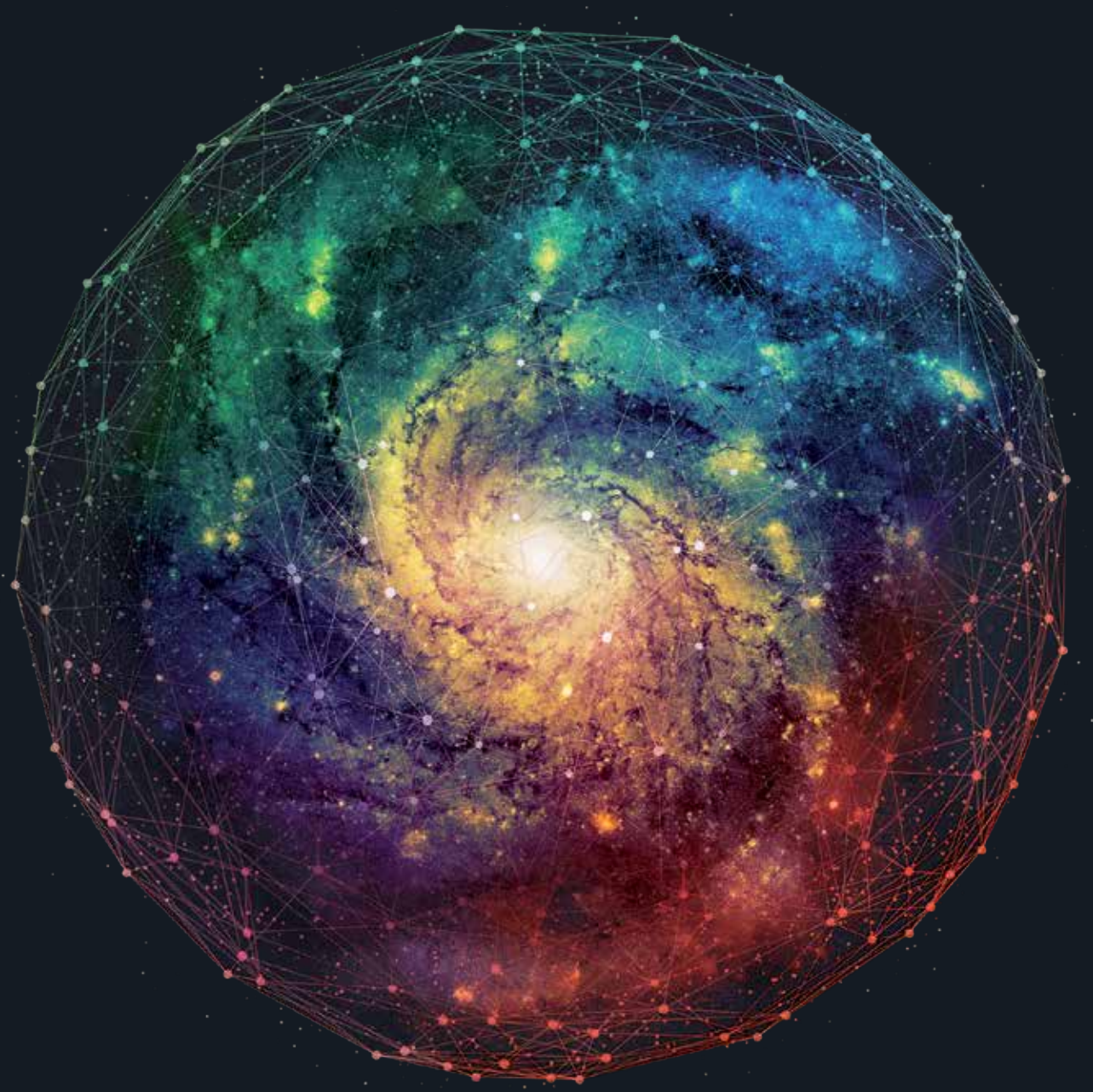
2020 RESEARCH AREAS AND SUPERVISORS

MEDICAL AND HEALTH SCIENCES

AUSTRALIA ECU EDITH COWAN UNIVERSITY



WORLD READY

2020

THERE IS WHERE YOU ARE RIGHT NOW, AND THERE IS WHERE YOU WANT TO GET TO. IN BETWEEN YOU NEED A BRIDGE. ECU IS THAT BRIDGE BETWEEN YOUR WORLD, AND THE WHOLE WORLD.

BECOME WORLD READY AT ECU.

CONTENTS

ECU is committed to reconciliation and recognises and respects the significance of Aboriginal and Torres Strait Islander peoples' communities, cultures and histories. ECU acknowledges and respects the Aboriginal and Torres Strait Islander peoples, as the traditional custodians of the land. ECU acknowledges and respects its continuing association with Nyoongar people, the traditional custodians of the land upon which its campuses stand.

MESSAGE FROM THE ASSOCIATE DEAN OF RESEARCH

It is my privilege to introduce you to the research conducted within the School of Medical and Health Sciences. I thank you for taking the time to learn about our school.

The School of Medical and Health Sciences has a strong reputation for research excellence and leads research at Edith Cowan University. We have over 100 researchers across a wide range of disciplines and together we have brought in over $40 million in funding to ECU, published over 1000 peer reviewed papers, and completed 100 postgraduate students over the last 5 years.

We have strong cross-disciplinary alliances and collaborate extensively with relevant domestic and international industry and government agencies. Such partnerships ensure that our research answers real-world questions and has direct impact on practices which improve community health outcomes. A particular focus of our school is to promote engaged research leading to knowledge translation, application and impact.

Our specific areas of research priority include exercise, nutrition and lifestyle interventions, biological approaches to personalised medicine, neuroscience and neurorehabilitation, cancer and other chronic diseases, safety and quality in health care, human movement and performance, human-environment interaction, and digital citizenship and human behaviour.

I hope you enjoy your journey through the research booklet from the School of Medical and Health Sciences. If you have any questions please do not hesitate to contact me.

