experiments. Further information about Dr Sahlqvist's research can be found here: <https://www.deakin.edu.au/about-deakin/people/shannon-sahlqvist>

Chris Shaw

Chris Shaw is a Senior Lecturer in Exercise Physiology in the School of Exercise and Nutrition Sciences/IPAN. His research focuses on how the hormone insulin regulates fuel use and the mechanisms underlying the metabolic and cardiovascular diseases associated with obesity and inactivity. He predominantly performs human studies using a combination of approaches to examine whole body fuel utilization and invasive techniques to study protein expression, signalling and metabolism in skeletal muscle. A link to Dr Shaws publications can be found here: <https://www.deakin.edu.au/about-deakin/people/chris-shaw>

SUPERVISOR PROFILES

Stuart Warmington

Dr Warmington's research focuses on interrelated areas that attempt to better understand the physiological, logistical and functional benefits of exercise related to health. Specifically, the use of blood flow restriction exercise to improve muscle mass, strength, and functional outcomes, often in populations less suited to high-intensity strength training. Dr Warmington has a long-standing track record in research student supervision, with team of PhD, Masters and Honours students, demonstrating a commitment to further training of students interested in enhancing their knowledge and skills, and interests in research to further their career goals.

Kim Way

Dr. Way is an Alfred Deakin Postdoctoral Research Fellow and Accredited Exercise Physiologist at the Institute for Physical Activity and Nutrition (IPAN) and Lecturer in the School of Exercise and Nutrition Sciences (<https://www.deakin.edu.au/about-deakin/people/kim-way>). Her research program investigates exercise strategies to target cardiovascular health outcomes and pathologies in people with cardiometabolic diseases. She has published >20 articles and has successfully received ~\$1 million in research funding. Dr. Way has supervised 2 Honours students with large success (scholarship funding for a PhD and an international award for exceptional thesis findings and work) and currently is the primary supervisor for 1 PhD student and mentors 2 PhD students and 2 Masters research students.

Craig Wright

Craig Wright is a member of the Institute for Physical Activity and Nutrition (IPAN) and a Senior lecturer at Deakin University in Exercise and Sport Science. His long term research goal is to understand how the immune system regulates skeletal muscle health, how the immune system becomes suppressed following intense exercise and how modulating the immune system through exercise and nutritional interventions can contribute to skeletal muscle health and healthy ageing. His current research projects utilise a range of approaches from human exercise trials down to animal and cell culture experiments to investigate these areas. Craig has previously supervised research students, all of whom have achieved first class honours research degrees and are now completing PhD research.

Alissa Burnett

Dr Alissa Burnett is a Lecturer in Nutrition Sciences at Deakin University, School of Exercise and Nutrition Science. Her research focus is the prevention of childhood obesity through investigating factors that influence dietary intake and weight, including eating behaviours and parental feeding practices/styles.

Andrew Costanzo

Dr Andrew Costanzo is a lecturer in food and nutrition, and a researcher at the CASS Food Research Centre at Deakin University. His area of research focuses on the alimentary tastes, which are taste modalities that differ from basic tastes as they are involved in post-ingestive appetite regulation. People taste foods differently, and these differences lead to variation in food behaviours and intake. Andrew's research aims to explore the differences in taste perception among individuals, and potentially exploit their taste systems using the alimentary tastes to help aid in appetite suppression and food intake. Google Scholar profile: <https://scholar.google.com.au/citations?hl=en=5L6Fg-AAAAAJ>

Shirani Gamlath

Shirani Gamlath's research interests are in designing healthy and sustainable food products. Shirani has expertise in food processing mainly in food extrusion technology and product development in plant-based products. Her current research focuses on sugar reduction in foods and plant-based protein alternatives.

