



School of Exercise and Nutrition Sciences

2021 Honours Projects

Bachelor of Nutrition Science (Honours) H418

Bachelor of Exercise and Sport Science (Honours)
H442

deakin.edu.au

Deakin University CRICOS Provider Code: 00113B

Index

Honours Overview.....	1
Why do Honours with SENS?	1
Benefits of learning research.....	2
What are the career pathways after Honours?.....	2
What types of Honours projects can I do in SENS?	3
Who supervises Honours projects?.....	4
How do I choose a topic?	4
Can I develop my own project?	4
What happens in the Honours year?	5
What are the admission requirements?.....	6
How do I apply for Honours?	6
How are projects allocated?	7
When do I find out if I have been accepted?	7
Additional Information.....	7

TEDDY ANG

Bachelor of Food and Nutrition Sciences (Honours)

Current role/position: Undertaking PhD in Physiology and Metabolism at Deakin University, School of Exercise and Nutrition Sciences

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 Nutrition Science (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 trimesters within a single year full time (8 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.

What types of Honours projects can I do in SENS?

Food and nutrition science

Topic areas in food science and nutrition include:

- 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.

Exercise and sport science

Topic areas in exercise and sport science include:

- 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.

*****Refer to the back of this handbook for the 2021 Honours projects*****

KEREN BEST

Bachelor of Food and Nutrition Science (Honours)

Current role/position: 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.

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 2021 Honours projects*****

BELLA HARTLEY

Bachelor of Food Science and Nutrition (Honours), 2017

Current role/position: Undertaking a PhD in Sensory Science at Deakin University

Honours topic: Investigating the impact of a new front-of-pack label, the physical activity calorie equivalent label, on discretionary snack food consumption and liking.

Completing my honours year was an extremely challenging year, but a year for significant personal development. During just 8 months of study, I gained more skills than I imagined possible in that timeframe. From an academic perspective and with support from my supervisor my critical writing, laboratory, statistical analysis, communication and problem solving skills improved considerably. From a personal perspective, it was a year of immense growth, particularly gaining stress management skills, gaining confidence in my own abilities, plus the feeling of enormous achievement when I submitted my thesis. The skills you gain during honours are essential for any career path, I honestly couldn't recommend completing an honours year highly enough.

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 Trimester 1, Research Methods (unit code HBS400) and Developing Research Skills (HSE401). They have lectures and assignments to complete that incorporate aspects of your project. The remainder of your research is conducted in Trimester 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 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 29 November 2020 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 health-enquire@deakin.edu.au or call 9251 7777

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 2021. This project booklet will be available on the course sites:
 - [Bachelor of Nutrition Science \(Honours\)](#)
 - [Bachelor of Exercise and Sport Science \(Honours\)](#)
- 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 A/Prof Lukar Thornton (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 2020.

Additional Information

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

Associate Professor Lukar Thornton

(Honours Coordinator)

Ph.: (03) 9244 5029

Email: sens_honours@deakin.edu.au

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_1

Project title: Wearable devices for improving physical activity and health in the elderly population

Primary supervisor: Dr Shariful Islam

Phone: +61 3 9246 8393

Email: shariful.islam@deakin.edu.au

Co-supervisor/s: Dr Riaz Uddin

Research mentor:

Supervisor profile

Shariful Islam (MBBS, MPH, PhD, FESC) is a National Heart Foundation Senior Research Fellow at the Institute for Physical Activity and Nutrition (IPAN). He is a Physician Scientist with a PhD in International Health and two post-doctorates in Digital Health. Shariful's research focuses on Global Health and using innovative information technologies for improving chronic health conditions. He leads the Global Burden of Disease Australia project at IPAN. He has experience in design and conduct of large-scale epidemiological studies, secondary data analysis, meta-analysis, clinical trials and implementation research. He has published 145 articles in peer-reviewed journals including several studies with his students. Shariful has supervised to completion 7 Doctor of Medicine and 12 Masters students and currently supervises 3 PhD students at IPAN. Dr Riaz Uddin is an Alfred Deakin Postdoctoral Research Fellow in the Institute for Physical Activity and Nutrition (IPAN). He has expertise in a broad range of quantitative data analysis techniques, and statistical modelling and computing. Riaz's research focuses on global public health, including analysis of digital health data.

Broad project topic area(s)

Food and nutrition science; Public health nutrition; Exercise and sport science; Clinical exercise; Health promotion (including policy);

Course code: Either H442 Bachelor of Exercise and Sport Science (Honours) OR H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Physical inactivity, high blood pressure and sleep problems are among the top causes of heart diseases leading to poor health, disability and deaths among older Australians. Monitoring of risk factors such as physical activity and blood pressure is essential for the prevention and management of heart disease. However, these risk factors are difficult to monitor over time by both participants and healthcare providers. In recent years, the development of consumer wearable devices offers potential for monitoring of these risk factors by participants and sharing data with healthcare providers. We have a low-cost, wrist-worn device that can measure blood pressure, heart rate, physical activity and sleep. These devices might be useful for the elderly population to monitor their risks of heart disease. However, the acceptability and usability of wearable devices for measuring these risk factors is not known in the elderly population. In this study, the successful student will test the acceptability and usability of the wearable device in 20 participants aged 60 years and older. Participants will be required to wear the devices for 7 days. At the end of the study, data will be collected from the device, and the participants using a questionnaire and semi-structured interviews.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_2

Project title: Smart Home program for improving healthy lifestyle behaviours

Primary supervisor: Dr Shariful Islam

Phone: +61 3 9246 8393

Email: shariful.islam@deakin.edu.au

Co-supervisor/s: Dr Riaz Uddin

Research mentor:

Supervisor profile

Shariful Islam (MBBS, MPH, PhD, FESC) is a National Heart Foundation Senior Research Fellow at the Institute for Physical Activity and Nutrition (IPAN). He is a Physician Scientist with a PhD in International Health and two post-doctorates in Digital Health. Shariful's research focuses on Global Health and using innovative information technologies for improving chronic health conditions. He leads the Global Burden of Disease Australia project at IPAN. He has experience in design and conduct of large-scale epidemiological studies, secondary data analysis, meta-analysis, clinical trials and implementation research. He has published 145 articles in peer-reviewed journals including several studies with his students. Shariful has supervised to completion 7 Doctor of Medicine and 12 Masters students and currently supervises 3 PhD students at IPAN. Dr Riaz Uddin is an Alfred Deakin Postdoctoral Research Fellow in the Institute for Physical Activity and Nutrition (IPAN). He has expertise in a broad range of quantitative data analysis techniques, and statistical modelling and computing. Riaz's research focuses on global public health, including analysis of digital health data.

Broad project topic area(s)

Public health nutrition; Exercise and sport science; Exercise physiology; Health promotion (including policy);

Course code: Either H442 Bachelor of Exercise and Sport Science (Honours) OR H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Information technologies provide exciting opportunities to improve human health. The recent developments in Smart Home programs that use network-connected sensors and medical devices are a promising way to improve healthy lifestyle for people with chronic conditions. However, to-date most Smart Homes have not been designed to support a healthy lifestyle and behaviour change. We have a proto-type Smart Home system that can capture physiological data (e.g. blood pressure, weight) and health behaviour (e.g. medication intake). This world-first project aims to test the feasibility and acceptability of information technology supported Smart-Home program to provide personalised intervention. This project will provide an opportunity for the selected student to test a proto-type Smart Home system in selected homes to explore if the system improves physical exercise and a healthy diet in people with chronic conditions. The selected student will develop skills in data collection, data analysis, and scientific writing and contribute to developing this exciting project.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_3

Project title: Does endogenous testosterone determine athletic performance in females?

Primary supervisor: Severine Lamon

Phone: 9244 5571

Email: severine.lamon@deakin.edu.au

Co-supervisor/s: Aaron Russell

Research mentor: Sarah Alexander

Supervisor profile

Dr Severine Lamon's primary research interest is to understand how human skeletal muscle adapts to health and disease conditions at the molecular level. Dr Lamon also has a background in anti-doping research. A key focus of Prof Aaron Russell's research program is investigating the molecular mechanisms regulating skeletal muscle adaptations following exercise. Dr Lamon and Prof. Russell both have extensive experience running human exercise trials involving blood and muscle sampling, followed by molecular analyses. They have supervised several successful Honours and PhD students together. Ms Sarah Alexander is the PhD candidate in charge of the broader project and will act as a research mentor for the student.

Broad project topic area(s)

Exercise and sport science; Exercise physiology; Molecular Biology

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Hyperandrogenism is a female endocrine disorder that is characterized by elevated endogenous levels of the androgenic hormone testosterone and results in virilising traits. The anabolic phenotype (traits) effected by exogenous testosterone abuse is beneficial for athletic performance. Over the recent years, hyperandrogenism has become a contentious topic that has gained substantial media attention and raised ethical issues regarding whether hyperandrogenic females should be allowed to compete in elite female competition. There is however no available evidence demonstrating that the levels of endogenous testosterone are the primary determinant of the muscle anabolic response and muscle performance. This project will be the first to address this gap, with the overarching aim to investigate whether endogenous testosterone levels, alone or in combination with other factors, can predict the muscle anabolic response and performance in females. To achieve this aim, we will analyse muscle gene, protein and epigenetic markers pre-and-post a tightly-controlled 12-week strength training protocol aimed at maximising the muscle anabolic response in females. By identifying potential new predictors of the anabolic response in females, this project will provide the building blocks for implementing new regulations aimed at protecting, and providing a fairer treatment to hyperandrogenic athletes in elite sports.

Skills/attributes required by the student

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 specific to this project the student will develop

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);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_4

Project title: Super mum or superstar? Investigating the barriers to returning to elite sport after pregnancy

Primary supervisor: Dr Megan Teychenne

Phone: 9244 6910

Email: mteych@deakin.edu.au

Co-supervisor/s: Dr Dominique Condo (dominique.condo@deakin.edu.au)

Research mentor:

Supervisor profile

Dr Megan Teychenne is a Senior Lecturer in the School of Exercise and Nutrition Sciences at Deakin University (Melbourne, Australia), undertaking her research at the Institute for Physical Activity and Nutrition (IPAN). Dr Teychenne's research investigates the links between physical activity, sedentary behaviour and mental health, particularly amongst perinatal populations. She has additional expertise in qualitative research methods. Dr Teychenne has supervised a number of Honours, Masters and PhD students and has a passion for teaching students about all aspects of research, from writing to data analysis right through to presentation skills. NOTE: DR TEYCHENNE IS ON MATERNITY LEAVE UNTIL EARLY 2021. IN THE MEANTIME, ALL INQUIRIES FOR THIS PROJECT SHOULD BE DIRECTED TO CO-SUPERVISOR DR CONDO (dominique.condo@deakin.edu.au)

Broad project topic area(s)

Exercise and sport science; Physical activity; Health promotion (including policy); Elite athletes; Gender equity; Women in sport

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Although extensive work has been undertaken recently to reduce gender inequalities in sport and exercise, women still face a number of barriers to continuing participation in elite sport, over and above those experienced by men. Namely, pregnancy and motherhood are key life stages which are likely to impact elite female athletes and their decisions to continue competing/training, much more so than elite male athletes. However, little research has investigated these gender discrepancies and the barriers elite female athletes experience in pursuing both an elite sporting career and motherhood. This project will investigate some of the following key research questions, using a cross-sectional survey design: 1. What pressure do elite female athletes have on making a choice between continuing a career as an elite athlete (without having children) or ending career to have children? 2. For mothers, what are the barriers/facilitators to returning to elite sport after pregnancy? 3. For those who are not mothers but would like to be one day, what are the career-related barriers and what would help them return to elite sport after pregnancy? 4. For organisations / clubs, what initiatives / policies are in place to support women returning to elite sport after pregnancy? This research is important to facilitate the development of strategies, programs and policies to support women continuing careers in elite sport both during and after pregnancy.

Skills/attributes required by the student

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); 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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_5

Project title: New telehealth approaches for delivering exercise programs for older with chronic disease

Primary supervisor: Associate Professor David Scott

Phone: +61 3 9246 8438

Email: d.scott@deakin.edu.au

Co-supervisor/s: Dr Paul Jansons and Professor Robin Daly

Research mentor:

Supervisor profile

Associate Professor Scott is a NHMRC Emerging Leadership Fellow and exercise scientist 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 leads 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. Co-supervisors Dr Paul Jansons and Professor Robin Daly are internationally-recognised experts in delivery of exercise and nutrition interventions in populations with chronic disease and also have vast experience in telehealth methods.

Broad project topic area(s)

Exercise and sport science; Strength and Conditioning; Exercise physiology; Physical activity;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

A number of chronic health disorders, including obesity, osteoarthritis, osteoporosis and sarcopenia (the age-related decline in skeletal muscle mass and function), contribute to loss of independence and poor quality of life in older adults. Older adults with one or more of these 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 for delivering lifestyle prescriptions in older adults with chronic health disorders. Students working on these projects will have opportunities to gain experiences in study preparation and participant recruitment, data collection including objective measures of physical activity, physical performance, and bone health, exercise prescription via telehealth, quantitative data analysis and analysis of qualitative information from interviews. We encourage students with an interest in these topics to contact us to discuss potential projects.

Skills/attributes required by the student

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); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_6

Project title: The effect of verbal cues on force output and neuromuscular activation

Primary supervisor: Ashlee Hendy

Phone: 9244 6221

Email: a.hendy@deakin.edu.au

Co-supervisor/s: Eric Drinkwater

Research mentor: Hans Leung

Supervisor profile

Dr Ashlee Hendy is a Lecturer in Motor Learning, with a particular interest in the effects of exercise on the brain and nervous system. She conducts research in the field of Exercise Science and Neuroscience, investigating changes in the brain (neuroplasticity) that occur following exercise programs. She also uses a variety of non-invasive brain stimulation techniques to enhance strength gains, motor performance, cognition and mood. Dr Eric Drinkwater's research involves investigating modifications of strength training programs to improve strength and power specifically to improve sports performance. He is an accomplished sports researcher with over 60 peer-reviewed research publication, 90% of which involve sport and 75% specifically involving strength and conditioning programming. Students working with Ashlee and Eric will gain comprehensive knowledge of state-of-the-art methods and technology used to test neurological function muscle activation. They will also gain an insight into the exciting and rapidly growing field of 'exercise neuroscience', bridging the gaps between cognitive psychology, neuroscience, and sports performance.

Broad project topic area(s)

Strength and Conditioning; Sport / exercise psychology; Exercise physiology;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Geelong Waurin Ponds campus

Project description

Recent work in our laboratory has shown that the verbal cues delivered during maximal intensity muscle contractions influence the outcome of training sessions. Specifically, cues that encourage an athlete to move at high speed are associated with increased development of muscular power, even when actual contraction speed is controlled. Furthermore, these changes are associated with differences in activation of the neuromuscular pathway and changes in brain plasticity that may optimise power gains for athletes. This project will assess the effects of various types of verbal cueing that are typically delivered by strength and conditioning coaches on the properties of force output and neuromuscular activation. The honours student will be responsible for recruiting healthy participants, delivering verbal cues during muscle contractions, and conducting assessments of neuromuscular function using peripheral nerve stimulation and transcranial magnetic stimulation (TMS).

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_7

Project title: Jumping to Health: Evaluating the impact of the Heart Foundation's Jump Rope for Heart Program

Primary supervisor: Dr Shannon Sahlqvist

Phone: 03 9251 7782

Email: shannon.sahlqvist@deakin.edu.au

Co-supervisor/s: A/Prof Nicky Ridgers

Research mentor:

Supervisor profile

Shannon Sahlqvist is a Senior Lecturer in Physical Activity and Health (based at Waurn Ponds). Shannon's research is primarily focused on understanding and promoting physical activity. She has considerable expertise in the design, delivery and evaluation of large-scale physical activity interventions, including those in the school setting. This project is co-supervised by A/Prof Nicky Ridgers. Nicky is a National Heart Foundation of Australia Future Leader Fellow based at the Burwood Campus. Her research focuses on the assessment of physical activity and sedentary behaviour in children and adolescents, and evaluating physical activity promotion strategies.

Broad project topic area(s)

Exercise and sport science; Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

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. The Program focuses on developing children's skipping skills and, in turn, helps to ensure children have a positive attitude towards physical activity, healthy eating and heart health. Using a quasi-experimental design, a team of researchers within the School are evaluating the impact of the Program on (a) physical activity, (b) fundamental movement skills, (c) cardiorespiratory and muscular fitness and (d) behavioral outcomes. The student will assist the research team in the evaluation of this Program. The student will visit schools for data collection, which will involve field tests of children to determine changes in cardiorespiratory and musculo-skeletal fitness and fundamental movement. Measures of body composition will also be undertaken and each child will be provided with an accelerometer to measure their physical activity. Together with the supervisory team the student will be able to identify an aspect of the evaluation that is of interest to them. In undertaking the project students will gain practical experience in field testing, data collection, data analysis & interpretation and working within a team. As students will gain real world experience, this Honours project presents a great opportunity for those interested in public health and health promotion.