ASSOCIATE PROFESSOR CHRIS ABBISS
ASSOCIATE DEAN RESEARCH
SCHOOL OF MEDICAL & HEALTH SCIENCES

ECU RESEARCH THEMES & PRIORITY AREAS

Research at ECU is focused on 4 main research themes:

- Health: Prevention, detection and management of disease and injury
- Society and Culture: Impacting and supporting social change through ensuring diversity, creativity, cultural identity, education, personal and organisational success and social justice
- Natural and Built Environments: Understanding, harnessing, building and protecting environments for sustaining people, place and planet
- Securing Digital Futures: Enabling a safe, secure, productive and enterprising digital environment

ECU's research is characterised by its fundamental commitment to the pathway from basic research to translation to innovative implementation (including practice, service delivery, and industry adoption).

ECU's commitment to this research pathway is reflected in its cross-cutting approach to research across each of its research themes and priority areas. These cross-cutting approaches are:

- A strong research–practice interface, including research-led practice and practice-led research, that involves and engages the professions, service-delivery agencies and other end- users (patients, clients, consumers, industry).
- Strengthening the evidence base by responding to the needs of high-end practitioners, policy-makers, guideline developers, activists, companies and governments, thereby ensuring they have access to expert advice and robust data for decision-making.
- Assessment, evaluation, advocacy, policy-making throughout all stages of planning, measurement and monitoring as well as the early stages of innovation.
- Indigeneity and diversity to reach a fuller understanding of aboriginal knowledge, practice, and belief and the diversity of the cultures among which we live and research.

RESEARCH AREAS

NEUROSCIENCE

The School of Medical and Health Sciences at ECU leads research in the areas of neuroscience. This includes specialist research in:

- Alzheimer's Disease;
- Huntington's Disease;
- Spinal Cord Injury;
- Acquired Brain Injury and Stroke;
- Neurorehabilitation; and
- Autism.

OCCUPATIONAL AND ENVIRONMENTAL HEALTH

Our researchers collaborate in biomarker research and the integration of health surveillance and exposure data, and develop models for effective management systems to analyse and evaluate performance.

Environmental health research themes are centred on mosquito vector management; climate change and heat exposures of outdoor workers in developing countries, and heat wave impacts and policy related to older people; bush fires and heavy metal contamination; food safety; and water mist system and bacteriological risks.

CANCER AND ONCOLOGY

Treating and alleviating the symptoms of cancer is a focal research area within the School of Medical and Health Sciences at ECU.

Our state-of-the-art molecular biology laboratories and our close collaborations with clinicians and pathologists across Australia allows our melanoma research team to design novel methods for early identification and monitoring of treatment responsiveness of melanoma patients. Blood biomarkers are also being developed for the early identification of other cancers including breast, ovarian, lung, brain and prostate cancers.

Additionally, the School houses an innovative, multidisciplinary and productive research team dedicated to investigating cancer and chronic disease management. More specifically, the research studies seek to understand the emerging and significant role of exercise medicine in the oncology setting by incorporating a systematic program of research across the cancer survivorship continuum including pre-treatment, active treatment and recovery; living after recovery; advanced cancer and end of life.

SPORTS INJURY PREVENTION/ SPORTS INJURY EPIDEMIOLOGY

The Australian Centre for Research into Injury in Sport and its Prevention (ACRISP) is one of only 11 worldwide to be selected by the International Olympic Committee (IOC) to study the prevention and treatment of sports injuries and illness. Research in sports injury prevention is conducted across three areas of safe sport and performance. Current research projects look at understanding and quantifying the burden of injury, building healthy athletes and reducing risks, and impacting policy and practice.

EXERCISE AND SPORTS SCIENCE

Researchers conduct high-impact scientific research and provide postgraduates with training and supervision in exercise and sports science with the aim of improving our understanding of human movement. Major areas of research specialisation include:

- Strength and conditioning;
- Physiology of Sports Performance;
- Psychology of Sports and Exercise; and
- Sports Biomechanics.

CLINICAL SCIENCE

Clinical Sciences in the School of Medical and Health Sciences is proudly conducted with community partners and healthcare service providers such as Sir Charles Gairdner Hospital, Joondalup Health Campus and the ECU Health Centre at Wanneroo. ECU has world-class research facilities including the ECU Simulation Centre to aid training and research.

POPULATION HEALTH

The School of Medical and Health Sciences has leading researchers in the area of Population Health, specialising in areas such as:

- Human genetics;
- Microbiology;
- Fertility;
- Health promotion; and
- Addiction studies.

EXERCISE MEDICINE RESEARCH INSTITUTE (EMRI)

Established in 2003, the Exercise Medicine Research Institute (EMRI) houses an innovative, multidisciplinary and productive research team in exercise science and behavioural medicine that is dedicated to investigating the extent to which exercise can be employed in cancer management to materially improve patient outcomes.

EMRI has extensive national and international linkages, and continues to build collaboration between researchers, clinicians, industry and government to optimise health and improve the quality of life and survival for people with cancer. The research team's unique convergence of clinical patient care, exercise medicine and innovation in health interventions underpins the Institute's achievements in cancer research. The body of EMRI's research has demonstrated the efficacy and safety of implementing exercise in the oncology setting, with substantial benefits translated to patients from early-stage, localised disease to patients with advanced metastatic cancer.

EMRI's research program is supported by solid and extensive collaboration with specialists who have distinguished international reputations in the following disciplines: clinical exercise physiology, sports medicine, exercise oncology, medical oncology, radiation oncology, gerontology, urology, psycho-oncology, epidemiology and injury prevention.

EMRI has obtained continuous nationally competitive research grant support since its establishment in 2003. It has attracted major national and international competitive grants as follows: NHMRC, Prostate Cancer Foundation of Australia, Cancer Australia, Cancer Council Western Australia and Movember Foundation.

The Institute's research has been cited by leading international organisations as follows:

- American Cancer Society Nutrition and Physical Activity Guidelines for Cancer Survivors
- American Society of Clinical Oncology (ASCO) Position Statement on Obesity and Cancer
- ASCO Prostate Cancer Survivorship Clinical Care Guideline
- European Society for Medical Oncology Clinical Practice Guidelines for diagnosis, treatment and follow-up
- Guidelines on Prostate Cancer by the European Association of Urology

EMRI provides a steady stream of patient cohorts through the Vario Health Clinic and the required medical/health and research personnel necessary to support the research program. Over the past 10 years, the Institute has recorded more than 250,000 patient contacts through research and clinical practice. In addition, the Institute houses the ECU Survey Research Centre (SRC) which undertakes predominantly health-related research survey work for the University as well as external organisations.