<https://www.deakin.edu.au/about-deakin/people/shirani-gamlath>

<https://scholar.google.com/citations?user=ixGI7wsAAAAJ=en>

Lee Hamilton

Dr Lee Hamilton is a lecturer in exercise physiology across the lifespan. He is based in the School of Exercise and Nutrition Sciences at the Geelong Waurn Ponds campus. His research interests are primarily in understanding how exercise and nutrition interact to improve health and or performance outcomes. He has supervised 20+ honours students with many going on to complete postgraduate study. You can view his recent research outputs here: https://scholar.google.com.au/citations?hl=en=n0i1FWQAAAAJ=list_works=pubdate

SUPERVISOR PROFILES

Snehal Jadhav

Dr Snehal Jadhav is a lecturer in the School of Exercise and Nutrition Sciences. Her research expertise is primarily in the area of microbial food safety and metabolomics. Snehal currently has more than 24 publications with over 800 citations. She has supervised two honours students and is currently supervising three PhD students at Deakin.

Gie Liem

Gie Liem is an Associate Professor in the CASS Food Research Centre which is part of Deakin University. He has supervised over 10 honours students. The majority of these honours projects have been published in peer reviewed journals with the honours student as either the lead or co-author. Gie has experience in food industry as well academia. As an executive editor of one of the leading journals in food choice research, and 15 years of experience as teacher, supervisor and researcher, he is well equipped to guide honours students through the honours year. Gie's area of expertise includes sensory science, sensory marketing, consumer science and psychology of food choice.

Penny Love

I am an Advanced Accredited Practising Dietitian (Adv APD), course co-director for the Masters Dietetics program within SENS. My research focuses on the translation, implementation and sustainability of early childhood prevention at scale to inform the identification of key leverage points within existing service delivery systems, particularly within Early Childhood Education settings.

<https://www.deakin.edu.au/about-deakin/people/penny-love2>

<https://www.researchgate.net/profile/Penelope-Love>

Sarah McNaughton

Professor McNaughton is a Registered Public Health Nutritionist and Advanced Accredited Practising Dietitian, and Fellow of the Dietitians Association of Australia in the Institute for Physical Activity and Nutrition (IPAN). She has > 20 years expertise in nutrition science, has attracted > \$7.4 million in research funding and published > 200 papers. She is Head of EMCR Development for IPAN, and is a mentor for IPAN, the School of Exercise and Nutrition Sciences, Dietitians Australia and the Nutrition Society of Australia. She has supervised 12 PhD students, 9 Honours students and 5 Masters students. All have transitioned to successful academic careers, or secured research, health or government positions. See profile here: <https://www.deakin.edu.au/about-deakin/people/sarah-mcnaughton>

Judi Porter

Prof Judi Porter is Discipline lead for Dietetics at Deakin (<https://www.deakin.edu.au/about-deakin/people/judi-porter>). She has led research across a range of clinical and healthcare settings, with a particular focus on malnutrition and food services. She will jointly supervise this study with Dr Amelia Lee who is the Domain lead for foodservices within the Master of Dietetics program.

Erica Reeve

Dr Erica Reeve is an international expert in Nutrition and Food Security and Research Fellow with the Global Obesity Centre at Deakin University. She has over 17 years of work experience in supporting, delivering and evaluating nutrition and food security programs in the Asia Pacific region, including extensive experience working with and consulting to national and international organisations. Her research applies action-oriented research methods to strengthen the effort of policymakers in middle-lower income settings to translate and operationalize generic global food policy recommendations into national policy, and to strengthen food systems governance.

<https://scholar.google.com.au/citations?user=BZQzM2YAAAAJ=en>

Ewa Szymlek-Gay

Dr Ewa Szymlek-Gay leads a research program that focuses on micronutrients and health in vulnerable groups including children, women, vegetarians, and individuals with neurodegenerative disorders. Specifically, her research investigates micronutrient requirements; the aetiology and functional consequences of micronutrient deficiencies/excess; and strategies to enhance the content and bioavailability of micronutrients in diets in both low-income and high-resource countries, and the impact of these interventions on growth, health, and cognitive function. Ewa has successfully supervised numerous Honours, Masters, and PhD students, who have published first-author articles in international journals and presented their research at national and international conferences.

SUPERVISOR PROFILES

Sze-Yen Tan

Dr Sze-Yen Tan is a Senior Lecturer at the School of Exercise and Nutrition Sciences and he is an Advanced Accredited Practising Dietitian. His research is primarily in weight management and metabolic health. He is passionate about understanding how human taste function and preference can influence food intake, and subsequently health. He has extensive research publications and experience in supervising PhD and Honours students.