Skills/attributes required by the student

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 specific to this project the student will develop

Primary data collection skills; Quantitative analysis (statistics);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_8

Project title: Risky and challenging play in primary schools

Primary supervisor: A/Prof Nicola Ridgers

Phone: 03 9244 6718

Email: nicky.ridgers@deakin.edu.au

Co-supervisor/s: Dr Lauren Arundell; Dr Anne-Maree Parrish

Research mentor:

Supervisor profile

A/Prof Nicky Ridgers is a National Heart Foundation of Australia Future Leader Fellow (based at Burwood Campus) within the Institute for Physical Activity and Nutrition. Her research focuses on the assessment of physical activity and sedentary behaviour in children and adolescents, and evaluating physical activity promotion strategies. Dr Lauren Arundell is a Postdoctoral Research Fellow within IPAN. Her research investigates children's physical activity and sedentary behavior and their impact on health and wellbeing. Lauren's research focuses on identifying the unique influences that the school and home environments have on children's health behavior, and developing programs to promote optimum physical activity and sedentary behaviour. Dr Anne-Maree is a Senior lecturer in Public Health and Health Promotion and is the Head of Post Graduate Students for the School of Health and Society at the University of Wollongong. Anne-Maree's research focuses on understanding and developing physical, social and policy environments to support healthy lifestyles. Her research investigates factors that influence children and adolescents physical activity and sedentary behaviour at school.

Broad project topic area(s)

Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

A child's safety when playing during recess and lunchtime is a major consideration for parents, teachers, and principals. The societal drive for safety and to minimise risk has often led to the initiation of restrictions during recess and lunchtime, resulting in equipment or games being banned from the playground. We are interested in understanding perceptions of risk from the perspectives of children, parents, and teachers. This project will involve interviewing children, parents and teachers using semi-structured interviews to elicit participant views concerning risky and challenging play, and examine what is considered acceptable and unacceptable risky play within these groups. Such information has the potential to inform the design of school spaces, or the development of programs that increase opportunities for health enhancing behaviours that often involve risky and challenging play for children at school.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_9

Project title: On Your Bike: Has COVID-19 led to a cycling resurgence and what can we learn from it?

Primary supervisor: Dr Shannon Sahlqvist

Phone: 03 9251 7782

Email: shannon.sahlqvist@deakin.edu.au

Co-supervisor/s: Dr Kate Parker / Dr Lauren Arundell

Research mentor:

Supervisor profile

Shannon Sahlqvist is a Senior Lecturer in Physical Activity & Health. Her research is primarily focused on understanding and promoting physical activity, in particular walking and cycling for transport. She has considerable expertise in the design, delivery and evaluation of large-scale physical activity interventions. Dr Kate Parker is a Lecturer in Physical Activity & Health within IPAN. Her research focuses on understanding the factors that influence clustering and trajectories of physical activity and sedentary behaviours during childhood, adolescence and young adulthood. Dr Lauren Arundell is a Postdoctoral Research Fellow within IPAN. Her research investigates children's physical activity and sedentary behaviours and their impact on health and well-being. Lauren's research focuses on identifying the unique influences that different environments have on children's health behaviours, and developing programs to promote optimum physical activity and sedentary behaviour. Drs Parker and Arundell are co-leads on the Our Life at Home study, from which data will be used for this Honours project.

Broad project topic area(s)

Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

In Australia, as in much of the world, Government restrictions to manage the spread of COVID-19 did, and continue to, impact the ways in which we work and travel. On the one hand, 'work at home' recommendations meant that for many, there were missed opportunities to incorporate walking and cycling into their daily commute. On the other hand, measures put in place to ensure physical distancing have placed limits on public transport patronage and may be encouraging those who need to travel to do so via active means (i.e., walk or cycle). This honours project will use data collected from the Our Life at Home Study – a longitudinal study exploring the continued impact of Government restrictions to manage the spread of COVID-19 on the movement behaviours of Australians – to explore how these restrictions impacted on the active travel patterns of Australians. Using previously collected data, the student will devise an analysis plan to explore changes in active travel as a result of the restrictions, within who these changes were seen and under what conditions. The student will gain considerable experience in using a large & complex data set to explore a topical issue.

Skills/attributes required by the student

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 specific to this project the student will develop

Quantitative analysis (statistics);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_10

Project title: Where did they get that from? Mechanisms for sports coach education and translation into practice

Primary supervisor: Dr Helen Brown

Phone: 92446327

Email: h.brown@deakin.edu.au

Co-supervisor/s: Tim Konoval

Research mentor:

Supervisor profile

Dr Helen Brown is a Senior Lecturer and researcher in the School of Exercise and Nutrition. Her research aims to understand behaviour change in the areas of physical activity and sports coaching, with a strong focus on translation of evidence-based research findings into real world applications, ensuring optimum health and well-being outcomes are achieved. Helen has extensive experience supervising PhD and Honours students. Dr Tim Konoval is a Lecturer of Sport Coaching. His diverse educational and real-world experiences as a former high-performance athlete, coach and sport researcher, allow him to think differently and challenge the status quo in coaching, sport and physical activity contexts. Through qualitative research methods, he focuses on applied research that enable coaches and sport organizations to provide safe, accessible and ethical sport for all. His current research looks at the career development of Paralympic sport coaches.

Broad project topic area(s)

Exercise and sport science; Sports coaching;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

The majority of sport is played worldwide by non-professionals who have limited access to the facilities, equipment and support those in professional sport are afforded. Coaches involved in non-professional sport are typically volunteers with less coaching knowledge and experience than those in professional sport, often gaining their coaching expertise through comparison to those in the high-performance environment, making it challenging to effectively develop an athlete's ability and performance. The broad aim of this project is to gain a greater understanding of where volunteer coaches (e.g. community-level, parents, school teachers) get their coaching knowledge and how this translates into the training environment. The project provides the opportunity for a student to work closely with a national sporting organisation (e.g. Cricket Australia, Gymnastics Victoria), with the results used to inform policy and practice for future coach development. For a student with skills and interest in developing the knowledge of coaches and improving the quality of practice within community-level sport, this project could be expanded to form the basis of a Ph.D. upon successful completion of Honours.

Skills/attributes required by the student

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); 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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_11

Project title: Characterising children's activity patterns

Primary supervisor: A/Prof Nicola Ridgers

Phone: 03 9244 6718

Email: nicky.ridgers@deakin.edu.au

Co-supervisor/s: Simone Verswijveren

Research mentor:

Supervisor profile

A/Prof Nicky Ridgers is a National Heart Foundation of Australia Future Leader Fellow (based at Burwood Campus) within the Institute for Physical Activity and Nutrition. Her research focuses on the assessment of physical activity and sedentary behaviour in children and adolescents, and evaluating physical activity promotion strategies. Simone Verswijveren is a Research Fellow within the Institute for Physical Activity and Nutrition in the School of Exercise and Nutrition Sciences (based at Burwood Campus). Her research focuses on patterns of physical activity and sedentary behaviour in children and adolescents, and associations with health.

Broad project topic area(s)

Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Moving more and sitting less are critical for children's health both now and in the future. However, many Australian youth do not do enough physical activity and spend too much time sitting. Increasing our understanding of how children accumulate their physical activity and sedentary time each day is needed to inform future intervention efforts that target these behaviours. We have a number of potential projects that can be developed according to individual interests. These include:

- Understanding what behaviours (e.g., TV viewing, organized sports) are associated with children's activity patterns;
- Examining how children's activity patterns change over time; and
- Investigating the sequences (i.e. timing and order) of children's activity behaviours.

Projects can include collecting new data using accelerometers, questionnaires or interviews, or analysing existing datasets.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_12

Project title: Australian Paralympic Sport: What coaching pathways are available?

Primary supervisor: Tim Konoval

Phone: 17808623511

Email: t.konoval@deakin.edu.au

Co-supervisor/s: Helen Brown

Research mentor:

Supervisor profile

Dr Tim Konoval is a Lecturer of Sport Coaching based at the Waurn Ponds campus. His diverse educational and real-world experiences as a former high-performance athlete, coach and sport researcher, allow him to think differently and challenge the status quo in coaching, sport and physical activity contexts. Through qualitative research methods, he focuses on applied research that enable coaches and sport organizations to provide safe, accessible and ethical sport for all. His current research looks at the career development of Paralympic sport coaches. Dr Helen Brown is a Senior Lecturer and researcher in the School of Exercise and Nutrition. Her research aims to understand behaviour change in the areas of physical activity and sports coaching, with a strong focus on translation of evidence-based research findings into real world applications, ensuring optimum health and well-being outcomes are achieved. Helen has extensive experience supervising PhD and Honours students.

Broad project topic area(s)

Exercise and sport science; Sports coaching; Sport / exercise psychology; Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Paralympic sport in Australia has grown considerably since its genesis over 60-years ago. While the Paralympic games, participation rates of athletes with a disability are much lower than those without. Research has highlighted several barriers that prevent athletes with a disability from becoming involved in parasport. A key barrier reported is the lack of programs involving trained parasport coaches. While parasport coaches play a significant role in the development of para athletes, little is known about their career trajectories or pathways in the Australian sport context. This study aims to fill this gap using qualitative methods to map the career development of parasport coaches in Australia. Findings will be used to help parasport organizations in Australia (e.g., Paralympics Australia, Disability Sport Australia) develop more effective para coach education pathways.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_13

Project title: Better Together? How do coaches use sport and social science knowledge to develop their practices

Primary supervisor: Tim Konoval

Phone: 17808623511

Email: t.konoval@deakin.edu.au

Co-supervisor/s: Will Vickery

Research mentor:

Supervisor profile

Dr Tim Konoval is a Lecturer of Sport Coaching based at the Waurin Ponds campus. His diverse educational and real-world experiences as a former high-performance athlete, coach and sport researcher, allow him to think differently and challenge the status quo in coaching, sport and physical activity contexts. Through qualitative research methods, he focuses on applied research that enable coaches and sport organizations to provide safe, accessible and ethical sport for all. His current research looks at the career development of Paralympic sport coaches. Dr Will Vickery is a Lecturer of Sport Coaching based at the Melbourne Burwood campus. His research focuses on the impact of coaching on athlete performance, with a specific focus on practice design. Dr Vickery has experience working within a more applied (field-based) setting, using mainly quantitative analysis techniques (GPS, variety of associated software, SPSS). In more recent times he has taken a more qualitative approach to his work (interviews, questionnaires) and is currently working on projects that look to improve the effectiveness of training sessions from the coach's perspective.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Sports coaching;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurin Ponds

Project description

To achieve optimal sport performance, coaches need to draw on knowledge from several sport and social science disciplines (e.g., physiology, nutrition, biomechanics, psychology, sociology, motor learning). For coaches to develop effective and holistic training plans, they need to understand how practical findings from sport sciences can be fused together to support athletes in achieving high-performance outcomes. To help inform coaches' practices, there have been numerous calls for sport scientists to develop multi or interdisciplinary studies to examine sport performance across individual and team sport environments. This project will therefore explore how coaches use multiple sport and social science disciplines to develop their practices. Using qualitative research methods, this project aims to draw out practical considerations for coaches looking to create more holistic, empirically informed training plans.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_14

Project title: Does the way a coach delivers a training session differ amongst playing level and sex?

Primary supervisor: Will Vickery

Phone: 03 9244 5674

Email: will.vickery@deakin.edu.au

Co-supervisor/s: Lyndell Bruce

Research mentor:

Supervisor profile

Dr Will Vickery is a Lecturer of Sport Coaching based at the Melbourne Burwood campus. His research focuses on the impact of coaching on athlete performance, with a specific focus on practice design. Dr Vickery has experience working within a more applied (field-based) setting, using mainly quantitative analysis techniques (GPS, variety of associated software, SPSS). In more recent times he has taken a more qualitative approach to his work (interviews, questionnaires) and is currently working on projects that look to improve the effectiveness of training sessions from the coach's perspective. 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.

Broad project topic area(s)

Sports coaching;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Common behaviours and actions are used by all coaches, however, it is unclear how or whether the behaviours used differ between different age groups and sexes, in addition to what a practice session looks like and involves. The information that currently exists relating to the typical behaviours of coaches and the structure of practice has focused mainly on elite, male field- and court-based team sports such as soccer and rugby union. It is unclear though whether these common coaching behaviours and how a practice session is structured are witnessed within other sports that do not necessarily fit within this context. That being the case, the general focus of this study is to examine the behaviours and practice structures used by coaches from sports across a variety of age groups and sexes within the one environment. Using available systematic observation analysis software key features of how coaches interact with the performers will be critically analysed, and effective and ineffective behaviours determined. A similar process will also be used to examine the structure of practice used by the coaches. The benefits of this study will enhance the applicability of coaching theory to the education of novice coaches working in a variety of environments. For this project, students will have the opportunity to work with coaches and athletes from Maribyrnong Sports Academy.

Skills/attributes required by the student

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); 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 specific to this project the student will develop

Recruitment of participants; Primary data collection skills; Image and/or video analysis; Quantitative analysis (statistics);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_15

Project title: Between a rock and a hard place: how do skilled athlete's perform in tricky situations?

Primary supervisor: Will Vickery

Phone: 03 9244 5674

Email: will.vickery@deakin.edu.au

Co-supervisor/s: Lyndell Bruce

Research mentor:

Supervisor profile

Dr Will Vickery is a Lecturer of Sport Coaching based at the Melbourne Burwood campus. His research focuses on the impact of coaching on athlete performance, with a specific focus on practice design. Dr Vickery has experience working within a more applied (field-based) setting, using mainly quantitative analysis techniques (GPS, variety of associated software, SPSS). In more recent times he has taken a more qualitative approach to his work (interviews, questionnaires) and is currently working on projects that look to improve the effectiveness of training sessions from the coach's perspective. 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.

Broad project topic area(s)

Exercise and sport science; Sports coaching;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

There is a considerable amount of research which now directs coaches to create environments which provide learner's with the opportunity to identify information that may influence the outcome of a skill (e.g. the position of their opponents, the direction of the wind). Furthermore it is thought the practice design will help learners to develop both while training and performing on match day. This research encourages coaches to couple the information within an environment to elicit the desired outcome/s. There are moments in every sport where athlete's are faced with a situation where this information and how to achieve the desired outcome is not as clear or straightforward, in other words, times when one is unsure of the best course of action which might lead to an ineffective action (e.g. the back of a length delivery in cricket which a batters in unsure on whether to play forward or back). The broad aim of this project is to gain a clear picture of how highly skilled athletes use the information presented to them in these challenging moments by comparing them to less skilled performers. The project will look to use a mixture of qualitative (e.g. interviews, recall) and quantitative (e.g. video analysis) methodologies to achieve this broad aim.

Skills/attributes required by the student

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); 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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_16

Project title: The link between coaching behaviour and practice design to the performance of gymnasts

Primary supervisor: Will Vickery

Phone: 03 9244 5674

Email: will.vickery@deakin.edu.au

Co-supervisor/s: Tim Konoval

Research mentor:

Supervisor profile

Dr Will Vickery is a Lecturer of Sport Coaching based at the Melbourne Burwood campus. His research focuses on the impact of coaching on athlete performance, with a specific focus on practice design. Dr Vickery has experience working within a more applied (field-based) setting, using mainly quantitative analysis techniques (GPS, variety of associated software, SPSS). In more recent times he has taken a more qualitative approach to his work (interviews, questionnaires) and is currently working on projects that look to improve the effectiveness of training sessions from the coach's perspective. Dr Tim Konoval is a Lecturer of Sport Coaching based at the Waurn Ponds campus. His diverse educational and real-world experiences as a former high-performance athlete, coach and sport researcher, allow him to think differently and challenge the status quo in coaching, sport and physical activity contexts. Through qualitative research methods, he focuses on applied research that enable coaches and sport organizations to provide safe, accessible and ethical sport for all. His current research looks at the career development of Paralympic sport coaches.

Broad project topic area(s)

Sports coaching; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

The sport of gymnastics has made global headlines in recent times for all the wrong reasons, particularly regarding the relationship between coaching staff and the athletes in their care. The perception of the way a coach approaches a training session within the sport of gymnastics is commonly considered to be very technically focused, aggressive, and demanding, with the coach often seen as a dictator, but it is unclear whether this is actually the case. This image and practice oppose much of the current evidence that surrounds effective coaching. Taking a qualitative approach (e.g. interviews), the broad aim of this project is to gain a clearer picture of the behaviours of a gymnastics coach with regards to their coaching style and the knowledge of and how they develop and implement practice. The secondary aim of this project is to delve into the link these behaviours and practice design knowledge has on the relationship these coaches have with their athletes and the impact this has on their performance.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_17

Project title: Exploring the potential effects of strength training on running economy: A simulation study

Primary supervisor: Dr Aaron Fox

Phone: 5247 9720

Email: aaron.f@deakin.edu.au

Co-supervisor/s: Dr Jason Bonacci, Ms Danielle Trowell

Research mentor:

Supervisor profile

Dr Aaron Fox is a research fellow in the Centre for Sport Research and has research expertise in the area of neuromechanics and human performance. Aaron's work involves the use of a range of technologies (including motion capture, force plates, electromyography, and two-dimensional ultrasound) and analytical techniques to identify optimal neuromuscular and biomechanical strategies for improving performance and reducing injury risk. Dr Jason Bonacci is a senior lecturer in Biomechanics with research expertise in the impact of running biomechanics and footwear on lower limb injuries injury risk. Dr Bonacci also practices as a physiotherapist. Danielle Trowell holds a joint position as an Associate Lecturer at Deakin University and Biomechanist at the Victorian Institute of Sport (VIS). Danielle has over 4 years' experience working within a national high-performance sport system, primarily providing sports science services aligned with Athletics Australia. Her research interests include running gait and track and field biomechanics.