EMRI researchers have co-authored guidelines and consensus statements in exercise medicine / oncology and prostate cancer survivorship for the following state, national and international organisations:

- Cancer Council WA Guidelines for Implementing Exercise Programs for Cancer Survivors (2007)
- Exercise and Sports Science Australia (ESSA) Position Statement on Exercise as Medicine for Cancer (2009, 2019)
- American College of Sports Medicine (ACSM) Consensus Statement on Exercise Guidelines for Cancer Survivors (2010, 2019)
- ESSA Position Statement on Exercise Prescription for the Prevention and Management of Osteoporosis (2017)
- Position Statement on Screening for Distress and Psychosocial Care for Men with Prostate Cancer jointly developed by Prostate Cancer Foundation of Australia and the NHMRC-funded CRE in Prostate Cancer Survivorship (2019)

Translational program developments have included the Life Now Exercise Program in Western Australia, the ManPlan nationally and TrueNTH internationally.

For more information, visit: www.exercisemedicine.org.au

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AUSTRALIAN CENTRE FOR RESEARCH INTO INJURY IN SPORT AND ITS PREVENTION

The Australian Centre for Research into Injury in Sport and its Prevention (ACRISP) is nationally and internationally renowned for its demonstrable impacts on safer sports behaviours and environments. Our research program generates new knowledge, translates research into evidence-based outcomes and improves clinical practice. ACRISP research seeks to ensure more people can enjoy sustained participation and performance in their chosen sport or fitness activities because it will be safer for them to do so.

The ACRISP team is recognised by the International Olympic Committee (IOC), as one of its international centres for research excellence. This acknowledgement reflects our team's expertise and our focus on research that has a real impact on injury prevention. The ACRISP research team draws on strengths and expertise from across several of ECU's schools and research groups including the School of Medical and Health Sciences (exercise medicine; sports sciences; public, occupational and environmental health), School of Engineering (impact testing, biomechanics), Western Australian Academy of Performing Arts (dance; dance education; 3D motion capture) and the School of Business and Law (sport management; sport marketing; tourism). We work with, and receive funding from, a number of government and industry partners, as well as peak sports bodies.

The research undertaken by ACRISP supports all forms of sport, exercise, fitness and physical activity being undertaken with minimal risk of injury, ensuring more people have the opportunity for healthy lifestyles. Our scope of inquiry includes all those involved in sport, from the participants themselves (professional, amateur and recreational) through to those who support participants (medical practitioners, clubs and sporting facilities, peak sports bodies, government agencies).

Our research is conducted across three areas of safe sport and performance. Some examples of our project areas are:

- Understanding and quantifying the burden of injury
  - Methodological developments to improve injury data collection and systems
  - Surveillance to document the occurrence of injuries and identify opportunities for their reduction
  - Maximising use of administrative data to understand injury burden
- Building healthy athletes and reducing risks
  - The design and implementation of exercise training programs to prevent injury
  - Biomechanical studies to optimise movement
  - Physiological investigations to maintain/ improve capacity and function
  - Impact testing of equipment to inform safety standards
- Impacting policy and practice
  - Working with government, sport and health agencies to target identified injury prevention needs and to evaluate prevention programs
  - Addressing the challenge of providing sport in a safe environment
  - Contributing to evidence and tailoring this for dissemination to, and through, various stakeholders

For more information, visit: www.acrisp.org.au

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CENTRE OF EXCELLENCE FOR ALZHEIMER'S DISEASE RESEARCH AND CARE

The Centre of Excellence for Alzheimer's Disease Research and Care is unique in that it brings together leading researchers in different disciplines - from prominent clinical researchers to leading exercise physiologists and brain imaging experts. The Centre has also established research collaboration with the Australian Neuromuscular Research Institute (ANRI) and Sir Charles Gairdner Hospital (SCGH).

The Centre's mission is to lower the burden of Alzheimer's disease on the community and to enhance the quality of life of people affected by this devastating disease and our Vision is to see a world without Alzheimer's disease.

The aim of the Centre of Excellence for Alzheimer's Disease Research and Care is to:

- contribute to the community by developing effective strategies for the prevention of Alzheimer's disease;
- develop tests for the early diagnosis of the disease;
- develop effective treatments that delay the onset of the disease and reduce its progression; and
- make a substantial difference in the care, well-being and quality of life for people with Alzheimer's disease.

The Centre intends to achieve this objective through:

- Foundational research – aimed at achieving a molecular/cellular-level understanding of Alzheimer's disease that underpins the more applied 'translational' research in the centre, while having the potential for the discovery of therapeutic drugs.
- Translational research – aimed at clinical outcomes – building on the outputs of foundational research and producing outputs that, when translated to practice, will improve population health and health policy.
- Enabling (applied) research – aimed at facilitating translation of research into practice.

For more information, visit:
www.ecu.edu.au/schools/medical-and-health-sciences/our-research/centre-of-excellence-for-alzheimers-disease-research-and-care

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CENTRE FOR EXERCISE AND SPORTS SCIENCE RESEARCH (CESSR)

Researchers in the Centre for Exercise and Sports Science Research (CESSR) conduct high-impact scientific research and provide postgraduates with training and supervision in the area of exercise and sports science with the aim of improving our understanding of human movement. We use a multi-mode approach to studying human athletic performance which uses techniques in the fields of physiology, biomechanics, psychology, motor control and learning, neurophysiology, biochemistry, medical imaging, and others, to improve this understanding. We specifically focus on translating scientific advances into the real-world setting.

The Centre for Exercise and Sports Science Research (CESSR) was established in 2007. The Centre aims to:

- foster high quality research in exercise and sports science;
- promote and enhance the teaching of exercise and sports science at ECU;
- attract and support honours and postgraduate research students;
- establish collaborative links with other research groups and institutes;
- attract research funding from competitive grant agencies and industry; and
- contribute to exercise and sports science needs at local, national and international levels.