Claire Margerison

Dr Claire Margerison is an Advanced Accredited Practising Dietitian and Senior Lecturer. Her broad research interests include nutrition and dietetics education. She is co-lead of the School Food Nutrition group the Institute of Physical Activity and Nutrition (IPAN). Current research includes: school food and nutrition education; school lunches; food literacy; mental health and young adult food behaviours. She has supervised multiple Honours, Masters and PhD students to completion.

Janandani Nanayakkara

Dr Janandani Nanayakkara is a Lecturer within the School of Exercise and Nutrition Sciences. Her broad research interests include exploring ways of improving primary and secondary school food literacy education. Current research includes: primary school food environment and school lunches and food literacy education in primary and secondary schools. She has co-supervised 2 Masters students and currently co-supervises two PhD students (one is based in a Sri Lankan University), 1 Honours student, 3 Masters students, and 1 Graduate Certificate of Research practice student.

Paige van der Pligt

Dr Paige van der Pligt is an Advanced Accredited Practising Dietitian with several years' experience working both as a clinical Dietitian and in Private Practice. Her research is focused on how pregnancy impacts maternal and neonatal health and disease (gestational diabetes and cardiovascular disease), the identification of dietary factors in early pregnancy which impact maternal cardiometabolic health and postnatal lifestyle support programs for women following pregnancy. Dr van der Pligt is experienced in both qualitative and quantitative research and has an honorary research appointment at Joan Kirner Hospital, Western Health, within the Dietetics department. She is involved in research at Joan Kirner in the area of diabetes in pregnancy and maternal and child health outcomes.

Phillip Baker

Dr Phillip Baker is a Senior Lecturer in food policy and international nutrition at Deakin University, Melbourne, Australia. He is an experienced post-graduate supervisor, with the large majority of previous students graduating with HD grades, and several publishing their research in academic journals. His research focuses on understanding global food systems change, and the implications for human and planetary health. Recent work covers the global rise of ultra-processed foods, the political economy of food systems, and the commercial determinants of infant and young child nutrition. He regularly consults to UN nutrition agencies on these topics. See his Google Scholar profile here: <https://scholar.google.com.au/citations?user=K4HNPhUAAAAJ=en>

Colin Bell

Prof Bell leads the Public Health Medicine theme in the Doctor of Medicine course at Deakin University. Colin is recognized for his expertise in obesity, nutrition and chronic disease prevention and has worked on a number of successful population and community-based programs in Australia and New Zealand over the last 25 years. <https://www.deakin.edu.au/about-deakin/people/colin-bell>

Kristy Bolton

Dr Kristy Bolton is a Senior Lecturer in Nutrition Sciences a researcher within the Institute for Physical Activity and Nutrition (IPAN) based at the Waurn Ponds campus. Her research focuses on chronic disease prevention, particularly in infants and children. She has designed, implemented and evaluated many complex obesity prevention interventions; and has recently been part of a team evaluating a Victorian state-wide salt reduction initiative in adults and children. She has supervised 6 honours, 2 masters students to completion, along with dietetics and psychology placement students. Kristy is currently supervising 3 honours, 3 PhD students. More information about her research profile can be found here: <https://www.deakin.edu.au/about-deakin/people/kristy-bolton>

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Alison Booth

Dr Alison Booth is a senior lecturer and Registered Nutritionist and specialises in nutrition promotion. She co-leads the School Food Nutrition group in the Institute of Physical Activity and Nutrition (IPAN). Her current research focuses on food and nutrition education in schools (food literacy), school food environment including school lunches, teacher professional development and young adult food practices. She has co-supervised 8 Honours students, one PhD student to completion, won two category 1 grants and published over 35 publications. She currently co-supervises four PhD students.