Broad project topic area(s)

Exercise and sport science; Strength and Conditioning; Biomechanics;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Running economy (i.e. energetic cost relative to body mass) is a strong predictor of endurance performance for distance runners. Concurrent strength training (i.e. alongside aerobic endurance training) has been shown to improve running economy and performance (i.e. time-trial improvements). Despite understanding the overall performance benefit, the mechanisms (i.e. neuromuscular, biomechanical or musculoskeletal adaptations) that contribute to the performance benefit are not well understood. This project will use biomechanical, and musculoskeletal modelling and simulation methods in an effort to identify the mechanisms that underpin improvements in running economy and long-distance running performance with concurrent strength training. An existing biomechanical dataset of running will be used to perform a series of predictive simulations wherein a three-dimensional musculoskeletal model will be altered to represent common adaptations to strength training (e.g. increased muscle strength). The overall goal of the analyses will be to examine the changes in running technique and economy across the common adaptations tested.

Skills/attributes required by the student

Knowledge and background in an exercise or sports science related field; Ability and willingness to learn intermediate quantitative statistics (recommended for secondary data analysis projects); Ability to work as a team member;

Skills specific to this project the student will develop

Quantitative analysis (statistics); Biomechanical analysis techniques; musculoskeletal modelling & simulation

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_18

Project title: Are there differences in training exposure and environments in male vs. female sport?

Primary supervisor: Dr Aaron Fox

Phone: 5247 9720

Email: aaron.f@deakin.edu.au

Co-supervisor/s: Dr Natalie Saunders

Research mentor:

Supervisor profile

Dr Aaron Fox is a research fellow in the Centre for Sport Research and has research expertise in the area of neuromechanics and human performance. Aaron's work involves the use of a range of technologies (including motion capture, force plates, electromyography, and two-dimensional ultrasound) and analytical techniques to identify optimal neuromuscular and biomechanical strategies for improving performance and reducing injury risk. Dr Natalie Saunders is a lecturer in Clinical Exercise Physiology with research expertise in neuromuscular control and biomechanics in a functional context, in particular understanding the various loads on the human body that result in injury.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Strength and Conditioning; Sports coaching; Sociocultural issues in sport

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Female athletes are often noted as having a higher risk for certain sports injuries compared to male counterparts from the same sport. Of recent note, female 'biology' has been targeted as the primary factor responsible for the higher rate of anterior cruciate ligament (ACL) injuries in the women's Australian Football League (AFLW). However – the relative infancy of women and girls participating in Australian football, limited experience during youth, and reduced access to facilities, training opportunities and medical/athletic development staff are potential environmental drivers for differences in ACL injury rates between the men's and women's AFL competitions. This project will explore the differences between training and environmental factors between men's and women's sport, through a mixture of interview and survey-based methods. We propose that a range of sports (e.g. Australian football, netball) and developmental levels (e.g. junior, sub-elite, elite) will be examined to consider how training exposure (e.g. relative training age) and environment (e.g. access to facilities, staff) may differ between male and female sport.

Skills/attributes required by the student

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); Interpersonal skills and ability to communicate directly with participants and other project contacts;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_19

Project title: Rolling substitutions in elite netball: Do they impact line-up selection and performance?

Primary supervisor: Dr Aaron Fox

Phone: 5247 9720

Email: aaron.f@deakin.edu.au

Co-supervisor/s: Dr Lyndell Bruce

Research mentor:

Supervisor profile

Dr Aaron Fox is a research fellow in the Centre for Sport Research and has research expertise in the area of neuromechanics and human performance. Aaron's work involves the use of a range of technologies (including motion capture, force plates, electromyography, and two-dimensional ultrasound) and analytical techniques to identify optimal neuromuscular and biomechanical strategies for improving performance and reducing injury risk. Aaron's previous work has included analysing the activity patterns and workload demands of elite-level international netball. 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.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Sports coaching; Performance analysis; Sports analytics

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurin Ponds

Project description

Until recently, substitutions in elite level netball could only be made at a timeout or quarter stoppages. In the 2020 Super Netball season, a rolling substitutions rule was introduced – allowing teams to substitute players on and off the court with more freedom. The introduction of this rule may have allowed teams to more readily adapt their line-ups to different match situations as a performance enhancement measure. This project will explore how substitution patterns and line-up structures differed between the most recent and earlier iterations of the Super Netball competition. Pre-coded data from the Super Netball Match Centre (provided by Champion Data) will be used to examine each team's substitution behaviour across years, and determine whether there were any links to performance metrics with different strategies.

Skills/attributes required by the student

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 specific to this project the student will develop

Quantitative analysis (statistics); Management of large datasets

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_20

Project title: Knowledge & practices of cricket coaches in scaling the training environment for junior fast bowlers

Primary supervisor: Simon Feros

Phone: +613 5247 9723

Email: simon.feros@deakin.edu.au

Co-supervisor/s: Peter Kremer

Research mentor:

Supervisor profile

Dr Simon Feros is a Lecturer in Functional Anatomy / Strength and Conditioning Sciences based at the Geelong Waurn Ponds campus. His research is primarily focused on the management and development of cricket fast bowlers for the purposes of enhancing performance and reducing injury incidence. The majority of his research is strategically aligned and linked with Cricket Australia and Cricket Victoria. A strong focus of his industry work is to translate evidence-based, scientific findings into 'real-world' practical applications and policy changes, to ensure young cricket fast bowlers in particular are better managed and developed. Dr Peter Kremer is a senior lecturer in sport and exercise behaviour with the School of Exercise and Nutrition Sciences based at the Geelong Waurn Ponds Campus. He has extensive research experience, broad knowledge and skills in academic and applied sport and exercise psychology and expert knowledge of both quantitative and qualitative research methods.

Broad project topic area(s)

Applied Sports Science; Sports coaching;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Adolescent fast bowlers have a higher incidence of career threatening lower back injuries and stress fractures compared to adult fast bowlers. Bowling technique is considered to be a modifiable risk factor to prevent injury. One technique associated with lower back injury in adolescent fast bowlers is shoulder counter-rotation; the amount of chest rotation away from the batter in the delivery stride. Typically, young fast bowlers exhibit less shoulder counter-rotation and improved accuracy when they bowl on pitches that are ~2-4 m shorter than the adult size. Junior cricketers have always been required to bowl with a lighter and smaller cricket ball, however it wasn't until 2016-17 before Cricket Australia introduced rules for shortening the cricket pitch (~6 m for U'9s, ~4 m for U'11s, and ~2 m for U'13s). While these rules are enforced by officials in matches, they are not mandated for clubs or coaches to follow during training. This is a problem, because if junior bowlers are bowling on an adult-sized cricket pitch, with an adult-sized cricket ball, they may adopt an unsafe technique to deliver the ball, leading to a possible increase in injury risk. Therefore, this research aims to understand the knowledge and practices of cricket coaches in scaling the cricket pitch and ball for junior fast bowlers in the training environment, and associated barriers and facilitators to this implementation.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_21

Project title: Workload management and physical preparation practices of cricket coaches for junior fast bowlers

Primary supervisor: Simon Feros

Phone: +613 5247 9723

Email: simon.feros@deakin.edu.au

Co-supervisor/s: Will Vickery

Research mentor:

Supervisor profile

Dr Simon Feros is a Lecturer in Functional Anatomy / Strength and Conditioning Sciences based at the Geelong Waurn Ponds campus. His research is primarily focused on the management and development of cricket fast bowlers for the purposes of enhancing performance and reducing injury incidence. The majority of his research is strategically aligned and linked with Cricket Australia and Cricket Victoria. A strong focus of his industry work is to translate evidence-based, scientific findings into 'real-world' practical applications and policy changes, to ensure young cricket fast bowlers in particular are better managed and developed. Dr Will Vickery is a Lecturer of Sport Coaching based at the Melbourne Burwood campus. His research focuses on the impact of coaching on athlete performance, with a specific focus on practice design. Dr Vickery has experience working within a more applied (field-based) setting, using mainly quantitative analysis techniques (GPS, variety of associated software, SPSS). He is currently working on projects that look to improve the effectiveness of training sessions from the coach's perspective, and is taking on more of a qualitative approach to his research.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Strength and Conditioning; Sports coaching;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Adolescent fast bowlers have a higher incidence of career threatening lower back injuries and stress fractures, and are also more prone to overuse injuries than adult fast bowlers. An increase in overuse type injuries can occur when high workloads are applied for long periods of time, and especially when there are fewer days rest between bowling sessions. Consequentially, age-specific fast bowler workload guidelines have been developed, and are enforced by officials in matches, but it is unclear whether these are enforced in training by clubs or coaches. If not enforced, excessive workloads in training may result, leading to maladaptations and increases in injury risk. Furthermore, resistance training is important for developing the strength and resilience of the tissues to protect against injury, and should be incorporated into regular training practice. Training sessions planned by coaches are often based around skill development, and may overlook the workloads imposed on the fast bowlers and their physical development. This begs some important questions; are cricket coaches aware of the age-specific fast bowler workload guidelines, and the benefits of strength and conditioning for injury prevention? If they are, do they plan workloads and incorporate strength and conditioning into training sessions, and what does this look like? If they do not, then what are the barriers and facilitators that affect implementation in training?

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_22

Project title: Athlete perceptions of running apparel during exercise in the heat

Primary supervisor: Dr Samantha Hoffmann

Phone: 5227 3398

Email: s.hoffmann@deakin.edu.au

Co-supervisor/s: A/Prof Paul Collins (School of Engineering)

Research mentor:

Supervisor profile

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. Paul Collins is an Associate Professor in Design and Product Development in the School of Engineering, and a member of the Centre for Sport Research. He has extensive experience in the design, development and delivery of products. His research involves analysis on technology and products and how people interact with them.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

This study will investigate the preferences and perceptions of recreational and elite runners regarding their apparel when exercising in the heat. Some apparel brands claim to use cooling technologies to enhance thermoregulation and improve performance in the heat, but less is known about how runners perceive the effectiveness of these garments. Of particular interest is comfort, wearability, and whether any differences exist between men and women.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_23

Project title: Understanding wearable resistance as a training methodology to increase the demand of exercise

Primary supervisor: Dr Samantha Hoffmann

Phone: 5227 3398

Email: s.hoffmann@deakin.edu.au

Co-supervisor/s: A/Prof Paul Collins

Research mentor:

Supervisor profile

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. Paul Collins is an Associate Professor in Design and Product Development in the School of Engineering, and a member of the Centre for Sport Research. He has extensive experience in the design, development and delivery of products. His research involves analysis on technology and products and how people interact with them.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurin Ponds

Project description

This study will investigate the perceptions of recreational exercisers when using upper and lower body wearable resistance garments. Evidence is emerging to suggest that wearable resistance garments may be effective as a mechanism to increase the training stimulus during running, and less is known about the effectiveness of upper body garments. Small increases in physiological responses and perceptions of effort have been reported, however it is unknown how users actually perceive these garments in terms of comfort, feasibility and likelihood of actually wearing them for their intended purpose.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_24

Project title: Active wear: Do 'compression' qualities result in a happy runner?

Primary supervisor: Dr Samantha Hoffmann

Phone: 5227 3398

Email: s.hoffmann@deakin.edu.au

Co-supervisor/s: A/Prof Paul Collins (School of Engineering)

Research mentor:

Supervisor profile

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. Paul Collins is an Associate Professor in Design and Product Development in the School of Engineering, and a member of the Centre for Sport Research. He has extensive experience in the design, development and delivery of products. His research involves analysis on technology and products and how people interact with them.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Sport / exercise psychology;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurin Ponds

Project description

This study will be conducted in collaboration with Lululemon Athletica™, and will investigate the experiences and perceptions of female exercisers when wearing garments with compression qualities around the abdominal region and lower body whilst running. It is a collaborative project incorporating elements of athletic apparel design, and the psychological responses to exercising in this apparel. Although the results are conflicting, there is evidence surrounding the use of compression garments for the purpose of improving exercise performance, reducing the perception of effort, reducing muscle damage, and enhancing recovery. However, for the recreational exerciser, there may be additional benefits in terms of a more positive exercise experience, and enhanced comfort and confidence when wearing garments that have compression qualities.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_25

Project title: Regulation of skeletal muscle metabolic adaptations in response to exercise training

Primary supervisor: Dr Kirsten Howlett

Phone: 03 5227 2563

Email: kirsten.howlett@deakin.edu.au

Co-supervisor/s: Dr Chris Shaw

Research mentor: Mark Renton

Supervisor profile

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 to exercise with the aim of providing insight into the role of exercise in the maintenance of good health, and prevention and treatment of disease, in particular insulin resistance and type 2 diabetes. Dr Chris Shaw is a Senior Lecturer in the School of Exercise and Nutrition Sciences. His research focuses on the physiological and metabolic adaptations to exercise which underpin improvements in sports performance and the health benefits of exercise. He is particularly interested in how acute and chronic exercise influence fat and glucose metabolism in skeletal muscle. Dr Howlett and Dr Shaw have complementary research interests and skills and have successfully collaborated previously on honours research projects. Mark Renton is a PhD candidate involved in the broader project and will act as a research mentor for the student.

Broad project topic area(s)

Exercise physiology; Biomedicine;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Geelong Waurin 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, including insulin resistance and type 2 diabetes. The extracellular matrix (ECM) is a three-dimensional non-cellular structure present in all tissues that provide structural support. An emerging area of research highlights that changes or remodelling of the 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 the 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 by the student

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

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_26

Project title: Understanding the development of impaired cardiac function in obesity.

Primary supervisor: Dr Kirsten Howlett

Phone: 03 5227 2563

Email: kirsten.howlett@deakin.edu.au

Co-supervisor/s: Dr Chris Shaw

Research mentor: Mark Renton

Supervisor profile

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 to exercise with the aim of providing insight into the role of exercise in the maintenance of good health, and prevention and treatment of disease, in particular insulin resistance and type 2 diabetes. Dr Chris Shaw is a Senior Lecturer in the School of Exercise and Nutrition Sciences. His research focuses on the physiological and metabolic adaptations to exercise which underpin improvements in sports performance and the health benefits of exercise. He is particularly interested in how acute and chronic exercise influence fat and glucose metabolism in skeletal muscle. Dr Howlett and Dr Shaw have complementary research interests and skills and have successfully collaborated previously on a number of honours research projects. Mark Renton is a PhD candidate involved in the broader project and will act as a research mentor for the student.

Broad project topic area(s)

Biomedicine;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Geelong Waurin 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 in the development of this disease is the next critical step in the development of a treatment. The extracellular matrix (ECM) is a three-dimensional non-cellular structure present in all tissues that provide structural support. An emerging area of research highlights that changes or remodelling of the ECM is linked to altered cardiac function in obesity. This project aims to explore how changes in the structure and function of the ECM 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 by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_27

Project title: Maximal fat oxidation capacity in well-trained cyclists

Primary supervisor: Dr Chris Shaw

Phone: 03 5227 3394

Email: chris.shaw@deakin.edu.au

Co-supervisor/s: Dr Kirsten Howlett

Research mentor: Sofie Dideriksen

Supervisor profile

Dr Chris Shaw is a Senior Lecturer in Exercise Physiology in the School of Exercise and Nutrition Sciences. His research focuses on the physiological and metabolic adaptations to exercise which underpin improvements in sports performance and the health benefits of exercise. He has particular expertise in the assessment of fat metabolism and its regulation during exercise. 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 to exercise with the aim of providing insight into the role of exercise in the maintenance of good health, and prevention and treatment of disease, in particular insulin resistance and type 2 diabetes. Dr Howlett and Dr Shaw have complementary research interests and skills and have successfully collaborated and supervised numerous honours research projects.

Broad project topic area(s)

Sports nutrition; Exercise and sport science; Exercise physiology;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Geelong Waurn Ponds campus

Project description

The capacity to use fat during exercise varies greatly amongst individuals. Even amongst similar groups of professional athletes, fat oxidation capacity can vary ~5-fold. Aerobic capacity, habitual diet, physical activity, body composition and muscle fibre type are believed to explain some, but not all, of this variation. This poses the question as to whether such differences in metabolism are important for athletic performance and whether they are dependent upon nutritional status? This project will categorise trained cyclists as either a 'high' or 'low' fat burners by performing an incremental exercise test to determine their maximal fat oxidation (Fat max) capacity. Secondly we will determine the impact of fat oxidation capacity on fuel use during prolonged exercise in both the fasted and fed state. These results will test the relevance of metabolic profiling for individual athletes which could have implications for developing personalised training and nutrition strategies.

Skills/attributes required by the student

Knowledge and background in an exercise or sports science 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;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_28

Project title: Does acute resistance exercise influence circulating extracellular vesicles (EVs)?

Primary supervisor: Aaon Russell

Phone: 92517397

Email: aaron.russell@deakin.edu.au

Co-supervisor/s: Severine Lamon

Research mentor:

Supervisor profile

Professor Aaron Russell and Dr Severine Lamon research interest is to understand how human skeletal muscle adapts to health and disease conditions at the molecular level. They have extensive experience in running human exercise trials involving blood and muscle sampling. They have successfully supervised 12 Honours students, with the majority continuing to complete their PhD, with scholarship support. They have also co-authored more than 30 scientific research papers.