To meet these aims, we conduct research that is relevant to the broader community and of immediate practical impact. We positively engage with other researchers as well as schools, government organisations, health professionals, and community and elite-level sports teams.

CESSR members consist of full-time academic staff and research students of the Exercise and Sports Science discipline in the School of Medical and Health Sciences, and its adjunct members (many of whom were former full-time academic staff members). The Centre welcomes many international visitors for research and research presentation purposes, and we are proud of our strong national and international outlook. In order to drive our research agenda we run a monthly research presentation series, with additional 'special presentations' by visitors.

We encourage enquiries from students and researchers wishing to pursue research activities in our research group. We also welcome enquiries from industry seeking solutions or collaborations in relevant research areas through Research and Development

For more information, visit:
www.ecu.edu.au/schools/ medical-and-health-sciences/our-research/centre-for- exercise-and-sports-science-research-cessr

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SYSTEMS AND INTERVENTION RESEARCH CENTRE FOR HEALTH (SIRCH)

The Systems and Intervention Research Centre for Health (SIRCH) brings together scientists and clinicians to promote better health, improve early disease detection and enhance intervention using appropriate workforce education and systems. SIRCH develops and tests approaches that aim to improve equity, access, safety and quality in healthcare. SIRCH is a trans-disciplinary research group committed to inter-professional learning.

The objectives of the Centre are:

- to facilitate the translation of research and policy to enhance healthcare practice;
- to increase pure and applied research outputs from the diverse range of researchers in the Centre;
- to improve the quality and sustainability of the workforce;
- and apply innovative education initiatives.

The Centre's activities cover four broad domains;

- Personalised Health including health promotion, health intervention, environmental health, global health and public health genomics;
- Applied Health and Safety including safety and quality in health, communication in healthcare and testing new models of service delivery;
- Aboriginal and Community Health including working with community on developing and evaluating innovative models of care, and challenging attitudes of healthcare providers;
- SIRCH Teaching and Learning which examines all facets of teaching and learning related to the research domains.

The Centre focuses on the following research areas:

Clinical Science

- Nutrition and Dietetics Research
- Occupational Therapy Research
- Emergency Services Research

Population Health

- Glycomics and Suboptimal Health Research
- Occupational Health Research
- Environmental Health Research
- Clostridium Difficile
- Grandparent Research
- Health Promotion.

For more information, visit:
www.ecu.edu.au/schools/medical-and-health-sciences/our-research/systems-and-intervention-research-centre-for-health

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OCCUPATIONAL HEALTH RESEARCH GROUP

Being located in the School of Medical and Health Sciences provides an opportunity for the group of certified occupational hygienists to collaborate in areas of biomarker research and the integration of health surveillance and exposure data.

Within the Occupational Health Research Group there is a specialism concerning the prevention of workplace injuries, incidents and exposure. This research group aims to:

- Develop innovative processes to assist organisations of all sizes and types to manage and evaluate injury risk to an acceptable level
- Assist organisations to develop injury prevention strategies
- Develop research protocols for the accurate determination of worker exposure profiles
- Integrate environmental (exposure) and medical surveillance data
- Develop laboratory based protocols to validate Australian occupational exposure standards.

ENVIRONMENTAL HEALTH RESEARCH GROUP

The environmental health team have established close relationships with the Western Australian Department of Health, Medical Entomology division and collaborate with local and state government in various mosquito related projects. ECU currently host the Local Health Authorities Analytical Committee (LHAAC) and are involved in a number of projects related to food safety.

The environmental health research themes are centred on:

- Mosquito vector management
- Climate change and heat exposures of outdoor workers in developing countries and heat wave impacts and policy related to older people
- Bush fires and heavy metal contamination
- Food safety
- Water misting system and bacteriological risks

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NUTRITION AND DIETETICS RESEARCH GROUP

The Nutrition & Dietetics Research Team at ECU translate nutritional research into practice with a view to improve health outcomes for all Australians. Food and nutrition as medicine can optimise health, reduce the risk of chronic disease and improve development and performance.

The team has several research pillars:

- Nutrition Education and Food Literacy;
- Gut Health;
- Chronic Disease and Clinical Nutrition;
- Food Security;
- Public Health research;
- Life Course Nutrition.

The team has a number of ongoing research projects, including:

SNACPlus: Online Program to Build Knowledge and confidence to Improves Healthy Eating Environments in the Childcare Sector

The SNACPlus research group has developed an engaging and relevant online curriculum to provide childcare staff with professional development and resources to teach healthy eating to two to five year old children and build a healthy food environment in their centre. Resources are accessible by parents/ carers and are available on the SNACPlus website free of charge.

Refresh.ED: An Online food and nutrition teaching resource for WA school children

Nutrition is a single area in a crowded health curriculum taught in Australian schools and teachers may not have the necessary skill set or time to learn contemporary nutrition science to teach to students. As a response to this challenge, ECU has developed Refresh.ED, which is an online nutrition teaching resource for school children in Western Australia.

Examining the long term health impacts of the Paeolithic diet and the effects on gut health

This project is aimed at determining how total long- term dietary patterns, inclusive and exclusive of grains and legumes, contribute to changes in gut health that impact the risk of non-communicable chronic diseases.

Chronic Disease and Clinical Nutrition

Plant based diets have a positive effect on health, yet Australians do not eat enough vegetables. A series of studies are examining the components in plants and the influence they have on vascular health, gestational diabetes, ulcerative colitis, gut and mental health. These studies also examine educational strategies to support behavioural change to healthier lifestyles.