Stephen Gill

I am a Clinician Researcher. I work as Senior Research Fellow with the Barwon Centre for Orthopaedic Research and Education (B-CORE) with the School of Medicine at Deakin University, and am a Senior Clinician Physiotherapist with Barwon Health, Geelong. Subsequent to completing my PhD investigating exercise-based programs for people awaiting hip or knee replacement surgery, most of my research has since been a combination of clinical and health services research. <https://www.deakin.edu.au/about-deakin/people/stephen-gill>

Shariful Islam

A/Prof Shariful Islam is Group Leader for the Global Health research group at the Institute for Physical Activity and Nutrition (IPAN). He is a physician with expertise in public health, digital health, and global health. Shariful's research focuses on innovative information technologies for improving chronic health conditions. He has experience in the design and conduct of epidemiological studies, clinical trials, and implementation. Shariful has supervised to completion of 7 Doctor of Medicine, 3 PhD and 12 Masters students, and currently supervises 3 PhD students.

Deakin: www.deakin.edu.au/about-deakin/people/shariful-islam

Scholar: <https://scholar.google.com.au/citations?user=ntloj7UAAAAJ=en>

ResearchGate: <https://www.researchgate.net/profile/Sheikh-Mohammed-Shariful-Islam>

Katherine Livingstone

Dr Katherine Livingstone is a senior research fellow in the Institute for Physical Activity and Nutrition (IPAN). She is a domain coordinator for IPAN's Food, Nutrition and Health Research Domain and is a member of the Australian Academy of Science National Committee for Nutrition. Dr Livingstone leads a program of research to improve dietary patterns in adults and is funded by the National Health and Medical Research Council. Her research spans the analysis of large datasets, collection of diet and biological data and qualitative studies. She has >80 publications and >2500 citations. She currently supervises 4 PhD students.

Deakin profile: <http://www.deakin.edu.au/about-deakin/people/katherine-livingstone>

Google Scholar: <https://scholar.google.com.au/citations?user=zoQlaNYAAAAJ=en>

Jakub Mesinovic

Dr Jakub Mesinovic is a Research Fellow at the Institute for Physical Activity and Nutrition at Deakin University. His research focuses on further understanding the relationship between metabolic and musculoskeletal health in older adults, and how different exercise and dietary interventions (delivered in-person and/or via telehealth) influence these relationships, as they serve as a low-cost, preventative and ongoing treatment for poor metabolic and musculoskeletal health. Jakub has expertise in musculoskeletal imaging (dual-energy x-ray absorptiometry [DXA] and peripheral quantitative computed tomography [pQCT]) and has published over 15 peer-reviewed articles.

Susan Paudel Subedi

Dr Susan Paudel is an Executive Dean Health Research Fellow at Deakin University, (Susan Paudel Subedi | Deakin). Her work focuses on understanding physical activity and sedentary behaviour of mothers and children from culturally and linguistically diverse backgrounds using mixed-methods design. She has experience in systematic reviews, meta-analysis and qualitative and quantitative data collection and analysis, including secondary analysis of national-level cross-sectional surveys and cohort studies (Google Scholar). Her research interests are epidemiological modelling, socioeconomic inequalities, culturally and linguistically diverse populations, early childhood and correlates and health effects of physical activity and sedentary behaviour.

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Anna Timperio

Anna's research focuses on understanding the range of influences on physical activity and sedentary behaviour, particularly among children and adolescents, and over critical life transition periods. A major focus of her work has been understanding how the neighbourhood environment shapes active living. Anna has over 250 publications. Her profile and publications can be found here:

<https://www.deakin.edu.au/about-deakin/people/anna-timperio>

Simone Verswijveren

Dr Simone Verswijveren is an Alfred Deakin Postdoctoral Research Fellow (based at Burwood Campus) at the Institute for Physical Activity and Nutrition within the School of Exercise and Nutrition Sciences. Her research focuses on children's movement behaviours, including physical activity (e.g., walking and running) and sedentary behaviour (e.g., sitting and screen time), and how these are related to health outcomes. Her current work focuses on sophisticated methods of measuring and analysing movement behaviour data to better understand these and ultimately inform movement guidelines and health promotion efforts.