Broad project topic area(s)

Exercise physiology; molecular adaptations to resistance exercise

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Resistance exercise is used to prevent or control chronic conditions such as sarcopenia, osteoporosis, diabetes, obesity and heart and liver disease. How resistance exercise influences multiple tissues and organs is not well understood. Circulating extracellular vesicles (EVs) increase post endurance exercise; their response to resistance exercise is not well characterized. EVs are secreted from various tissues into the circulation in a stress-dependent manner. Once in circulation, EVs are taken up by other tissues. They can positively or negatively exert their influence on tissues as they contain various molecules that regulate tissue health. Therefore, the resistance exercise regulation of circulating EVs may be a mechanism contributing to whole body health. To determine the role of resistance exercise on circulating EVs, healthy participants will complete a single resistance exercise training session. EVs will be isolated from blood samples taken before, immediately after and several hours after exercise. Their size, quantity and quality will be measured using gold standard techniques. By completing this project, students will become proficient at subject recruitment/testing and conducting an exercise intervention under strict research conditions. They will learn common and specialized physiology and biomedical research lab techniques; techniques suited to students wishing to pursue postgraduate study or a future career in exercise physiology or biomedical research.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_29

Project title: Understanding Australian's screen use during and after COVID-19

Primary supervisor: Dr Lauren Arundell

Phone: 9244 6278

Email: lauren.arundell@deakin.edu.au

Co-supervisor/s: Dr Kate Parker

Research mentor:

Supervisor profile

Dr Lauren Arundell is a Postdoctoral Research Fellow within IPAN. Her research investigates physical activity and sedentary behaviours (e.g. screen time) and their impact on health and wellbeing. Lauren's research focuses on identifying the unique influence that the home- and school- environments have on children's health behaviours, and using this information to develop strategies that promote optimum physical activity and screen time levels. Dr Kate Parker is a Lecturer in Physical Activity and Health within IPAN. Her research focuses on understanding the factors that influence clustering and trajectories of physical activity and sedentary (e.g., screen use) behaviours during childhood, adolescence and young adulthood, with a particular interest in tailoring of interventions based on the unique needs of different population sub-groups. Dr Arundell and Dr Parker are co-leads on the Our Life at Home study, from which data will be used for this Honours project.

Broad project topic area(s)

Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Other, please specify

Project description

Screen use has typically been viewed as negative for our health and wellbeing. The Australian Government's restrictions to prevent the spread of COVID-19 has changed the way we engage with screens. For example, there has been increases in the use of screens for schooling, social communication and for exercise. These changes may signify lasting behaviour shifts for the Australian population. No research to date has explored the changes in screen behaviours during and after COVID-19 restrictions, why or how they have occurred, and what we can do to promote healthy screen use in the future. Using longitudinal data from the national Our Life at Home Study, this project will use a mixed methods approach. Survey data on screen use (e.g. for work/school, recreation, exercise, and social communication) has been collected from Australians aged 5-75 on four occasions since the pandemic began. Quantitative research methods will be used to explore changes in screen use over this time in different population groups. Qualitative methods (e.g. interviews or focus groups) can then further unpack these findings to identify and explore various personal, social and environmental factors associated with screen use during restrictions, and as they ease.

Skills/attributes required by the student

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 specific to this project the student will develop

Ability to conduct interviews; Quantitative analysis (statistics); Qualitative analysis;

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_31

Project title: Return to active recreation centres after COVID-19

Primary supervisor: Dr Lauren Arundell

Phone: 9244 6278

Email: lauren.arundell@deakin.edu.au

Co-supervisor/s: Dr Kate Parker

Research mentor:

Supervisor profile

Dr Lauren Arundell is a Postdoctoral Research Fellow within IPAN. Her research investigates physical activity and sedentary behaviours (e.g. screen time) and their impact on health and wellbeing. Lauren's research focuses on identifying the unique influences that the home- and school- environments have on health behaviours, and using this information to develop strategies that promote optimum physical activity and screen time levels. Dr Kate Parker is a Lecturer in Physical Activity and Health within IPAN. Her research focuses on understanding the factors that influence clustering and trajectories of physical activity and sedentary (e.g., screen use) behaviours during childhood, adolescence and young adulthood, with a particular interest in tailoring of interventions based on the unique needs of different population sub-groups. Dr Arundell and Dr Parker are co-leads on the Our Life at Home study, from which data will be used for this Honours project.

Broad project topic area(s)

Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Recreational centres (e.g. gyms and pools) are one of the key settings for physical activity, particularly amongst older adolescents and adults. Their closure during the COVID-19 pandemic lockdown restrictions changed how, where, and why people engaged in physical activity. These changes may signify lasting behaviour shifts and adaptations for the Australian population. No research to date has explored the changes in recreational centre attendance, how this is affecting people's physical activity levels, or the role of recreational centres in promoting physical activity in the future. Using longitudinal data from the national Our Life at Home Study, this project will use a mixed methods approach. Survey data on active recreation centre attendance prior to and during COVID-19 has been collected from Australians aged 5-75. Quantitative research methods will be used to explore changes in recreational centre attendance in different population groups. Qualitative methods (e.g. interviews or focus groups) will be used to further unpack these findings and explore various personal, social and environmental factors associated with (re)-joining recreational centres.

Skills/attributes required by the student

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); Interpersonal skills and ability to communicate directly with participants and other project contacts;

Skills specific to this project the student will develop

Ability to conduct interviews; Quantitative analysis (statistics); Qualitative analysis;

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_32

Project title: Understanding the Talent Development Environment in Australia

Primary supervisor: Lyndell Bruce

Phone: 9246 8967

Email: lyndell.bruce@deakin.edu.au

Co-supervisor/s: Luana Main

Research mentor: Tanisha Bardzinski

Supervisor profile

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. Dr Luana Main's research investigates relationships between stress exposure (e.g. training load), fatigue, and its impact on wellbeing and physical performance in sport and occupation contexts (i.e. Firefighters, Army) to identify warning signs of excessive stress exposure to minimise risk of injury and illness. By combining the supervisors' industry-based background in sport with their research skills, research students can expect to learn how research and sport science integrate in the elite sports environment to influence coaching decisions.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Sports coaching; Sport / exercise psychology;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurin Ponds

Project description

A large amount of time and effort is placed upon selecting the 'best' talent for further development in sporting environments. However, little understanding is placed upon the environment these talented athletes are placed into. The aim of this project is to understand the talent development environment and the impact this may be having on an athlete's development. There will be an opportunity to examine the talent development environment across different sports, genders and/or age groups dependent on the interest of the student.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_33

Project title: The role of "quiet eye" in basketball shooting performance

Primary supervisor: Lyndell Bruce

Phone: 0392468967

Email: lyndell.bruce@deakin.edu.au

Co-supervisor/s: Aaron Russell; Julia Walsh

Research mentor:

Supervisor profile

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. Prof Russell is an Exercise Physiologist with 20 years of experience in both applied and basic research. He has successfully supervised 12 honours students, all continuing on to complete their PhD with scholarship support. He has published over 130 research papers and supervised/co-supervised 20 PhD students. Dr Walsh is a senior academic working at Latrobe University. Her research interests are specific to coaching and coach education. She is Head Coach of the Australian Boomerangs, the Australian men's basketball team for athletes with an intellectual disability. Julia also coaches high performance junior girls in the Victorian Basketball Junior Basketball League. Gaze and shooting in a dynamic environment are of a particular interest to her in research and practice.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Sports coaching;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Quiet eye is a characteristic of skilled perceptual and motor performance in motor tasks that require visual guidance (e.g., basketball free throw, dart throwing). Quiet eye is the final fixation that occurs prior to initiation of the associated motor task. Superior motor performance is believed to occur if the final fixation is accurately focused on the target and of a long enough duration. Research to date has focused on testing for differences between successful and unsuccessful performances and studies training quiet eye with the aim to increase the quiet eye of athletes resulting in more successful performance. This honours project will investigate the influence of quiet eye on basketball shooting performance.

Skills/attributes required by the student

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 specific to this project the student will develop

Recruitment of participants; Primary data collection skills; Image and/or video analysis; Quantitative analysis (statistics);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_34

Project title: More Than Just a Playground: Evaluation of New and Innovative Park Equipment Installation

Primary supervisor: A/Prof Jenny Veitch

Phone: 039251 7723

Email: jenny.veitch@deakin.edu.au

Co-supervisor/s: Alfred Deakin Professor Anna Timperio and Dr Venurs Loh

Research mentor:

Supervisor profile

A/Prof Jenny Veitch is a National Heart Foundation of Australia Future Leader Fellow in the Institute for Physical Activity and Nutrition (IPAN). She is an active researcher in understanding how aspects of the neighbourhood built environment may influence physical activity and sedentary behaviour in populations. She has a particular research focus on how features and design of places such as public open spaces may promote opportunities for physical activity. Alfred Deakin Professor Anna Timperio is a Deputy Director of IPAN and the HDR Coordinator for the School of Exercise and Nutrition Science. Her research is focused on understanding the range of influences on physical activity and sedentary behaviour, particularly among children and adolescents. Much of her work focuses on the built environment. Dr Venurs Loh is a postdoctoral research fellow at IPAN. She is interested in looking at the mechanisms in which the neighbourhood environment is associated with behaviours and health among adolescents.

Broad project topic area(s)

Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Do you enjoy spending time at the park? If so, we have an exciting park-related project for you. Public open spaces, including parks, are key components of liveable cities. Visiting parks has been shown to increase physical activity, reduce stress and facilitate social interactions across all age groups. Therefore, understanding how parks can be designed or improved is a public health priority. However, little is known about the impact of newly introduced park installations on these health behaviours. This project will evaluate the impact of newly installed park equipment, such as interactive playgrounds and Ninja Park equipment, designed for children and adolescents on park use, physical activity and social interaction. You will spend time at the park at certain days to evaluate the use of specific park installations using measures such as direct observations of park visitors and intercept surveys with park visitors. Through this project, you will develop knowledge and practical skills in understanding how characteristics of the built environment influence behaviours. You will also learn a number of key research skills that will prepare you for higher degree postgraduate studies or working in industry.

Skills/attributes required by the student

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); 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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_35

Project title: How does inadequate sleep affect strength and power adaptations to resistance training?

Primary supervisor: Associate Professor Brad Aisbett

Phone: 03 9244 6474

Email: brad.aisbett@deakin.edu.au

Co-supervisor/s: Dr Eric Drinkwater; Dr Severine Lamon

Research mentor: Liv Knowles

Supervisor profile

A/Prof Brad Aisbett is one of Australia's foremost experts on how the interactions between sleep, work and exercise impact human performance. He has worked with civilian and military emergency services and national sporting teams. His research has been published internationally and featured on national television and radio programs and he has supervised fourteen honours students through to completion, with many receiving research awards from within and outside the university. Dr Eric Drinkwater is a Senior Lecturer in Strength and Conditioning, specialising in resistance training and power development in athletes. He is an accredited coach with the Australian Strength and Conditioning Association, a Certified Strength & Conditioning Specialist and accredited through Fitness Australia. Dr Severine Lamon is a Senior Lecturer with expertise in skeletal muscle physiology, molecular biology and biochemistry. Her main research interest is to understand the physiological and cellular mechanisms underlying skeletal muscle health and disease. Ms Liv Knowles is the PhD candidate in charge of the broader project and will act as a research mentor for the student.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Strength and Conditioning; Exercise physiology;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Sleep is fundamental for human health and performance. Many groups within our population, including shiftworkers and athletes are suffering from inadequate sleep. For shiftworkers, the lack of sleep comes from irregular work hours, including night-time work, whilst for athletes, late night games, early morning trainings and international travel can all disrupt sleep. Athletes and some shiftworking groups like soldiers and firefighters rely on resistance training to condition their muscles for their sport or job. Inadequate sleep has been shown to decrease resistance training performance, and theoretically could slow muscle adaptation to training through increases in cortisol and lowered testosterone. However, no study has investigated how inadequate sleep affects resistance training adaptations such as gains in strength or power following training. This project (part of a larger research program) will test the strength and power adaptations that 13 women experience during one-week of resistance training with either normal (8 h) or inadequate (5 h) sleep each night. During both test weeks, the women will complete resistance training on alternative days in the exercise prescription laboratory on the Burwood Campus. The honours student selected for this project will help supervise the training sessions and conduct performance testing pre- and post-training to evaluate whether the level of strength and power adaptation is altered by the women's quantity of sleep.

Skills/attributes required by the student

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 specific to this project the student will develop

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);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_36

Project title: The ripple effect of COVID-19 on sport

Primary supervisor: Helen Brown

Phone: 92446327

Email: h.brown@deakin.edu.au

Co-supervisor/s: Lauren Arundell, Kate Parker

Research mentor:

Supervisor profile

Dr Helen Brown is a Senior Lecturer and researcher in the School of Exercise and Nutrition. Her research investigates behaviour change and its impact on health and well being, with a focus on translation of evidence-based research findings into real world applications. Helen has extensive experience supervising PhD and Honours students. Dr Lauren Arundell is a Postdoctoral Research Fellow within IPAN. Her research investigates physical activity and sedentary behaviours and their impact on health and wellbeing. Lauren's research focuses on identifying the unique influences that different environments have on these health behaviours, and developing programs to promote optimum physical activity and sedentary behaviour. Dr Kate Parker is a Lecturer in Physical Activity and Health within IPAN. Her research focuses on understanding the factors that influence clustering and trajectories of physical activity and sedentary (e.g., screen use) behaviours during childhood, adolescence and young adulthood, with a particular interest in tailoring of interventions based on the unique needs of different population sub-groups.

Broad project topic area(s)

Exercise and sport science; Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

The effects of COVID-19 continue to ripple throughout the world's health, educational, financial and commercial institutions, and the sport ecosystem is no different. During restrictions, the majority of sporting activities were suspended or modified, sporting venues were closed, and those who usually participated in sport were forced to adapt and continue activity in their own homes or cease their activity all together. These changes have also had a major impact on the sporting organisations that facilitate our sporting competitions. These organisations have had to adapt during restrictions and try to maintain connection with, and engagement of, their participants. This project aims to gain a greater insight as to how sporting organisations adapted and changed throughout COVID-19 restrictions and more importantly, lessons they have learnt that may inform engagement in sport participation in the future. This project provides the opportunity for a student to gain valuable quantitative and qualitative research skills, working in collaboration with VicSport with the opportunity to inform future sport policy. For a student with skills and interest in sport participation, this project could be expanded to form the basis of a Ph.D. upon successful completion of Honours.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_37

Project title: 'Talking about cardiac risk factors with patients: how can we get the message through?'

Primary supervisor: Helen Brown

Phone: 92446327

Email: h.brown@deakin.edu.au

Co-supervisor/s: Lauren Arundell

Research mentor:

Supervisor profile

Dr Helen Brown is a Senior Lecturer and researcher in the School of Exercise and Nutrition. Her research investigates behaviour change and its impact on health and well being, with a focus on translation of evidence-based research findings into real world applications. Helen has extensive experience supervising PhD and Honours students. Dr Lauren Arundell is a Postdoctoral Research Fellow within IPAN. Her research investigates physical activity and sedentary behaviours and their impact on health and wellbeing. Lauren's research focuses on identifying the unique influences that different environments have on these health behaviours, and developing programs to promote optimum physical activity and sedentary behaviour.

Broad project topic area(s)

Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurin Ponds

Project description

As with many chronic conditions, Cardiovascular Disease (CVD) has a range of associated risk factors that are largely preventable and treatable. According to the latest AIHW report, 90% of Australian women have one risk factor for heart disease and 50% have two or more. As such, effective and scalable primary prevention strategies are required to reduce CVD onset and keep women out of hospital. The broad aim of this project is to gain a greater understanding of how general practitioners (GPs) talk to patients who are at risk of CVD about behaviour change. The project provides the opportunity for a student to gain valuable qualitative research skills and help inform the development of interventions targeting behaviour change in women in primary care. For a student with skills and interest in preventive medicine, this project could be expanded to form the basis of a Ph.D. upon successful completion of Honours.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_38

Project title: Exercise as medicine: Acute effects of exercise on pain

Primary supervisor: Dr Clint Miller

Phone: 92446605

Email: c.miller@deakin.edu.au

Co-supervisor/s: A/Prof Daniel Belavy, Dr Patrick Owen

Research mentor:

Supervisor profile

Dr Miller is a research-clinician (accredited exercise physiology) and Lecturer of Exercise Physiology. His research focusses on how the effects of exercise can be maximised. He also has >15yr of experience working as an exercise physiologist in private practice, as well as within Deakin's Clinical Exercise Centre. He is a member of Deakin's Spine Research Group. Dr Owen is a Dean's Postdoctoral Research Fellow within the Institute for Physical Activity and Nutrition's Spine Research Group. His research focuses on musculoskeletal health, with particular interests in back pain and biostatistics. A/Prof Belavy is the leader of the Spine Research Group and an Associate Professor of Exercise and Musculoskeletal Health within the Institute of Physical Activity and Nutrition. He is interested in research that leads to significant advances in how we conceptualize and manage back pain and the spine. He has specialist expertise in back pain, musculoskeletal imaging and data analytics. Together, Dr Owen, A/Prof Belavy and Dr Miller, have supervised four Honours students to completion, with two awarded PhD scholarships, one accepted to study medicine and another accepted to study physiotherapy

Broad project topic area(s)

Exercise and sport science; Exercise physiology; Clinical exercise;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Back pain presents the greatest cost to Australian society in terms of disability and lost productivity, above that of cardiovascular disease, diabetes, and cancer. Low back pain is the leading cause of years lived with disability worldwide and occurs in up to 85% of adults across their lifetime. Current guidelines state that treatment of chronic low back pain should include an active treatment approach such as exercise. However fear of movement in people with chronic pain leads to avoidance of exercise. The prescription of exercise for immediate reduction in pain is not well researched. Isometric exercise has been shown to reduce pain sensitivity however it is not clear what prescription variables are optimal for this effect. Evidence suggests that exercise in areas away from the exercising muscle also benefit from reduced pain sensitivity. This is important because it suggests that people who fear pain at one region might benefit from exercising the muscles in adjacent regions. Therefore the primary aim of this prospective randomised placebo controlled pilot study is to determine whether isometric exercise performed away from the site of pain leads to better outcomes than exercise performed local to the site of pain. The findings of this study may have implications for guiding clinical exercise and physiotherapy practice for the improved management of people with chronic low back pain.