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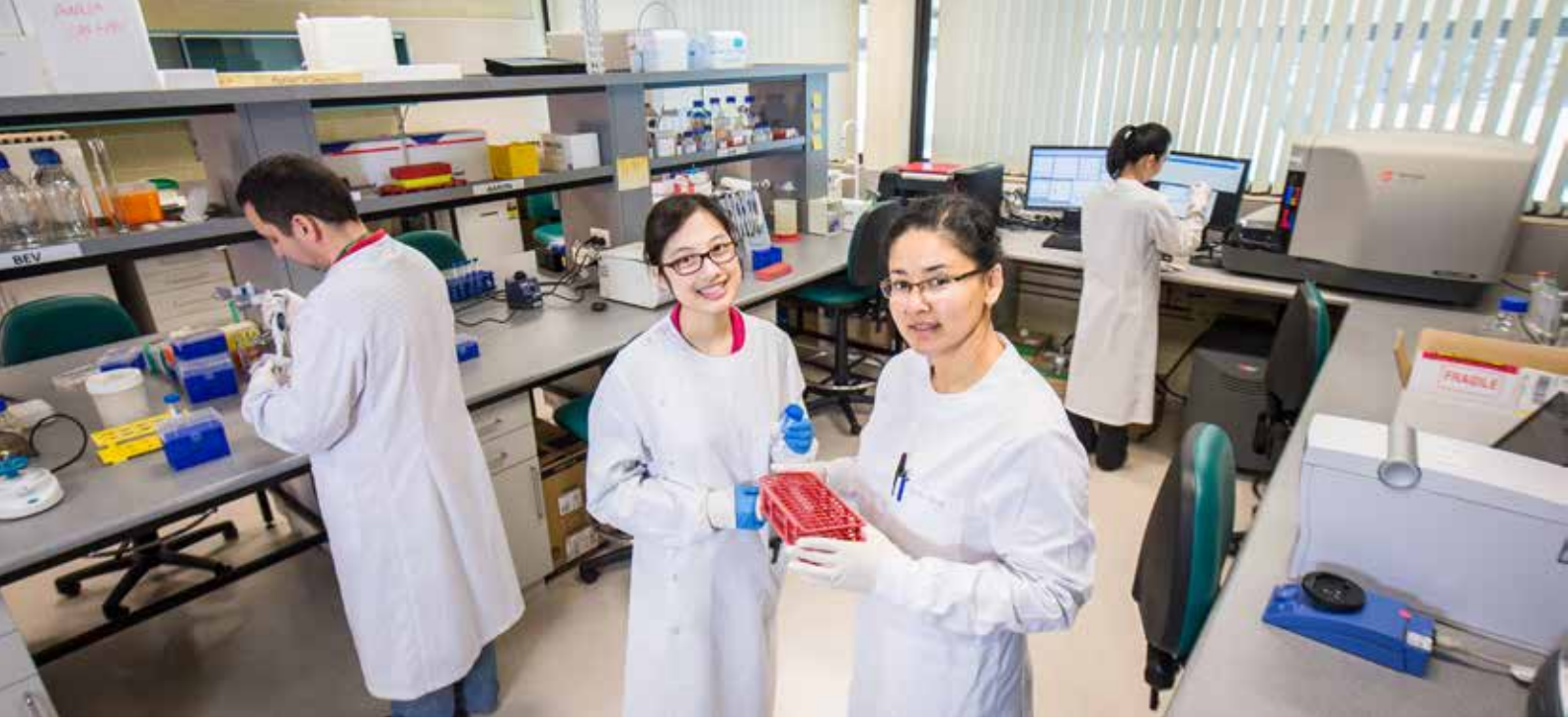

ECU MELANOMA RESEARCH GROUP

The ECU Melanoma Research Group's primary focus is to develop blood tests to detect circulating melanoma cells, tumour DNA or other cancer biomarkers in the patient's blood early in the disease process. This will not only allow clinicians to monitor patients for disease status and recommend an appropriate course of treatment at an early stage, but also inform them earlier of drug efficacy or drug resistance, allowing a better patient prognosis.

Melanoma is one of Australia's most common cancers with over 13,000 new diagnoses per year. In one out of ten patients, the melanoma diagnosis comes too late,

as the melanoma has already spread throughout the body, drastically diminishing the chances of survival. With more than 1,700 Australians dying every year from melanoma -one every 5 hours-, we urgently require a better understanding of how the melanoma spreads and why certain tumours respond to current treatment while others are resistant to treatment.

Current projects include:

- Blood based biomarkers: Assessing melanoma through a blood test
- Circulating Melanoma Tumour Cells
- Uveal Melanoma: Bypassing an invasive eye biopsy through development of a novel blood test

For more information, visit: www.ecu.edu.au/schools/medical-and-health-sciences/our-research/ecu-melanoma-research-group

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HUNTINGTON'S DISEASE RESEARCH GROUP

The Huntington's Disease Research team is a multidisciplinary team whose research is centred around investigating novel environmental enrichment treatment modalities and the development of prognostic and diagnostic assessments within the Huntington's disease (HD) population.

For more information, visit: www.ecu.edu.au/schools/medical-and-health-sciences/our-research/huntington- disease-research-group

The aims of the group are:

- To investigate the therapeutic potential of environmental enrichment treatment modalities in impacting HD progression via clinical, functional, imaging, physiological and biochemical biomarkers;
- Assess the therapeutic effectiveness of environmental enrichment in improving the quality of life for HD individuals; and
- Design simple, inexpensive, HD-sensitive biomarkers capable of assessing HD symptomatic progression.

COMMUNICATION DISORDERS RESEARCH GROUP

Communication Disorders Research at ECU focuses on clinically relevant and translatable investigations related to communication disorders across the lifespan.

Communication is central to our everyday activities. Talking, texting, emailing, reading, listening and understanding are all vital parts of communicating in the 21st century, and they all fulfil different functions – to convince, to argue, to explain, to collaborate, to request, to complain, to defend, to organise, to socialise, as well as to maintain our relationships with family, friends, and work colleagues. When communication ability is restricted through either developmental factors or acquired after a brain injury such as a stroke, an individual's skills, relationships and identity can all be affected.

The Communication Disorders Research Group'sprimary areas of research are early aphasia intervention following stroke and Aboriginal Australians' experiences of brain impairment and rehabilitation after stroke and traumatic brain injury, with significant research also being undertaken in the areas of autism, early speech and language development, fluency disorders, and teaching and learning strategies within allied health curricula.