Deakin profile: <https://www.deakin.edu.au/about-deakin/people/simone-verswijveren>

Google Scholar: <https://scholar.google.com.au/citations?user=322b65AAAAAJ=en=ao>

Elizabeth Bradshaw

Dr Elizabeth (Liz) Bradshaw returned to Deakin in 2018 after working at the New Zealand Academy of Sport (now known as Sport Performance Research New Zealand), and the Australian Catholic University. She has extensive experience in supervising Honours and Higher Degree Research students. Her research is focused upon biomechanics and motor control of human movement with a specific interest in pre-adolescent and adolescent athletes, sports performance, injury mechanisms, movement variability, and human gait. Liz is an ESSA Accredited Sport Scientist (Level 2) and a Life Member/Fellow of the International Society of Biomechanics in Sport.

David Broadbent

Dr David Broadbent is a Lecturer in Sport Coaching and has just joined Deakin University from Brunel University London in the UK. The broad focus of Dr Broadbent's research is on expert performance and skill acquisition, with a particular interest in anticipation and decision making skills as well as the factors that impact these skills such as pressure and fatigue. Dr Broadbent also worked for three years at Everton Football Club in the Recruitment and Scouting Department and then as a 1st Team Performance Analyst. Click here to view Dr Broadbent's profile on ResearchGate: <https://www.researchgate.net/profile/David-Broadbent>

Helen Brown

Helens research interest focuses on sport and physical activity with a specific focus on sport coaching and developing inclusive learning environments. She has expertise in the use of qualitative methodologies to explore athletes lived experience as well as knowledge translation to maximise the uptake of research evidence into policy and practice.

Lyndell Bruce

Dr Lyndell Bruce has multidisciplinary research interests including sports analytics, expertise development, athlete development and understanding training structure. Dr Bruce uses a range of technologies (including wearables, applications and software) and analytic techniques to offer insights into research questions. Click here (<https://www.deakin.edu.au/about-deakin/people/lyndell-bruce>) for more information.

Amelia Carr

Dr Amelia Carr is a Senior Lecturer with the Centre for Sport Research. Amelia's research focuses on adaptations to nutritional interventions and training strategies, and the effects on athletes' performance. Amelia completed her undergraduate degree at the University of Western Australia (UWA), and her PhD through UWA at the Australian Institute of Sport in Canberra. Amelia worked with the Australian Defence Force as a Performance Scientist before commencing her current role. Amelia's current projects include research programs which focus on buffering, hyperhydration and heat acclimation training for athletes. Amelia's Deakin and Google Scholar profiles provide further details about her research.

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Aaron Fox

Dr Aaron Fox is a lecturer and researcher in the Centre for Sport Research, and has expertise in the areas of neuromechanics of human performance and sports performance analysis. Aaron's work involves the use of a range of technologies (including motion capture, force plates, electromyography) and analytical techniques to identify optimal strategies for improving human performance and reducing injury risk. Google Scholar Profile: <https://scholar.google.com.au/citations?user=p0QjWTQAAAAJ=en>

Samantha Hoffmann

Sam Hoffmann is a lecturer in Applied Exercise and Sport Science, and a member of the Centre for Sport Research. Sam's research interests include understanding the physiological responses and performance adaptations to acute exercise and exercise training, with a specific focus on female-specific demands and considerations.

Spencer Roberts

Dr Roberts' research is currently focused on sport-related concussion, and the influence of sleep on concussion prognosis and recovery. He research has previously focused on the importance of sleep for athlete performance and health, and on strategies for improving athlete sleep. Dr Roberts' research has been published in world-leading sport medicine journals and disseminated through national media and international associations, including the American College of Sports Medicine (ACSM) and the Physiological Society. Dr Roberts also consults with industry - including with elite sporting organisations - on strategies to improve and monitor sleep.

Rhiannon Snipe

Rhiannon is an advanced sports dietitian with a research focus on exercise physiology and nutrition of female athletes, including associated effects of the menstrual cycle and hormonal contraceptives. Her research aims to enhance the health, well-being and performance of female athletes. Rhiannon has experience supervising PhD and Honours students and conducting and publishing research in female and male athletes with and without heat stress. Staff profile: <https://www.deakin.edu.au/about-deakin/people/rhiannon-snipe>