Skills/attributes required by the student

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 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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_39

Project title: Exercise and pain: Can we enhance the hypoalgesic effect of exercise?

Primary supervisor: Dr Clint Miller

Phone: 92446605

Email: c.miller@deakin.edu.au

Co-supervisor/s: A/Prof Daniel Belavy, Dr Patrick Owen

Research mentor:

Supervisor profile

Dr Miller is a research-clinician (accredited exercise physiology) and Lecturer of Exercise Physiology. His research focusses on how the effects of exercise can be maximised. He also has >15yr of experience working as an exercise physiologist in private practice, as well as within Deakin's Clinical Exercise Centre. He is a member of Deakin's Spine Research Group. Dr Owen is a Dean's Postdoctoral Research Fellow within the Institute for Physical Activity and Nutrition's Spine Research Group. His research focuses on musculoskeletal health, with particular interests in back pain and biostatistics. A/Prof Belavy is the leader of the Spine Research Group and an Associate Professor of Exercise and Musculoskeletal Health within the Institute of Physical Activity and Nutrition. He is interested in research that leads to significant advances in how we conceptualise and manage back pain and the spine. He has specialist expertise in back pain, musculoskeletal imaging and data analytics. Together, Dr Owen, A/Prof Belavy and Dr Miller, have supervised four Honours students to completion, with two awarded PhD scholarships, one accepted to study medicine and another accepted to physiotherapy.

Broad project topic area(s)

Exercise and sport science; Sport / exercise psychology; Exercise physiology; Clinical exercise;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Persistent pain affects approximately 20% of the Australian population and interferes with their ability to participate fully in occupational, sporting and general activities of daily living. But managing pain is very complex. Pain is moderated by a number of factors beyond the intervention chosen to treat pain. An athlete or client's beliefs, expectations, the environment, and the coach or clinician moderate the experience of pain. These factors are consistent with the placebo effect. A nervous system driven effect which appears to be unrelated to the intended intervention but influences one's perception, emotion and physiology. What if you could manipulate the factors associated with the placebo effect? What if you could maximise the placebo effect of a specific exercise to provide an hypoalgesic effect for an athlete or client? The purpose of this research project is to determine whether a unique exercise stimulus with a placebo maximization approach increases a clients pain threshold when exposed to a painful stimuli to a greater extent than the same exercise without a placebo maximization approach. Findings from this study may be used to inform future research in athletic and clinical populations where increased pain tolerance or pain reduction is required.

Skills/attributes required by the student

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 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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_40

Project title: Health and performance issues in AFL: Preliminary Sports Science Investigations

Primary supervisor: Liz Bradshaw

Phone: 03 9244 6646

Email: liz.bradshaw@deakin.edu.au

Co-supervisor/s: Dr Eric Drinkwater and other to be determined based on final topic

Research mentor:

Supervisor profile

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 and is an ESSA Accredited Sport Scientist (Level 2) and a Life Member/Fellow of the International Society of Biomechanics in Sport. Dr Eric Drinkwater is an accomplished researcher with over 70 peer-reviewed research publication, 90% of which involve sport and exercise. He is also an experienced research supervisor, having successfully supervised 13 honours and master's students and 4 PhD students. Eric is an ESSA Accredited Sports Scientist (Level 2), an NSCA Certified Strength & Conditioning Specialist (CSCS), and a Level 3 Australian Registered Exercise Professional (AusREP).

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Strength and Conditioning; Biomechanics;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: 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
- The role of force production in performance

This research project will provide new knowledge to support longitudinal, cross-sectional studies in football codes on strength & conditioning practices for injury prevention in youth players. Honours students will be provided the opportunity to select or refine a specific topic from within this project based on their interests and career direction.

Skills/attributes required by the student

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); 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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_41

Project title: Getting what you want or getting what you need: expectations and preferences in back pain treatment

Primary supervisor: Dr Clint Miller

Phone: 924 46605

Email: c.miller@deakin.edu.au

Co-supervisor/s: A/Prof Daniel Belavy, Dr Patrick Owen

Research mentor:

Supervisor profile

Dr Miller is a research-clinician (accredited exercise physiology) and Lecturer of Exercise Physiology. His research focusses on how the effects of exercise can be maximised. He also has >15yr of experience working as an exercise physiologist in private practice, as well as within Deakin's Clinical Exercise Centre. He is a member of Deakin's Spine Research Group. Dr Owen is a Dean's Postdoctoral Research Fellow within the Institute for Physical Activity and Nutrition's Spine Research Group. His research focuses on musculoskeletal health, with particular interests in back pain and biostatistics. A/Prof Belavy is the leader of the Spine Research Group and an Associate Professor of Exercise and Musculoskeletal Health within the Institute of Physical Activity and Nutrition. He is interested in research that leads to significant advances in how we conceptualise and manage back pain and the spine. He has specialist expertise in back pain, musculoskeletal imaging and data analytics. Together, Dr Owen, A/Prof Belavy and Dr Miller, have supervised four Honours students to completion, with two awarded PhD scholarships, one accepted to study medicine and another accepted to physiotherapy.

Broad project topic area(s)

Exercise and sport science; Strength and Conditioning; Sport / exercise psychology; Exercise physiology; Clinical exercise;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Low back pain (LBP) is the leading cause of disability worldwide. It is highly prevalent and is associated with pain, functional impairment, long-term incapacity, work absenteeism and high utilisation of healthcare. Consequently, guidelines have been developed to guide treatment of acute and chronic back pain management, to direct clinical practice and to rationalise health care resources. Clinical guidelines face multiple impediments to implementation. Barriers to execution include environmental factors, clinician-related barriers, and patient factors. Clinicians have reported that patients' preferences are an important cause of non-adherence to guidelines. Non-adherence may be related to high levels of patient dissatisfaction with treatment from medical practitioners. This project is designed to investigate whether patient treatment beliefs and expectations aligns with current treatment guidelines for the management of chronic low back pain. The second aim of this project is to determine whether patient beliefs and expectations moderate recovery from low back pain at 12 weeks. The project will be a 12-week prospective cohort study that will recruit patients who present to the emergency department with low back pain as their reason for attendance. All data will be collected electronically via questionnaires using the Qualtrics platform. This study will be conducted in partnership with Eastern Health and Epworth HealthCare

Skills/attributes required by the student

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); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_42

Project title: Effect of self-reported parent height on biological maturation estimates in young athletes

Primary supervisor: Liz Bradshaw

Phone: 03 9244 6646

Email: liz.bradshaw@deakin.edu.au

Co-supervisor/s: Lyndell Bruce

Research mentor:

Supervisor profile

Dr Elizabeth (Liz) Bradshaw has 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 sports performance, injury mechanisms, and youth athletes. Dr Lyndell Bruce is a Senior Lecturer in Sports Science within the School of Exercise and Nutrition Science and a member of the Centre for Sport Research at Deakin University. She has multidisciplinary research interests including sports analytics, expertise development, talent identification, sports technology and load monitoring. Lyndell's research projects use a range of technologies (including wearables, applications and software) and analytical techniques to offer insights into the research questions.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Anthropometry, Growth and Maturation

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

The main purpose of this study is to determine whether predicted adult height and maturation in youth athletes can be accurately calculated using self-reported height from their parents. This will contribute to knowledge on this measure for researchers in this area of Exercise and Sports Science. Specifically, it will identify whether studies using this measure can be conducted without directly measuring parent's height. The requirement of directly measuring parent's height can be a barrier during participant recruitment in research involving both athlete and non-athlete youth populations.

Skills/attributes required by the student

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 projected related tasks;

Skills specific to this project the student will develop

Recruitment of participants; Primary data collection skills; Quantitative analysis (statistics); Anthropometry techniques

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_43

Project title: Risk factors for the development of chronic back pain: a population based study using UKBiobank data

Primary supervisor: A/Prof Daniel Belavy

Phone: 03 9244 6606

Email: d.belavy@deakin.edu.au

Co-supervisor/s: Dr. Patrick Owen, Dr Clint Miller

Research mentor: Scott Tagliaferri (PhD student)

Supervisor profile

A/Prof Belavy is the leader of the Spine Research Group and an Associate Professor of Exercise and Musculoskeletal Health within the Institute of Physical Activity and Nutrition. He is interested in research that leads to significant advances in how we conceptualise and manage back pain. He has specialist expertise in back pain, musculoskeletal imaging and data analytics. Dr Owen is a Dean's Postdoctoral Research Fellow within the Institute for Physical Activity and Nutrition's Spine Research Group. His research focuses on musculoskeletal health, with particular interests in back pain and biostatistics. Dr Miller is a research-clinician (accredited exercise physiology) and Lecturer of Exercise Physiology. His research focusses on how the effects of exercise can be maximised. He also has >15yr of experience working as an exercise physiologist in private practice, as well as within Deakin's Clinical Exercise Centre. He is a member of Deakin's Spine Research Group. Together, A/Prof Belavy, Dr Owen and Dr Miller, have supervised four Honours students to completion, with two awarded PhD scholarships, one accepted to study medicine and another accepted to study physiotherapy.

Broad project topic area(s)

Exercise and sport science; Clinical exercise; Physical activity;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Low back pain (LBP) affects 70-90% of Australians in their lifetime and is the leading cause of disability worldwide. Evidence exists that the presence of back pain may be related to range of physical and psychosocial factors, yet population based studies are limited. The UKbiobank is a population-based project with assessment centres across England, Wales, and Scotland that follows the health and well-being of ~500000 volunteer participants. As part of our groups ongoing work on (chronic) back pain using the UKBiobank data, you will examine the risk factors for people to develop chronic back pain. The risk factors considered will include mental health, social support, physical activity, smoking, body mass index, strength, and work status.

Skills/attributes required by the student

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 specific to this project the student will develop

Survey development; Quantitative analysis (statistics);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_44

Project title: Impact of guideline-based low back pain management in primary care.

Primary supervisor: A/Prof Daniel Belavy

Phone: 03 9244 6606

Email: d.belavy@deakin.edu.au

Co-supervisor/s: Dr. Patrick Owen, Dr Clint Miller

Research mentor:

Supervisor profile

A/Prof Belavy is the leader of the Spine Research Group and an Associate Professor of Exercise and Musculoskeletal Health within the Institute of Physical Activity and Nutrition. He is interested in research that leads to significant advances in how we conceptualise and manage back pain. He has specialist expertise in back pain, musculoskeletal imaging and data analytics. Dr Owen is a Dean's Postdoctoral Research Fellow within the Institute for Physical Activity and Nutrition's Spine Research Group. His research focuses on musculoskeletal health, with particular interests in back pain and biostatistics. Dr Miller is a research-clinician (accredited exercise physiology) and Lecturer of Exercise Physiology. His research focusses on how the effects of exercise can be maximised. He also has >15yr of experience working as an exercise physiologist in private practice, as well as within Deakin's Clinical Exercise Centre. He is a member of Deakin's Spine Research Group. Together, A/Prof Belavy, Dr Owen and Dr Miller, have supervised four Honours students to completion, with two awarded PhD scholarships, one accepted to study medicine and another accepted to study physiotherapy.

Broad project topic area(s)

Exercise and sport science; Clinical exercise; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Low back pain (LBP) affects 70-90% of Australians in their lifetime and is the leading cause of disability worldwide. Evidence-based clinical guidelines exist, and international data has shown that guideline adherence improves patient outcomes and reduces healthcare costs; however, adherence to guidelines is suboptimal. This honours project will be conducted as part of a 12-week prospective cohort study that will recruit patients who routinely present to the emergency departments involved for low back pain. Follow-up will be administered via electronic questionnaires using the Qualtrics platform. Pending your specific interest in the project, a focus of your honours work could be on the impact of guideline-adherence on patient disability (self-report function), medication use (e.g. opiates) or extent of referral to imaging (i.e. MRI, CT, X-ray). This research forms an important step in the evaluation of current guidelines for the management of low back pain and will underpin the development and implementation of a guideline-based package of interventions that will be trialled and refined in the emergency department setting. This project will be conducted in partnership with Eastern Health and Epworth HealthCare.

Skills/attributes required by the student

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 specific to this project the student will develop

Recruitment of participants; Primary data collection skills; Quantitative analysis (statistics); Project management and participant follow-up

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_45

Project title: Are mitochondria secreted into the circulation during endurance exercise?

Primary supervisor: A/Prof Glenn Wadley

Phone: 92446018

Email: glenn.wadley@seakin.edu.au

Co-supervisor/s: Prof Aaron Russell, Dr Adam Trewin

Research mentor:

Supervisor profile

A key focus of A/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 Aaron Russell is a world expert in the role of mitochondria in muscle growth and regeneration. Dr Adam Trewin is an expert on the effects of exercise on skeletal muscle mitochondria.

Broad project topic area(s)

Exercise physiology; Biomedicine;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

This project will examine the mechanisms that stimulate muscle to adapt to endurance exercise training. The skills students would develop from this Honours project are ideally suited to students wishing to pursue postgraduate study or a future career in exercise physiology, biomedical research (incl. PhD), medicine or physiotherapy. There is now emerging evidence that mitochondria are secreted into the circulation by tissues and/or cells and it is postulated that they may also 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. Improved understanding of the mechanisms underlying how mitochondria are regulated has implications not only for conditions and diseases affecting muscle, but also those of other tissues and cell types that are highly dependent upon mitochondrial health such as cardiac tissue. Pilot experiments will first be conducted to validate the extraction method of mitochondria from previously collected blood samples. An exercise study will then be conducted in healthy participants with blood samples taken before, during and after a bout of endurance exercise. The mitochondria will be isolated from the blood samples and the quantity & quality measured. All laboratory techniques will be taught to the student as part of the honours training. Students will become proficient at exercise/VO₂max testing and common laboratory techniques.

Skills/attributes required by the student

Knowledge and background in an exercise or sports science related field; Knowledge and background in anatomy and/or physiology; Ability to work as a team member;

Skills specific to this project the student will develop

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);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_46

Project title: Does endurance exercise in juvenile life increase the proliferation of muscle cells in the heart?

Primary supervisor: A/Prof Glenn Wadley

Phone: 92446018

Email: glenn.wadley@deakin.edu.au

Co-supervisor/s: Dr Shaun Mason, Dr Adam Trewin

Research mentor:

Supervisor profile

A key focus of A/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 most of his previous Honours students have been successful in obtaining entry to competitive postgraduate programs including PhD, Medicine and Master of Dietetics. Dr Shaun Mason is an expert in clinical trials and measurement of stable isotopes in tissues using mass spectrometry. Dr Adam Trewin is an expert on the effects of exercise on muscle metabolism.

Broad project topic area(s)

Exercise physiology; Biomedicine;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

This project will examine the mechanisms that stimulate heart muscle to adapt to endurance exercise training in juvenile life. The skills students would develop from this Honours project are ideally suited to students wishing to pursue postgraduate study or a future career in exercise physiology or biomedical research (including a PhD), medicine or physiotherapy. Endurance exercise training is well established to be very beneficial for the heart and is well documented to increase heart mass. Much of this increase is due to an increase in the size of each muscle fiber in the heart (called cardiomyocyte hypertrophy). We have now established that endurance training in juvenile life also results in an increase in cardiomyocyte number. Changes in cardiomyocyte number are due to a balance between proliferation (new cells) and apoptosis (loss of existing cells). Therefore, the aim of the project is to examine if the increase in cardiomyocyte number following juvenile exercise are due to proliferation.

Using heart tissue from endurance trained rats that has already been collected the project will measure cell proliferation by mass spectrometry. 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 biomedical and physiology research such as mass spectrometry and immunoblotting.

Skills/attributes required by the student

Knowledge and background in anatomy and/or physiology; Ability to work as a team member;

Skills specific to this project the student will develop

Laboratory techniques; Quantitative analysis (statistics);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_47

Project title: Effectiveness of workplace wellness programs for maintaining health and promoting healthy behaviours

Primary supervisor: Helen Brown

Phone: 92446327

Email: h.brown@deakin.edu.au

Co-supervisor/s: Brad Aisbett and Luana Main

Research mentor:

Supervisor profile

Dr Helen Brown is a Senior Lecturer and researcher in the School of Exercise and Nutrition Sciences. Her research explores behaviour change to reduce risk factors for chronic disease, with a strong focus on translation of evidence-based research findings into real world applications, ensuring optimum health and well-being outcomes are achieved. Helen has extensive experience supervising PhD and Honours students.