The research team is a group of active researchers with national and international reputations in the field of communication disorders related to brain injury. The group leads projects supported through the National Health & Medical Research Council (NHMRC) and other multiple funding bodies.

Strong national and international collaborations underpin all endeavours. Our research networks are academic, government-related, and clinical in nature, with world class collaborators. We are ensuring that we address current clinically relevant issues, with knowledge translation as a key focus. We achieve this within current policy contexts and maintain our research at the forefront of our industry.

Current research projects focus on the areas of:

- Neuro-Rehabilitation
- Brain Injury in Aboriginal Populations
- Clinical Education
- Developmental Communication Disorders

For more information, visit: www.ecu.edu.au/ schools/ medical-and-health-sciences/our-research/ communications-disorders-research-group

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NUTRITION, LIFESTYLE AND CLINICAL TRIALS RESEARCH GROUP

Cardiovascular disease (CVD) is the number one cause of death worldwide. It kills over 17 million people annually, and in Australia, one person dies of CVD every 12 minutes. Most of these deaths can be prevented or substantially delayed by better diet and lifestyle. Even small diet and lifestyle changes can lead to substantial health benefits.

Increasing the intake of fruits, vegetables and whole grains remains the cornerstone of dietary approaches to prevent CVD. This alone has the potential to cut CVD risk and associated costs by up to 25%.

Surprisingly little is known about the components of fruits, vegetables and whole grains that contribute to vascular health, or the mechanisms involved. Identifying these specific components and mechanisms will enhance targeted dietary approaches for CVD prevention.

Our research program has three core aims:

- to investigate how specific components present in plant foods improve vascular health;
- to develop and evaluate lifestyle approaches to improve vascular and musculoskeletal health;
- to evaluate and implement novel approaches to increase intake of plant foods in the community; and
- to develop and evaluate lifestyle approaches to improve vascular health and physical function.

We perform carefully controlled trials examining the effects of diet and lifestyle on vascular health and related outcomes.

We conduct large-scale observation studies exploring the relationships of diet and lifestyle with vascular health. Further mechanistic insights are provided by laboratory-based studies, including cell biology, genetics and omics, and studies using animal models.

Current projects include:

- Establishing the importance of particular plant food components, such as flavonoids, nitrate, vitamin K and organo-sulphur compounds, for human health
- Understanding the importance of plant food diversity for human health
- Investigating the pathways linking diet and lifestyle with vascular disease, including implications on physical function
- Evaluating if knowledge of presence of advanced vascular disease motivates improved diet and lifestyle choices
- Developing better evidence to improve physical function through improved diet and lifestyle in older adults

For more information, visit: www.ecu.edu.au/schools/medical-and-health-sciences/our-research/nutrition-lifestyle-clinical-trials-research-group

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EMERGENCY SERVICES RESEARCH GROUP

The Emergency Service Research Group has research collaborations with state, national and international organisations including the Royal Flying Doctor Service, FALCK, the WA Department of Fire and Emergency Services and the WA Department of Mines and Petroleum.

The Emergency Services Research Group is a trans-disciplinary research group with focus on five broad themes.

- Paramedicine
- Emergency response
- Aeromedical retrieval
- Search and rescue
- Fire

HEALTH SIMULATION CENTRE

The ECU Health Simulation Centre is a high fidelity simulation centre with a strong focus on human factors, leadership, followership, communication and clinical competence.

TThe ECU Health Simulation Centre is a trans-disciplinary research group with focus on four broad themes:

- Optimising interprofessional practice
- The use of simulation to enhance professional preparation
- Establishing fitness to practice guidelines
- Identification and elimination of errors

The Centre offers research and training relevant to:

- Anaesthesia
- Critical care paramedicine
- Community paramedicine
- Emergency medicine
- Intensive care
- Nutrition and dietetics
- Occupational health
- Speech pathology
- Undergraduate paramedicine

For more information, visit: www.ecu.edu.au/community-engagement/health-advancement/ecu-health-simulation-centre

OUR RESEARCHERS AND SUPERVISORS

PROFESSOR MOIRA SIM

MBBS, FRACGP, FAChAM, PGDipAlcDrugAbStud, GAICD
Executive Dean
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Professor Moira Sim is the Executive Dean of the School of Medical and Health Science. She is a general practitioner and a specialist physician in addiction medicine, with over 30 years in clinical practice in the community. She has been appointed on the List of Approved Persons for Hearing Panels (Cross Profession Practitioner) and as a Health Assessor for the Australian Health Practitioner Regulation Agency.

Professor Sim is a peer reviewer for the journals BMJ Open, Australian Family Physician, the Australian and New Zealand Journal of Public Health, and Drug and Alcohol Review. She is a Fellow of both the Royal Australian College of General Practitioners and the Australasian Chapter of Addiction Medicine (the Royal Australasian College of Physicians).

SELECTED PUBLICATIONS

Journal Articles

- Arendts G, Deans P, O'Brien K, Etherton-Beer C, Howard K, Lewin G, Sim M. (2018). A clinical trial of nurse practitioner care in residential aged care facilities. Archives of Gerontology and Geriatrics 2018; 77(129-132).
- Dagostino C, De Gregori M, Gieger C, Manz J, Gudelj I, Lauc G, Divizia L, Wang W, Sim M, Pemberton I, MacDougall J, Williams F, Van Zundert J, Primorac D, Auchenko Y, Kapurai L, Allegri M, on behalf of the Pain Omics Group. (2017). Validation of standard operating procedures in a multicenter retrospective study to identify -omics biomarkers for chronic low back pain. PLOS One 2017. https://doi.org/10.1371/journal.pone.0176372
- Liira H, Knight AP, Sim M, Wilcox HM, Cheetham S, Aalto MT. (2016). Workplace interventions for preventing job loss and other work related outcomes in workers with alcohol misuse. Cochrane Database of Systematic Reviews 2016;doi:10.1002/14651858.CD012344.
- Almeida O, Marsh K, Murray K, Hickey M, Sim M, Ford A, Flicker L. (2016). Reducing Depression During the Menopausal Transition with Health Coaching: Results from the Healthy Menopausal Transition Randomised Controlled Trial. Maturitas 2016;92:41-8. doi 10.1016/j.maturitas.2016.07.012.
- Wain T, Sim M, Bessarab D, Mak D, Hayward C, Rudd CH. (2016). Engaging Australian Aboriginal narratives to challenge attitudes and create empathy in health care: A methodological perspective. BMC Medical Education 2016;16(1):157.
- Sim M, McEvoy A, Khong E, Wain T. (2014). Improving health professionals' knowledge of hepatitis B using cartoon based learning tools: a retrospective analysis of pre and post tests. BMC Medical Education 2014;14:244.
- Almeida O, Marsh K, Flicker L, Hickey M, Ford A, Sim M. (2016). Reducing depression during the menopause transition: a study protocol for a randomised controlled trial. Trials 2014;15(1):312.