Broad project topic area(s)

Exercise and sport science; Physical activity; Health promotion (including policy);

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Workplace wellness programs have shown to be effective in improving health, however the association between program implementation factors, participant experience and health outcomes is poorly understood. This project will provide a greater understanding of factors influencing participation in workplace wellness program; and perceived support and preferences for program content and delivery. Results will provide a greater understanding of the associations between these factors and will inform future development and program delivery. The project will involve both quantitative and qualitative methodologies and provide students with the opportunity to experience working within an international workplace wellness program.

Skills/attributes required by the student

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); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_48

Project title: Tackling and ACL injuries in AFLW: We need to tackle the problem more closely?

Primary supervisor: Dr Aaron Fox

Phone: 5247 9720

Email: aaron.f@deakin.edu.au

Co-supervisor/s: Dr Natalie Saunders & Dr Lyndell Bruce

Research mentor:

Supervisor profile

Dr Aaron Fox is a research fellow in the Centre for Sport Research and has research expertise in the area of neuromechanics and human performance. Aaron's work involves the use of a range of technologies (including motion capture, force plates, electromyography, and two-dimensional ultrasound) and analytical techniques to identify optimal neuromuscular and biomechanical strategies for improving performance and reducing injury risk. Dr Natalie Saunders is a lecturer in Clinical Exercise Physiology and is currently also working as an Accredited Exercise Physiologist. Her research interests include neuromuscular control and biomechanics in a functional context, in particular understanding the various loads on the human body that results in injury, prevents injury or is related to the rehabilitation of various structures. 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.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Clinical exercise; Biomechanics;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

In 2019 there was considerable media attention surrounding ACL injuries in the Women's Australian Football League (AFLW). Data was showing that AFLW players are up to nine times more likely to suffer an ACL injury compared to male AFL players. This resulted in media attention suggesting that we had a "knee crisis" in the AFLW. During 2020, the research team listed for this project examined the ACL injuries that occurred during game play over a four year period. Results have shown that defensive pressure and tackling is a skill predominantly associated with injury. This poses the question therefore, why tackling? This is not a common theme in other sports known to be high-risk for ACL injury. Do we need to first understand what skill development and training is occurring to better understand if and how we can tackle the problem. This project will aim to explore skill development and training practices in women's football and may include both surveying coaches and observing training practice. We'll look at this to understand whether there are any issues/deficits with the current practices.

Skills/attributes required by the student

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); 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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_49

Project title: I want to get back into physical activity after having a baby, but my body is just NQR.

Primary supervisor: Dr Natalie Saunders

Phone: 9246 8284

Email: natalie.saunders@deakin.edu.au

Co-supervisor/s: Dr Jason Bonacci

Research mentor:

Supervisor profile

Dr Natalie Saunders is a lecturer in Clinical Exercise Physiology and is currently also working as an Accredited Exercise Physiologist. Her research interests include neuromuscular control and biomechanics in a functional context, in particular understanding the various loads on the human body that results in injury, prevents injury or is related to the rehabilitation of various structures. Dr Jason Bonacci will also act as co-supervisor for this project. Dr Bonacci is a physiotherapist with extensive experience in researching musculoskeletal injury.

Broad project topic area(s)

Exercise and sport science; Applied Sports Science; Clinical exercise;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Returning to physical activity after childbirth is an important for both the health of the mother and baby. This projects aims to understand what physical factors exist that influence a women returning to exercise after childbirth. The data for this study stems from a larger project that is examining the biopsychosocial determinants of women returning to physical activity and exercise after childbirth. This project relies on qualitative data stemming from interviews conducted with post-natal women to identify common themes in the physical capacity for women to return to exercise. The student will be expected to analyse the relevant interview data, conduct analyses and interpret findings of results.

Skills/attributes required by the student

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 specific to this project the student will develop

Primary data collection skills; Qualitative analysis;

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: ESS_50

Project title: Identifying team playing styles in Australian Football and their association with winning matches.

Primary supervisor: Dan Dwyer

Phone: 5227 3476

Email: dan.dwyer@deakin.edu.au

Co-supervisor/s: Aaron Fox, Chris Young

Research mentor:

Supervisor profile

<https://www.deakin.edu.au/about-deakin/people/dan-dwyer>

<https://www.deakin.edu.au/about-deakin/people/chris-young>

<https://www.deakin.edu.au/about-deakin/people/aaron-fox>

Broad project topic area(s)

Applied Sports Science;

Course code: H442 Bachelor of Exercise and Sport Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

This project proposes to explore a large database in order to answer specific questions about the relationships between playing style and performance. This project will use a data analysis method, called latent profile analysis, to identify team playing styles in AFL, based on technical performance indicators (i.e. match statistics). The project will seek to determine how many playing styles there are, whether playing style determines match outcome, and whether teams could change their playing style to beat an opposing playing style. The project has the opportunity to improve the tactical knowledge of Australian football, increasing the competitiveness of competition.

Skills/attributes required by the student

Ability to learn relevant software programs (e.g. Excel, statistical software program); Willingness to use video-conferencing for most meetings if you aren't in Geelong

Skills specific to this project the student will develop

Strong data processing and analysis skills, that we will help you learn

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_1

Project title: Understanding salt taste preference and dietary intake of adults

Primary supervisor: Dr Sze-Yen Tan

Phone: (03) 9246 8977

Email: szeyen.tan@deakin.edu.au

Co-supervisor/s: Prof Russell Keast

Research mentor:

Supervisor profile

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. Prof Russell Keast is a Professor in sensory and food science. The majority of Professor Keast's published research has focused on the relationship between taste and diet with a specific focus on problem nutrients, fat, salt and sugar. His research group are leaders in discovery of a 'Alimentary' taste responsive to fat and carbohydrate and have identified an associations between Alimentary tastes and diet.

Broad project topic area(s)

Dietetics; Food and nutrition science; Sensory and consumer science; Public health nutrition;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Ta+AB2:AB71ste 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 humans. 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 by the student

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); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_2

Project title: How do visual, verbal and written guides improve portion size selection for nutritional education?

Primary supervisor: Dr Sze-Yen Tan

Phone: (03) 9246 8977

Email: szeyen.tan@deakin.edu.au

Co-supervisor/s: Dr Brenton Baguley

Research mentor:

Supervisor profile

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 obesity management. He has conducted several studies that examined the effects of various dietary factors e.g. eating patterns, dietary protein and fat, nuts, sensory perception, and food-structure on body weight regulation and health biomarkers. His current research focuses on understanding how food intake and choices are regulated, and how these influence health in the long term. He has extensive research publications and experience in supervising PhD and Honours students. Dr Brenton Baguley is an Accredited Practising Dietitian & Lecturer in Nutrition and Dietetics. Brenton's research focuses on improving disease- and treatment-related outcomes for cancer survivors. He has experience in several dietetic and exercise interventions in cancer patients investigating cardiac, metabolic, and body composition parameters that are often compromised from treatment. Brenton has a strong clinical dietetics background and has experience in supervising PhD and nutrition and exercise honours students.

Broad project topic area(s)

Dietetics; Food and nutrition science; Public health nutrition;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Humans are poor at predicting food portion sizes. Our previous study found that adults overestimated how much they can eat (1), which has important implications on overeating and obesity in the long term. Strategies to improve the accuracy of portion size selection are needed.

The Australian Guide to Healthy Eating (AGHE) advises the Australian population on the number of serves for daily consumption of 5 major food groups and discretionary foods. In dietetic practice, dietary food serves advice is delivered to patients in either visual (i.e. food models and pictures), verbal (through nutrition counselling), and written material. In all cases, food serve sizes are often described as household measurements e.g. ½ cup cooked pasta and ¼ cup muesli. The AGHE further provides visual guides typical food serve sizes. In this project, the student will investigate if visual or verbal/written food serve size guides will improve the accuracy of food portion selection by adults.

(1) Nguyen, A.; Chern, C.; Tan, S.-Y. Estimated portion size versus actual intake of eight commonly consumed foods by healthy adults. *Nutrition & Dietetics* 2016, 73, 490-497

Skills/attributes required by the student

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

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_3

Project title: Food Practices of Australians during COVID-19

Primary supervisor: Dr Claire Margerison, Dr Alison Booth, Prof Tony Worsley

Phone: Claire 92517293

Email: claire.margerison@deakin.edu.au

Co-supervisor/s:

Research mentor:

Supervisor profile

Dr Claire Margerison is an Accredited Practising Dietitian and Senior Lecturer. Her broad research interests include nutrition and dietetics education. Current research includes: nutrition education curriculum in secondary schools; food literacy; mental health. She has supervised four honours students and three PhD students to completion. She currently co-supervises three PhD students, two Master students and one nutrition intern with Dr Booth. Dr Alison Booth is a senior lecturer and Registered Nutritionist and specialises in nutrition promotion. Her current research focuses on food and nutrition education in schools. She has supervised six honours students to completion, co-supervised one PhD student to completion, won two category 1 grants and published over 25 publications. Prof Worsley has successfully supervised over 40 PhD and Masters theses (as principal supervisor) in nutrition promotion and behavioural nutrition. Nutrition education is the major focus of Worsley's research which involves colleagues in Canada, Ireland, Indonesia, the UK, Sweden and the USA. Prof Worsley has published over 280 papers in public health nutrition and nutrition promotion.

Broad project topic area(s)

Food and nutrition science; Public health nutrition; Health promotion (including policy); Food behaviour/practices

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

In 2020, we ran three online surveys about household's experiences during COVID-19. Survey 1 focused on general food practices, survey 2 focused on food gardens and children's food practices and survey 3 focused on meal kit and food delivery services. Surveys asked both quantitative and qualitative questions. These surveys are currently still live online and the data has not yet been downloaded or analysed. We are happy to discuss projects ideas relating to one or all of these surveys with any potential honours students.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_4

Project title: Supplementing staple foods with plant or insect protein to increase satiety

Primary supervisor: Dr Andrew Costanzo

Phone: +61 3 9246 8207

Email: andrew.costanzo@deakin.edu.au

Co-supervisor/s: Dr Shirani Gamlath

Research mentor:

Supervisor profile

Dr Andrew Costanzo is a lecturer in nutrition science and a researcher at the CASS Food Research Centre at Deakin University. His area of research explores how different tastes and taste perceptions influence food intake and satiety. He has expertise in human trials and using genetic research models, such as twin studies, to learn more about how taste perception varies from person to person. Dr Shirani Gamlath has actively established a research program on the use of novel functional/healthful ingredients in product development and application of novel processing technologies such as extrusion technology and high-pressure processing to retain nutritional and bioactive components in foods. This field encompasses knowledge and expertise in several areas including product development, novel process technologies and product evaluation. Shirani has experience in product development with cereals, legumes and fruits, and also product evaluation based on nutritional, physicochemical and sensory analysis.

Broad project topic area(s)

Food and nutrition science; Sensory and consumer science;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

High protein diets are effective at helping individuals maintain a healthy weight due to being highly satiating compared to other macronutrients. Supplementing protein into staple foods that are easily affordable, such as bread, is an easy way to incorporate added protein into a diet. However, it is difficult to recommend increasing protein intake at a population level because current farming practises that produce high-protein products from livestock are not sustainable, especially when considering climate change and increasing populations worldwide. Due to this, high-protein products made from livestock are becoming more expensive and less attainable. Proteins produced from sources other than livestock, such as plants and insects, are becoming more favourable as their production has a lower ecological footprint. However, the satiating effects of proteins are not necessarily equal, and it is unclear whether proteins from plants and insects are able to add a significant satiating effect when supplemented into staple foods. This study will involve the development of a novel staple food with added plant and/or insect proteins, and then comparing the satiating effects of these novel foods with a control food. Other outcomes that will be measured include the acceptability and hedonics of these foods.

Skills/attributes required by the student

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;

Skills specific to this project the student will develop

Recruitment of participants; Primary data collection skills; Quantitative analysis (statistics); Product Development

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_5

Project title: Using 'fat taste' to regulate the control of appetite

Primary supervisor: Dr Andrew Costanzo

Phone: +61 3 9246 8207

Email: andrew.costanzo@deakin.edu.au

Co-supervisor/s: Prof Russell Keast

Research mentor:

Supervisor profile

Dr Andrew Costanzo is a lecturer in nutrition science and a researcher at the CASS Food Research Centre at Deakin University. His area of research explores how different tastes and taste perceptions influence food intake and satiety. He has expertise in human trials and using genetic research models, such as twin studies, to learn more about how taste perception varies from person to person. Prof Russell Keast is a Professor in sensory and food science. The majority of Professor Keast's published research has focused on the relationship between taste and diet with a specific focus on problem nutrients, fat, salt and sugar. His research group are leaders in discovery of an 'alimentary' taste responsive to fat and carbohydrate and have identified an association between alimentary tastes and diet.

Broad project topic area(s)

Food and nutrition science; Sensory and consumer science;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Fat taste (the taste response to fatty acid in food) is an influencer of eating behaviour. Individuals who are very sensitive to fat taste tend to eat smaller portion sizes of fatty foods and have lower body mass, whereas individuals who are not very sensitive tend to overconsume fatty foods and have a larger body mass (Stewart, Newman & Keast, 2011; Costanzo et al., 2017). The CASS Food Research Centre has been on the forefront of researching fat taste as a potential mechanism for obesity prevention and/or treatment. Recently, trials have been conducted on the use of fat taste stimuli as a potential appetite suppressant (Costanzo et al., 2020). Understanding the dose of fatty acid that is required to produce a clinically relevant satiety response is important. This project will involve a randomised controlled trial where the student will provide participants with a range of fat taste solutions with varying concentrations of fatty acid, and then measure the participants' feelings of satiety over a short period. This will determine which concentration of fatty acid is optimal for use as an appetite suppressant.

Skills/attributes required by the student

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;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_6

Project title: Development of a novel 'fat taste' solution

Primary supervisor: Dr Andrew Costanzo

Phone: +61 3 9246 8207

Email: andrew.costanzo@deakin.edu.au

Co-supervisor/s: Dr Snehal Jadhav

Research mentor:

Supervisor profile

Dr Andrew Costanzo is a lecturer in nutrition science and a researcher at the CASS Food Research Centre at Deakin University. His area of research explores how different tastes and taste perceptions influence food intake and satiety. He has expertise in human trials and using genetic research models, such as twin studies, to learn more about how taste perception varies from person to person. Dr Snehal Jadhav is working with the CASS Food Research Centre in the School of Exercise and Nutrition Sciences. Her current research focuses on developing solutions for maintenance of microbial food safety in food and food processing environments. Her previous research experience in the area of food microbiology has been linked with the dairy and meat industry in Victoria working on developing proteomics and metabolomics-based approaches to characterise foodborne pathogens using mass spectrometry-based platforms.

Broad project topic area(s)

Food and nutrition science; Sensory and consumer science;

Course code: H418 Bachelor of Nutrition Sciences(Honours)

Project is based at: Melbourne Burwood campus

Project description

Fat taste (the taste response to fatty acid in food) is an influencer of eating behaviour. Individuals who are very sensitive to fat taste tend to eat smaller portion sizes of fatty foods and have lower body mass, whereas individuals who are not very sensitive tend to overconsume fatty foods and have a larger body mass. The CASS Food Research Centre has been on the forefront of researching fat taste as a potential mechanism for obesity prevention and/or treatment. Recently, trials have been conducted on the use of fat taste stimuli as a potential appetite suppressant. The current gold standard fat taste solution is effective, but it requires a significant investment in time and effort to prepare. It is also fairly unstable and only lasts a short period. The development of a new fat taste solution which resolves these flaws, while remaining effective, is necessary to increase the output of fat taste research. This study will involve the student developing a novel fat taste solution using high-speed processing, and then comparing the taste perception of the current and novel solutions on human participants.

Skills/attributes required by the student

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;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_7

Project title: Eating in the absence of hunger and pleasure. Why do we keep eating when we don't want or need to?

Primary supervisor: Georgie Russell

Phone: 0392468503

Email: georgie.russell@deakin.edu.au

Co-supervisor/s: Dr Andrew Costanzo and Dr Snehal Jadhav

Supervisor profile

Dr Georgie Russell is a Senior Lecturer and active researcher in the area of psychosocial determinants of food choices and intakes and has published more than 40 peer reviewed journal articles in this area. Georgie teaches in the areas of healthy and sustainable food systems and behaviours, as well as in research skills. Georgie supervises Honours, Masters and PhD students. Dr Andrew Costanzo is a lecturer in nutrition science and a researcher. He explores how different tastes and taste perceptions influence food intake and satiety. He has expertise in human trials and using genetic research models to learn more about how taste perception varies from person to person. Dr Snehal Jadhav is a lecturer in food safety and a researcher. Her current research focuses on developing solutions for maintenance of microbial food safety in food and food processing environments. Her previous research experience in the area of food microbiology was on developing proteomics and metabolomics-based approaches to characterise foodborne pathogens using mass spectrometry-based platforms. Dr Jadhav is now keen to apply her skills and expertise in metabolomics in nutrition and health sciences.

Broad project topic area(s)

Dietetics; Food and nutrition science; Sensory and consumer science; Public health nutrition;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Have you ever consumed (junk) foods and noticed that you enjoyed them initially, but continued to consume them even when the pleasure was gone? Why can't we stop eating sometimes even though we are not hungry and not enjoying it? Eating in the absence of hunger (consuming highly palatable foods when already satiated) is associated with overeating and weight gain. Individual differences in the tendency to eat palatable foods even when satiated have been linked with a number of psychological, physiological and social factors, including those that are both consciously perceived and under cognitive control (e.g. how healthy the food might be), and those that occur at the subconscious level. For some individuals, the strength of these effects may be particularly powerful, making it more difficult to resist temptation and improve dietary intake. This study will explore differences between individuals in how susceptible they are to the rewarding properties of food with a view to understanding what drives consumption of junk foods for some people. The student will conduct an 'eating in the absence of hunger' experiment across two occasions and will manipulate the palatability of foods that are presented to participants on each occasion, while keeping their nutrient composition similar. Key characteristics of the participants will also be measured to identify who is more susceptible to the rewarding properties of foods.

Skills/attributes required by the student

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); Interpersonal skills and ability to communicate directly with participants and other project contacts; Ability to work as a team member;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_8

Project title: School food environment, education and curriculum.

Primary supervisor: Alison Booth, Claire Margerison, Tony Worsley

Phone: 0392517211

Email: alison.booth@deakin.edu.au

Co-supervisor/s:

Research mentor: TBA

Supervisor profile

Dr Alison Booth is a senior lecturer and Registered Nutritionist and specialises in nutrition promotion. Her current research focuses on food and nutrition education in schools and the school food environment. She has co-supervised seven Honours students, one PhD student to completion, and currently co-supervises four PhD students and two Master students. Dr Claire Margerison is an Accredited Practising Dietitian and Senior Lecturer. Her broad research interests include nutrition and dietetics education. Current research includes: nutrition education curriculum in secondary schools; food literacy; mental health. She has supervised four honours students and three PhD students to completion. Prof Tony Worsley Nutrition education is the major focus of Worsley's research which involves colleagues in Canada, Ireland, Indonesia, the UK, Sweden and the USA. This work has been supported in the past two years through the award of two Australia Fellowships (from Sri Lanka and Indonesia) as well as recent funding for projects in Sri Lanka, Indonesia and Victoria. Currently Prof Worsley is the principal supervisor of four PhD students Worsley has over 280 publications.

Broad project topic area(s)

Food and nutrition science; Public health nutrition; Health promotion (including policy); Food behaviour and education

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

We are happy to discuss possible projects that relate to:

- a) Surveys or interviews of parents and/or teachers about their views of school food and nutrition education curriculum programs.
- b) Explore how food and nutrition education in schools align with the principles of food literacy.
- c) Surveys or interviews of parents and/or teachers' views of the food environment in schools particularly those relating to food service provision. E.g. canteens, lunches, cafeteria, gardens, etc.
- d) Map the published curriculum for food education in Australia and internationally.
- e) Exploration of teachers use of food and nutrition education resources in the classroom
- f) Other proposals relating to nutrition promotion/education, school food environment and curriculum.

Skills/attributes required by the student

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; Ability to travel to offsite for data collection and other projected related tasks;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_11

Project title: Food and nutrition resources used in Victorian primary schools – are they evidence-based?

Primary supervisor: Dr Penny Love

Phone: 03 5227 8484

Email: penny.love@deakin.edu.au

Co-supervisor/s: Dr Claire Margerison

Research mentor: Gozde Aydin

Supervisor profile

Dr Penny Love is an Accredited Practising Dietitian and a senior lecturer. The focus of her research is identifying and addressing research-practice gaps for the implementation of childhood obesity prevention interventions at scale. Dr Claire Margerison is an Accredited Practising Dietitian and Senior Lecturer. Her broad research interests include nutrition and dietetics education. Current research includes: nutrition education curriculum in schools; food literacy; mental health. Gozde Aydin is a PhD candidate in the School of Exercise and Nutrition Sciences. She is a dietitian and a school teacher. The focus of her research is identifying food and nutrition education opportunities within primary schools.

Broad project topic area(s)

Dietetics; Public health nutrition; Health promotion (including policy);

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Schools are regarded as a key setting for children to learn about food and health behaviours. In Victorian primary schools, only 2.6% of the Victorian Curriculum appears to relate to food and nutrition education, taught predominantly through two (of seven) learning outcomes. Food and nutrition teaching resources are available to teachers via the Department of Education and Training (DET) website – FUSE. A variety of food and nutrition resources exist, sourced from Australian and other international sources. This research will explore the evidence-base of food and nutrition resources available on the FUSE website and their appropriateness for the Australian context. This research project will provide the student with the opportunity to develop research skills with real-world application. Project findings will provide valuable insights into practical ways to work with and support DET to enhance the provision of evidence-based food and nutrition resources.

Skills/attributes required by the student

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;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_12

Project title: Patient and carer nutrition information experience and needs during cancer survivorship

Primary supervisor: Dr Brenton Baguley

Phone: 9246 8383 (95780)

Email: b.baguley@deakin.edu.au

Co-supervisor/s: Dr Nicole Kiss, Jenelle Loeliger, Jane Stewart

Research mentor: Annie Curtis

Supervisor profile

Dr Brenton Baguley is an Accredited Practising Dietitian and Lecturer in Nutrition and Dietetics in the School of Exercise and Nutrition Sciences. Brenton's research focuses on improving disease- and treatment-related outcomes for adults with cancer through nutrition and exercise interventions. Dr Nicole Kiss is an Advanced Accredited Practising Dietitian and Senior Clinical Research Fellow in the School of Exercise and Nutrition Sciences. Nicole's research investigates interventions to optimise nutritional and functional outcomes during cancer treatment, improving the recognition and management of cancer malnutrition and the evaluation of novel models of health care delivery. Jenelle Loeliger is the Joint Head of Nutrition and Speech Pathology at Peter MacCallum Cancer Centre, an Advanced Accredited Practising Dietitian and provides leadership to the Victorian Cancer Malnutrition Collaborative. Jane Stewart is the Clinical Lead Dietitian at Peter MacCallum Cancer Centre. She has a passion for improving the nutritional care of patients with cancer and is actively involved in the Victorian Cancer Malnutrition Collaborative program of work.

Broad project topic area(s)

Dietetics; Food and nutrition science;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Patients and carers value and rate nutrition as an important aspect of cancer treatment, yet many feel unsupported and confused in regards to nutrition advice. The nutrition information practices that are helpful and useful to patients and carers following cancer treatment are currently not well understood and require investigation. In particular, the need for nutrition information during the survivorship transition period between the hospital and community. This project will involve an online survey of cancer patients and their carer's following completion of cancer treatment. The project aims to gain an understanding of where and how nutrition information and support is sourced, whether the information meets their needs and identify gaps in current nutrition services. The findings of this project will provide insight into the unmet patient and carer nutrition information needs during the survivorship period following completion of cancer treatment, specifically the transition between the hospital/treating centre and the community. This will enable the development of new tailored nutrition information and provide direction for appropriate nutrition services during the cancer survivorship period.

Skills/attributes required by the student

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;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_13

Project title: Nutrition environments in Victorian Long Day Care Services – do they align with best practice?

Primary supervisor: Dr Penny Love

Phone: 03 5227 8484

Email: penny.love@deakin.edu.au

Co-supervisor/s: Dr Alison Spence

Research mentor: Audrey Elford

Supervisor profile

Dr Penny Love is an Accredited Practising Dietitian and a Senior Lecturer in Community and Public Health Nutrition. The focus of her research is identifying and addressing research-practice gaps for the implementation of childhood obesity prevention interventions at scale. Dr Alison Spence is a Senior Lecturer in Population Nutrition, Community Dietetics co-ordinator, and Advanced Accredited Practising Dietitian (APD). Her research focusses on promoting nutrition and health for young children, including understanding and improving young children's diet quality, parental feeding practices, and family meals. Audrey Elford is a PhD candidate focusing her research on early childhood nutrition. Her PhD project is investigating unique barriers and enablers, as well as implementation strategies to ensure consistent nutritious on-site food provision within Long Day Care settings.

Broad project topic area(s)

Dietetics; Public health nutrition; Health promotion (including policy);

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Either Burwood or Waurin Ponds

Project description

The increasing number of children and amount of time spent in childcare provides strong rationale to explore the important role that physical, practice and policy environments play in influencing healthy eating behaviours of young children in care. This project will examine the literature to identify best practice audit tools for assessing the nutrition environments of Long Day Care (LDC) childcare services, and undertake several audits to examine current nutrition environments within Victorian LDC services. This project forms part of a broader body of research exploring food provision within Victorian LDC services. The project will provide the student with the opportunity to develop research skills with real-world application. Project findings will offer valuable insights into practice and policy changes needed to ensure best practice food environments within Victorian Long Day Care services.

Skills/attributes required by the student

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 to travel to offsite for data collection and other projected related tasks; Ability and willingness to learn intermediate QUALITATIVE research skills eg: qualitative interviewing, thematic analysis

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_14

Project title: Investigation of the antimicrobial and biofilm-inhibitory effects of plant-based antimicrobials.

Primary supervisor: Dr Snehal Jadhav

Phone: 0392468606

Email: snehal.jadhav@deakin.edu.au

Co-supervisor/s: A/Prof Rob Shellie

Research mentor: Agnes Mukurumbira (PhD student)

Supervisor profile

Dr Snehal Jadhav is working with the CASS Food Research Centre in the School of Exercise and Nutrition Sciences. Her current research focuses on developing solutions for maintenance of microbial food safety in food and food processing environments. Her previous research experience in the area of food microbiology has been linked with the dairy and meat industry in Victoria working on developing proteomics and metabolomics-based approaches to characterise foodborne pathogens using mass spectrometry-based platforms. Rob Shellie is Associate Professor, Food Chemistry and Flavour Science. His innovative analytical science research has demonstrable impact across academia and industry. He has deep industry links and >140 publications shared with >150 co-authors. Rob has supervised 9 Hons, 3 MSc, and 28 PhD students. Examples of positions which his past research students are employed are Proteomics Scientist at NZ Crown Research Institute, Assistant Professor at University of Natural Resources and Life Sciences, Applications Specialist at SCIEX, Post Doc at Australian Wine Research Institute.

Broad project topic area(s)

Food and nutrition science;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Maintenance of microbial food safety in the supply chain is a major challenge for the food industry. Foodborne pathogens such as Salmonella, Listeria etc. can lead to serious foodborne outbreaks. Not only are these pathogens a threat to public health but they can also lead to major product recalls that are economically very damaging to the food industry. In addition, some pathogenic bacteria also have the ability to colonise abiotic surfaces in the processing plant forming 'biofilms'. Bacterial biofilms can frequently contaminate food products and the production environment and are generally known to be quite resistant to disinfection. Considering the increase in incidence of antimicrobial resistance in pathogens and the inclination of consumers towards products derived from natural sources, plant-based antimicrobials seem a useful alternative. In this project, various 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 (e.g. biofilm formation assays, scanning electron microscopy) to assess the effect of the antimicrobials against biofilms formed by some common foodborne pathogens. 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 by the student

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 specific to this project the student will develop

Laboratory techniques; Qualitative analysis;

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_15

Project title: Malnutrition prevalence in patients with upper gastrointestinal cancer using the GLIM criteria

Primary supervisor: Dr Nicole Kiss

Phone: 9246 8858

Email: nicole.kiss@deakin.edu.au

Co-supervisor/s: Dr Brenton Baguley, Irene Deftereos

Research mentor:

Supervisor profile

Dr Nicole Kiss is an Advanced Accredited Practising Dietitian and senior lecturer in the School of Exercise and Nutrition Sciences. Nicole's research investigates interventions to optimise nutritional and functional outcomes during cancer treatment, improving the recognition and management of cancer malnutrition and the evaluation of novel models of health care delivery. Dr Brenton Baguley is an Accredited Practising Dietitian and Lecturer in Nutrition and Dietetics in the School of Exercise and Nutrition Sciences. Brenton's research focuses on improving disease- and treatment-related outcomes for adults with cancer through nutrition and exercise interventions. Irene Deftereos is an Accredited Practising Dietitian and Senior Clinical Dietitian at Western Health. Irene is currently completing her PhD in nutrition and upper gastrointestinal cancer.

Broad project topic area(s)

Dietetics; Food and nutrition science;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Malnutrition in cancer patients is associated with reduced survival, poorer tolerance to treatment, increased hospital admissions and poorer quality of life. Early identification and treatment of malnutrition is important to prevent poor patient outcomes. At an international level, consensus regarding a definition and diagnostic criteria for malnutrition had previously not yet been reached. Recently the Global Leadership Initiative on Malnutrition (GLIM) published new criteria for diagnosis of malnutrition. However further validation of these criteria in clinical populations is required. The aim of this project is to determine malnutrition prevalence and association with clinical outcomes in an upper gastrointestinal cancer population using GLIM criteria. This project involves the analysis of data on 200 patients from a malnutrition point prevalence study conducted across 27 Australian health services in 2019/2020. Data collected enables the classification of patients as malnourished according to the GLIM criteria for diagnosis of malnutrition. For this project you will compare the prevalence of malnutrition using different combinations of GLIM criteria, as well as associations with clinical outcomes including surgical complications and length of stay. Outcomes of the research will provide important insight for clinicians working with cancer patients regarding identification of malnutrition, and contribute to the evidence base regarding validation of the GLIM criteria.

Skills/attributes required by the student

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 specific to this project the student will develop

Quantitative analysis (statistics); An understanding of malnutrition in clinical settings

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_16

Project title: Prehabilitation nutrition in men with prostate cancer

Primary supervisor: Dr Brenton Baguley

Phone: 92468383

Email: b.baguley@deakin.edu.au

Co-supervisor/s: Prof Judi Porter

Research mentor:

Supervisor profile

Dr Brenton Baguley is an Accredited Practising Dietitian and Lecturer in Nutrition and Dietetics in the School of Exercise and Nutrition Sciences. Brenton's research focuses on improving disease- and treatment-related outcomes for adults with cancer through nutrition and exercise interventions. Professor Judi Porter has a wide range of clinical, managerial and research experience in hospital and academic settings. She has an extensive track record in completing quantitative and qualitative studies across the spectrum of health care. She is a Fellow of Dietitians Australia, and Editor in Chief of Nutrition & Dietetics.

Broad project topic area(s)

Dietetics;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Radical prostatectomy (surgery) is the most common and effective treatment for localised prostate cancer, yet post-operative men experience severe adverse effects from radical prostatectomy, including urinary incontinence, sexual dysfunction, fatigue, reduced physical function and quality of life. Growing literature suggest that healthier body weight, reduced central adiposity, and increased physical functioning preoperative improves surgical clinical outcomes, length of stay in hospital, and the severity and longevity of side effects. Nutrition and exercise interventions prior to surgery, known as prehabilitation, offer a targeted and feasible strategy for improving prostate cancer survivorship. However, the currently nutrition practices in men with prostate cancer preoperative are unknown. The aim of this project is to explore the nutrition prehabilitation practices prior to radical prostatectomy in men diagnosed with prostate cancer. The results of this project are anticipated to provide insight for the current unmet nutrition needs in men treated with radical prostatectomy. As such, this project will vital information for future nutrition prehabilitation interventions to improve disease- and treatment-related outcomes in prostate cancer.

Skills/attributes required by the student

Knowledge and background in a nutrition 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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_17

Project title: Improving nutrition care for patients receiving autologous stem cell transplant

Primary supervisor: Prof Judi Porter

Phone: 92468625

Email: judi.porter@deakin.edu.au

Co-supervisor/s: Dr Brenton Baguley

Research mentor: Dr Amy Dennett, Allied Health Clinical Research Office, Eastern Health

Supervisor profile

Professor Judi Porter has a wide range of clinical, managerial and research experience in hospital and academic settings. She has an extensive track record in completing quantitative and qualitative studies across the spectrum of health care. She is a Fellow of Dietitians Australia, and Editor in Chief of Nutrition & Dietetics. Dr Brenton Baguley is an Accredited Practising Dietitian and Lecturer in Nutrition and Dietetics in the School of Exercise and Nutrition Sciences. Brenton's research focuses on improving disease- and treatment-related outcomes for adults with cancer through nutrition and exercise interventions.

Broad project topic area(s)

Dietetics;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

Autologous stem cell transplantation has become standard care for many haematological malignancies with a high survival rate of 94% in some malignancies at 10 years. Although survival rates are high, patients are at risk of numerous short and long-term adverse effects. Nutritional outcomes after transplant include poor appetite, mucositis and gastrointestinal failure, which may lead to malnutrition. Nutrition interventions provided before and after autologous stem cell transplant reduce weight-loss and hospital length of stay, but the clinical evidence in this oncology specialty is limited. This project provides an exciting opportunity for the honours student to commence their nutrition research career adjacent to a randomised controlled trial. The research will have two defined parts:

1. To explore the scope and magnitude for evidence in nutrition care, clinical care pathways and outcomes in patients requiring Autologous stem cell transplantation
2. A qualitative study to explore the perspectives (including barriers and facilitators) of adults who have undergone Autologous stem cell transplantation of nutrition care, including before and after their transplantation.