GRANTS

- 2019 -2020, Develop a systematic profiling of neurological conditions that will facilitate personalised treatment and streamline service delivery, Multiple Sclerosis Society of Western Australia, MS WA - Research funding for social and applied research, $600,000
- 2017 -2019 Primary Care Capacity Building – Alcohol and Drugs, WA Primary Health Alliance, Grant, $511,980
- 2014 -2019 Online Hepatitis B, Hepatitis C and Sexually Transmitted Infection (STI) Education for the Department of Health, Department of Health WA, Tender, $487,136

Research Interests

- Primary care and the health care interface
- Mental health and alcohol and other drugs

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Associate Dean Research
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Associate Professor Chris Abbiss is Associate Dean of the School of Medical and Health Science and his research focus is within thermoregulation and environmental stress, applied human physiology and exercise science. He works in close collaboration with several professional exercise and sporting associations, clinicians and medical practitioners to translate the findings from his research.

He is member of the Centre for Exercise and Sports Science Research (CESSR) and the Australian Centre for Research into Injury in Sport and its Prevention (ACRISP). A/Prof Abbiss has published over 115 referred scientific journal articles and his research has been successful in attracting in excess of $5m of grant funding. He has received ECU's Research Medal and Vice Chancellors Awards for Recognition of Research Supervision.

SELECTED PUBLICATIONS

Journal Articles

- Choo, HC., Peiffer, J., Lopes-Silva, J., Mesquita, R., Amano, T., Kondo, N., Abbiss, C., (2019), Effect of ice slushy ingestion and cold water immersion on thermoregulatory behavior. PLoS One, 14(2)
- Lawler, N., Abbiss, C., Gummer, J., Broadhurst, D., Govus, A., Fairchild, T., Thompson, K., Garvican-Lewis, L., Gore, C., Maker, G., Trengove, R., Peiffer, J., (2019), Characterizing the plasmametabolome during 14 days of live-high, train-low simulated altitude: Ametabolomic approach. Experimental Physiology, 104(1), 81-92
- Gordon, N., Abbiss, C., Abdullah, M., Maiorana, A., Peiffer, J., (2018), Active and inactive leg hemodynamics during sequential single-leg interval cycling. Medicine and Science in Sports and Exercise, 50(6), 1297-1304
- Barley, O., Chapman, D., Abbiss, C., (2018), Weight Loss Strategies in Combat Sports and Concerning Habits in Mixed Martial Arts. International Journal of Sports Physiology and Performance, 13(7), 933-939
- Govus, AD., Peeling, P., Abbiss, C., Lawler, NG., Swinkels, DW., Thompson, KG., Peiffer, JJ., Gore, CJ., Garvican-Lewis, LA., (2017), Live high, train low – influence on resting and post-exercise hepcidin levels. Scandinavian Journal of Medicine and Science in Sports, 27(7), 704-713
- Abdullah, M., Markworth, J., Watson, G., Choo, HC., Govus, A., Pham, T., Hickey, A., Cameron-Smith, D., Abbiss, C., (2015), Regular postexercise cooling enhances mitochondrial biogenesis through AMPK and p38 MAPK in human skeletal muscle. American Journal of Physiology Regulatory Integrative and Comparitive Physiology, 309(3), R286-R294
- Abdullah, M., Watson, G., Choo, HC., Lewandowski, P., Papazzo, A., Cameron-Smith, D., Abbiss, C., (2014), Postexercise muscle cooling enhances gene expression of PGC-1α. Medicine and Science in Sports and Exercise, 46(10), 1900-1907

GRANTS

- 2019 – 2020, Develop a systematic profiling of neurological conditions that will facilitate personalised treatment and streamline service delivery. Multiple Sclerosis Society of Western Australia, $600,000
- 2018 – 2020, High-Performance Cycling. New Global Cycling Services SAGL, $406,244
- 2015 – 2018, Examination of Physiological Factors Influencing High Performance Sprint Cycling. Australian Cycling Federation Inc, $395,040

Research Interests

- Metabolic responses and muscle tissue adaptations to exercise, altitude and heat stress
- Environmental stress and heat tolerance in exercising and clinical populations
- Haemodynamics and tissue oxygenation during exercise
- High-performance cycling

PROFESSOR ANTHONY BLAZEVICH

PhD, BSc (Hons)
Director, Centre for Exercise and Sports Science Research (CESSR)
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Professor Antony Blazevich is internationally renowned for his work in describing the anatomical, biomechanical, neuromuscular and functional adaptations to acute (e.g. warm-up, muscle stretching, fatigue) and chronic (strength, plyometric, stretching training) exercise interventions. His research examines the adaptive potential of both athlete as well as non-athlete and clinical populations using a suite of medical imaging, neurophysiological and biomechanical testing methods. His findings have led to a step change in our understanding of the human adaptive response to exercise stimuli.

Professor Blazevich has published over 130 scientific papers and 7 book chapters (on muscle strength training, flexibility and the stretch-shortening cycle), attracting over 6500 citations. He also has been invited to speak over 70 times at international scientific conferences and to industry, has attracted over $1.5m in research funding, and his research group works closely with numerous national and international research collaborators. He is author of "Sports Biomechanics: The Basics" (Bloomsbury Publishers, UK), which is in its third edition, and an Editorial Board Member for Translational Sports Medicine, Scandinavian Journal of Medicine and Science in Sports, BMC Sports Science, Medicine and Rehabilitation, and Frontiers in Physiology (Exercise Physiology). He is a Fellow of the European College of Sports Sciences and member of the Australian Strength & Conditioning Association, National Strength & Conditioning Association (USA), International Society for Sports Biomechanics and the Exercise and Sports Science Australia.