Skills/attributes required by the student

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 to travel to offsite for data collection and other projected related tasks;

Skills specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_18

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

Primary supervisor: Dr Shirani Gamlath

Phone: 92517267

Email: shirani.gamlath@deakin.edu.au

Co-supervisor/s: Dr Andrew Costanzo

Research mentor: Dipendra Mahato

Supervisor profile

Dr Shirani Gamlath is a lecture in Food Innovation and also a researcher in CASS Food Research Centre. Shirani's research interests are within the use of bioactive/functional ingredients in designing sustainable and healthy products. Her current research focusses on the application of fat and sugar replacers to reduce the energy density and enhancing the protein, fibre and bioactive components in processed foods. Shirani also investigates the changes in sensory perception and physicochemical properties of structure modified foods.

Dr Andrew Costanzo is a lecturer in nutrition science and a researcher at the CASS Food Research Centre at Deakin University. His area of research explores how different tastes and taste perceptions influence food intake and satiety. He has expertise in human trials and using genetic research models, such as twin studies, to learn more about how taste perception varies from person to person.

Broad project topic area(s)

Food and nutrition science; Sensory and consumer science; Public health nutrition;

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: 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 the use of clever formulation strategies to reduce added sugar but maintaining consumer satisfaction. This project will examine the strategies 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. This analysis will provide insights into whether lower sugar products are likely to be healthier overall, and also provide information to inform future reformulation strategies.

Skills/attributes required by the student

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); Interpersonal skills and ability to communicate directly with participants and other project contacts;

Skills specific to this project the student will develop

Primary data collection skills; Quantitative analysis (statistics);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_19

Project title: Adopting healthy and sustainable food practices in schools: how can it be done?

Primary supervisor: Dr Georgie Russell

Phone: 0390690218

Email: georgie.russell@deakin.edu.au

Co-supervisor/s: Dr Rebecca Lindberg

Research mentor: Jennifer Mccann

Supervisor profile

Dr Georgie Russell is a Senior Lecturer and active researcher in the area of psychosocial determinants of food choices and intakes and has published more than 40 peer reviewed journal articles in this area. Georgie teaches in the areas of healthy and sustainable food systems and behaviours, as well as in research skills. Georgie supervises Honours, Masters and PhD students in topics related to understanding the reasons underlying food choices and intakes. Dr Rebecca Lindberg is a public health nutritionist with 10 years of experience in applied and academic food security research, teaching and practice. Currently a Post-Doctoral Research Fellow at the Institute for Physical Activity and Nutrition (IPAN), and previously Lecturer in Population Nutrition, Deakin University. Authored 14+ peer-reviewed publications in predominantly Q1 and Q2 journals. Rebecca has been the unit chair of three undergraduate units, and currently supervises 2 PhD students and 2 Honours students. Jennifer Mccann is a Lecturer, Nutrition Placement Coordinator, and PhD Candidate in the Institute for Physical Activity and Nutrition (IPAN). Her PhD is examining the toddler retail food environment.

Broad project topic area(s)

Dietetics; Food and nutrition science; Sensory and consumer science; Public health nutrition; Health promotion (including policy);

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

In Australia, school canteens provide students with the chance to purchase and consume foods themselves, often without parental supervision or guidance. The school canteen environment therefore provides an opportunity to shape the experiences of children and adolescents as young food consumers. Food environments at schools can therefore facilitate the formation of habits and preferences that are either consistent or inconsistent with healthy and sustainable diets. Efforts are currently being made to modify school canteens to improve children's health as well as the environmental impact of canteen foods. This includes reducing availability and consumption of discretionary and ultra-processed foods and beverages, increasing availability and consumption of plant-based foods and reducing food and packaging waste. However, for any changes made to school canteens to be successful, they would need to be accepted by a range of stakeholders including students, school and canteen staff, and families. This project will explore the perspectives of key stakeholders (e.g. canteen staff, school students, parents, teachers) around barriers and facilitators to making changes towards healthier and more environmentally sustainable canteens in a Victorian school setting.

Skills/attributes required by the student

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); 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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_20

Project title: Understanding the development of children's eating behaviours

Primary supervisor: Dr Georgie Russell

Phone: 0390690218

Email: georgie.russell@deakin.edu.au

Co-supervisor/s: Dr Elena Jansen (external)

Research mentor: Dr Alissa Burnett

Supervisor profile

Dr Georgie Russell is a Senior Lecturer and active researcher in the area of psychosocial determinants of food choices and intakes and has published more than 40 peer reviewed journal articles in this area. Georgie teaches in the areas of healthy and sustainable food systems and behaviours, as well as in research skills. Georgie supervises Honours, Masters and PhD students in topics related to understanding the reasons underlying food choices and intakes. Dr Elena Jansen is a postdoctoral fellow at Johns Hopkins University (USA), and holds an adjunct position with QUT. She has an interest in the measurement of feeding practices and children's eating. She developed the Feeding Practices and Structure Questionnaire to measure use of non-responsive and structure related practices among parents of young children and is now conducting research aimed at understanding eating, weight and food choice in children and adolescents. Dr Alissa Burnett is a casual academic at Deakin University. Her PhD research examined the the role of parent and child interactions and characteristics in children's diets and health. She has a strong interest in statistical analysis.

Broad project topic area(s)

Dietetics; Food and nutrition science; Sensory and consumer science; Public health nutrition; Health promotion (including policy);

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Either Burwood or Waurm Ponds

Project description

We have a number of existing data sets examining parent feeding, the development of children's eating behaviours and children's weight outcomes. This secondary data analysis project would draw upon these data sets to examine a particular aspect of children's eating and weight of interest to the student.

Possible topics include understanding the development of emotional eating in young children; parents' beliefs and ideas about children's eating and weight and whether this is related to use of particular feeding practices; or the development and disruption of the capacity to respond to internal hunger cues in infants and children.

Skills/attributes required by the student

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 specific to this project the student will develop

Quantitative analysis (statistics);

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_21

Project title: Young children's diets

Primary supervisor: Dr Alison Spence

Phone: 9244 5481

Email: a.spence@deakin.edu.au

Co-supervisor/s: Dr Jazzmin Zheng, Dr Katie Lacy and/or Dr Kristy Bolton

Research mentor: Konsita Kuswara

Supervisor profile

Dr Alison Spence is a Senior Lecturer in Population Nutrition, Community Dietetics Co-ordinator, and Advanced Accredited Practising Dietitian (APD). Her research focusses on promoting nutrition and health for young children, including understanding and improving young children's diet quality, parental feeding practices, and family meals. Dr Jazzmin Zheng is an NHMRC Research Fellow and nutrition epidemiologist with research interests in the role of dietary, environmental and behavioural factors in the development of obesity and chronic diseases in childhood and adulthood. Dr Katie Lacy is a Senior Lecturer in Nutritional Science, with a research focus on preventing child and adolescent obesity through good nutrition. She is committed to promoting evidence-based strategies for moderating energy intake to children, adolescents and their parents. Dr Kristy Bolton is a Senior Lecturer in Nutrition Sciences. Her research focuses on obesity prevention 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.

Broad project topic area(s): Dietetics; Public health nutrition; Health promotion (including policy);

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Young children's dietary intakes have an important impact on their current and future health. Describing and understanding young children's diets, and influences on these, is important to inform public health strategies. Project topics could include (or other related interests can be discussed): Child diets & influences: Secondary analysis of data from the InFANT Program (from 500 children aged 9mo-5y) - the only Australian study with multiple 24hr diet recall data for children <2y, complemented by survey data on parenting and home food environments. The research question can be informed by student interest and could include: Investigating associations between parent feeding practices, family meals and child dietary intakes over time (9mo - 5y of age); -How do macronutrient intakes during infancy influence body weight in early childhood?; -Tracking of energy density across early childhood and by socioeconomic position.; Environmental sustainability & child diets: Increasingly the nexus between nutrition and environmental sustainability of populations' diets is being recognised as a vital factor in public health. Either secondary data analysis or data collection could: Examine how children's dietary intakes align with sustainable eating recommendations, with particular focus on where nutritional and sustainability benefits align (e.g. legumes, pulses, whole grains, nuts, processed & packaged foods, food wastage); Explore parent perspectives on sustainable eating principles.

Skills/attributes required by the student

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 specific to this project the student will develop

Quantitative analysis (statistics); In-depth knowledge of early childhood nutrition, plus skills in analysing, interpreting and presenting dietary data in a way which informs health professionals as well as researchers.

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_22

Project title: Prevalence and trends of dietary risk factors associated with non-communicable diseases in Australia

Primary supervisor: Dr Shariful Islam

Phone: +61 3 9246 8393

Email: shariful.islam@deakin.edu.au

Co-supervisor/s: Dr Riaz Uddin

Research mentor:

Supervisor profile

Shariful Islam (MBBS, MPH, PhD, FESC) is a National Heart Foundation Senior Research Fellow at the Institute for Physical Activity and Nutrition (IPAN). He is a Physician Scientist with a PhD in International Health and two post-doctorates in Digital Health. Shariful's research focuses on Global Health and using innovative information technologies for improving chronic health conditions. He leads the Global Burden of Disease Australia project at IPAN. He has experience in design and conduct of large-scale epidemiological studies, secondary data analysis, meta-analysis, clinical trials and implementation research. He has published 145 articles in peer-reviewed journals including several studies with his students. Shariful has supervised to completion 7 Doctor of Medicine and 12 Masters students and currently supervises 3 PhD students at IPAN. Dr Riaz Uddin is an Alfred Deakin Postdoctoral Research Fellow at IPAN. He has expertise in a broad range of quantitative data analysis techniques, and statistical modelling and computing. Riaz's research focuses on global public health, including an analysis of the Global Burden of Disease data.

Broad project topic area(s)

Dietetics; Food and nutrition science; Public health nutrition; Health promotion (including policy);

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

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 are 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 the 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 extracted for Australia. Sex and age-specific prevalence of these risk factors over time will be estimated. Contribution of these risk factors – measured as the number of deaths, disability-adjusted life-years, years of life lost, and years lived with a disability – to major NCDs will also be estimated. The project will provide students with the opportunity to understand the burden of dietary risk factors associated with NCDs, analyse data and write reports.

Skills/attributes required by the student

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 specific to this project the student will develop

Quantitative analysis (statistics); Data extraction

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_23

Project title: Do infant feeding practices differ in Vietnamese-born vs. Australian-born mothers in Australia?

Primary supervisor: Dr Kristy Bolton

Phone: 52 278 277

Email: kristy.bolton@deakin.edu.au

Co-supervisor/s: Dr Peter Kremer

Research mentor:

Supervisor profile

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 obesity 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. Dr Peter Kremer is a Senior Lecturer in Sport and Exercise Behaviour with the School of Exercise and Nutrition Sciences based at the Geelong Waurn Ponds Campus. He has extensive research experience, broad knowledge and skills in psychology and public health. He also has expert knowledge of both quantitative and qualitative research methods.

Broad project topic area(s)

Dietetics; Public health nutrition; Health promotion (including policy);

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

Australia has a large immigrant population (29%, ABS 2019) . The prevalence of overweight and obesity in Australian children is high (24.9% of children aged 2-17 years, ABS 2018), however little is known about prevalence or predictors in ethnic subgroups within Australia. A number of factors have been associated with rapid weight gain in infancy and later obesity such as early feeding practices and maternal factors. Data on the rates of breastfeeding, formula feeding and timing of introducing solids to infants with various ethnic backgrounds living in Australia is scarce or outdated. This project will examine infant feeding practices in infants of mothers from a key immigrant ethnic group (Vietnamese) compared to infants of mothers born in Australia. This project will investigate potential obesity promoting behaviours (e.g. early introduction of solids, high use of infant formula) in infants of Vietnamese-born mothers to identify opportunities to improve early infant nutrition and establish health promoting behaviours early in life. This project will involve secondary analysis using data from the The Australian National Infant Feeding Survey (2010-2011), a large scale, national survey of infant feeding practices and behaviours.

Skills/attributes required by the student

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 specific to this project the student will develop

Quantitative analysis (statistics); Knowledge regarding nutrition in early infancy, skills in data management, analysis and interpretation

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_24

Project title: Are children's knowledge, attitudes and behaviours associated with urinary sodium levels?

Primary supervisor: Dr Kristy Bolton

Phone: 52 278 277

Email: kristy.bolton@deakin.edu.au

Co-supervisor/s: Dr Carley Grimes, Dr Miaobing (Jazzmin) Zheng

Research mentor:

Supervisor profile

Dr Kristy Bolton is a Senior Lecturer in Nutrition Sciences and a researcher within the Institute for Physical Activity and Nutrition (IPAN). Kristy's research program has focussed on understanding the correlates of overweight and obesity in infants, children and adolescents. Using this knowledge 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. Dr Grimes is a Senior Lecturer in Population Nutrition, an Accredited Practising Dietitian and a researcher the Institute for Physical Activity and Nutrition (IPAN). Carley is particularly interested in monitoring and improving children's diets to ensure they have the best start at life. Much of her work focuses on the assessment of dietary salt intake within the population and how this relates to cardiovascular health. Dr Jazzmin Zheng is an NHMRC Research Fellow and nutrition epidemiologist with research interests in the role of dietary, environmental and behavioural factors in the development of obesity and chronic diseases in childhood and adulthood.

Broad project topic area(s)

Dietetics; Public health nutrition; Health promotion (including policy);

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Either Burwood or Waurin Ponds

Project description

Australian adults and children currently eat too much salt (sodium). High sodium levels can increase the risk of high blood pressure and other chronic disease like cardiovascular disease. Knowledge, attitudes and behaviours (KABs) on salt, along with 24-hr urine was collected from 170 children in 2018-2019 as part of the follow up study Salt and Other Nutrients in Children (SONIC). This project aims to investigate association between KABs and sodium content in urine in these children. This project involves secondary data analysis of already existing data.

Skills/attributes required by the student

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 specific to this project the student will develop

Quantitative analysis (statistics); Skills in data management, analysis and interpretation.

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_25

Project title: Tertiary student perceptions and behaviours related to healthy and sustainable food systems

Primary supervisor: Kristy Bolton

Phone: 52 278 277

Email: kristy.bolton@deakin.edu.au

Co-supervisor/s: Georgie Russell

Research mentor:

Supervisor profile

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 obesity prevention. She has designed, implemented and evaluated many complex obesity prevention interventions; and is interested in actions to address overnutrition, undernutrition and climate change; and ultimately planetary health. Kristy also teaches in the areas of healthy and sustainable food systems and population nutrition. Dr Georgie Russell, is a lecturer in Food Innovation based at the Burwood campus. She is an active researcher in the area of psychosocial and biological determinants of food choices and intakes and has published more than 40 peer reviewed journal articles in this area. Georgie teaches in the areas of healthy and sustainable food systems as well as in food innovation. Georgie supervises Honours, Masters and PhD students in topics related to food behaviours.

Broad project topic area(s)

Public health nutrition; Health promotion (including policy);

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Either Burwood or Waurn Ponds

Project description

The current food system is complex and threatens both environmental and public health. Drs Russell and Bolton and keen to supervise capable and motivated students in topics related to healthy and sustainable food systems. This project may examine food beliefs, behaviours, shopping habits and attitudes towards policies related to healthy and sustainably eating in tertiary students. Understanding individual food behaviours which influence the food system is important to inform future interventions and support the promotion of both healthy and sustainable food choices. Please get in touch to discuss possible projects.

Skills/attributes required by the student

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 specific to this project the student will develop

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

SCHOOL OF EXERCISE AND NUTRITION SCIENCES

Project number: FN_29

Project title: Prevalence of food insecurity among pregnant women at the Women's Hospital Melbourne

Primary supervisor: Dr Paige van der Pligt

Phone:

Email: p.vanderpligt@deakin.edu.au

Co-supervisor/s: Ms Julia Zinga

Research mentor:

Supervisor profile

Dr van der Pligt is Dietitian and has experience in both qualitative and quantitative research methodology. She is particularly interested in assessing nutrition and dietary intakes in pregnant women and immigrant women. Dr van der Pligt is involved with conducting research with Ms Zinga at the Women's Hospital, Melbourne. Ms Julia Zinga is a Dietitian at the Royal Women's Hospital where she provides dietetic support to pregnant women, many of whom are from vulnerable communities. She is currently conducting qualitative research in the area of food insecurity during pregnancy, and is interested in developing more understanding of this public health concern within the antenatal care setting.

Broad project topic area(s)

Public health nutrition; Food security, Women's health

Course code: H418 Bachelor of Nutrition Science (Honours)

Project is based at: Melbourne Burwood campus

Project description

This project builds on existing research conducted by Ms Zinga at the The Women's Hospital, Melbourne and will determine a snapshot of the prevalence of food insecurity among pregnant women giving birth at The Women's Hospital. Optimal nutrition during pregnancy is essential for the health of the mother and the baby and food insecurity (poor access, affordability, sub-optimal intake of nutritious foods) can adversely impact pregnancy outcomes. This project will use quantitative survey methods and will provide essential information regarding identification of pregnant women who are food insecure. Results will inform future hospital antenatal service provision.

Skills/attributes required by the student

Knowledge and background in a nutrition related field; 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; Previous work in a hospital environment would be useful

Skills specific to this project the student will develop

Primary data collection skills; Quantitative analysis (statistics);