SELECTED PUBLICATIONS

Journal Articles

- Trezise, J. & Blazevich, A.J. (2019). Anatomical and neuromuscular determinants of strength change in previously untrained men following heavy strength training. Frontiers in Physiology. 10:1001.doi: 10.3389/fphys.2019.01001.
- Kirk, B.J.C, Trajano, G., Pulverenti, T., Rowe, G. & Blazevich, A.J. (2019). Neuromuscular factors contributing to reductions in muscle force after repeated, high-intensity muscular efforts. Frontiers in Physiology, in press.
- Bontemps, B., Piponnier, E., Chalchat, E., Blazevich, A.J., Julian, V., Bocock, O., Duclos, M., Martin, V. & Ratel, S. (2019). Children exhibit a more comparable neuromuscular fatigue profile to endurance athletes than untrained adults. Frontiers in Physiology, 10:119. doi: 10.3389/fphys.2019.00119.
- Blazevich, A.J. (2018). Adaptations in the passive mechanical properties of skeletal muscle to altered patterns of use. Journal of Applied Physiology, doi: 10.1152/japplphysiol.00700.2018.
- Bochkezanian, V., Newton, R.U., Trajano, G.S. & Blazevich, A.J. (2018). Effects of neuromuscular electrical stimulation in people with spinal cord injury. Medicine and Science in Sports and Exercise, 50(9):1733-1739.
- Birat, A., Bourdier, P., Piponnier, E., Blazevich, A.J., Maciejewski, H., Duche, P. & Ratel, S. (2018). Metabolic and fatigue profiles are comparable between prepubertal children and well-trained adult endurance athletes. Frontiers in Physiology, 9: 387, doi: 10.3389/fphys.2018.00387.

GRANTS

- 2018 -2020 Determining the impact of cycling position on the energetic cost and mechanical power output using integrated energetics and muscle mechanical modelling. Queensland Academy of Sport, $37,500
- 2015 -2017 Effects of dairy-derived nutritional supplementation combined with physical activity on health and physical function in 40 – 60 year-old women. Fonterra Cooperative Ltd, $729,998
- 2014 -2017 Combat fitness: assessing and developing speed and quickness for improved performance. Australian Institute of Sport (AIS), $36,041

Research Interests

- Anatomical, biomechanical and neuromuscular adaptations to exercise training and detraining (including strength, plyometrics, flexibility and fitness training)
- Neuromuscular aspects of fatigue
- Tendon adaptations to training and their influence on physical function
- Effects of exercise on health and physical function

PROFESSOR AMANDA DEVINE

PhD, AN, RPHNutr
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Professor Amanda Devine is a leading expert on food literacy and investigating the role of nutrition on health and vitality.

Professor Devine has worked on 90 nutrition-related research projects with total funding worth over $5.9m where research into practice is a priority. She was Chair of Nutrition Australia WA Division for a decade; has been on the WA Food Science & Technology, School Curriculum and Standards Authority Committee for 10 years and actively researches in nutrition education from the early years to Year 12.

Professor Devine is the co-author of the cookbook "Gut Feeling: Mindful Menus for the Microbiome" which translates research evidence into a mindful 14 day menu that is high in resistant starch. The research and cookbook have attracted significant media coverage including a feature on the ABC TV program "Ask the Doctor" in 2017.

SELECTED PUBLICATIONS

Journal Articles

- Sambell R, Wallace R, Costello L, Lo J, Devine A. Measuring food provision in Western Australian long day care (LDC) services: a weighed food record method/protocol at a service level. Nutrition Journal. 2019;18(1):38. doi.org/10.1186/s12937-019-0462-2.
- Genoni, A., Christophersen, CT., Lo, J., Coghlan, M., Boyce, MC., Bird, A., Lyons-Wall, P., Devine, A. (2019). Long-term Paleolithic diet is associated with lower resistant starch intake, different gut microbiota composition and increased serum TMAO concentrations. European Journal of Nutrition.
- Lombardi, K., Beatty, S., Devine, A., Wallace, R., & Costello, L. (2019). Fat talk: Influences on body image in childcare. Health Promotion Journal of Australia. doi:10.1002/hpja.272.
- Sambell, R., Andrew, L., Godrich, S., Wolfgang, J., Vandenbroeck, D., Stubley, K., Rose, N., Newman, L., Horwitz, P., Devine, A. (2019). Local Challenges and Successes Associated with Transitioning to Sustainable Food System Practices for a West Australian Context: Multi-Sector Stakeholder Perceptions. Int. J. Environ. Res. Public Health 2019, 16, 2051; doi:10.3390/ijerph16112051
- Godrich, SL., Payet, J., Brealey, D., Edmunds, M., Stoneham, M., Devine, A. (2019). South West Food Community: A Place-Based Pilot Study to Understand the Food Security System. Nutrients 2019, 11(4), 738; https://doi.org/10.3390/nu11040738.
- Devine, A., Wallace, R., Lo, J., Miller, M., Sambell, R., Costello, L., Lombardi, K., Veurink, S. (2019). Online programs build confidence and improve healthy eating messages in Early Years services. Australasian Journal of Early Childhood, https://doi.org/10.1177/1836939119833244

GRANTS

- 2013 - 2021, Request for food and nutrition curriculum support materials as part of the WA Healthy Children Program - K-10 School Food and Nutrition Curriculum Support Materials. Department of Health WA, WA Healthy Children Program, $984,623
- 2018 – 2021, Pathway to healthy food environments: a guide for local governments in Western Australia. Healthway (WA Health Promotion Foundation), Healthway Grant, $710,084
- 2019 – 2020, Develop a systematic profiling of neurological conditions that will facilitate personalised treatment and streamline service delivery. Multiple Sclerosis Society of Western Australia, MS WA - Research funding for social and applied research, $600,000

Research Interests

- Nutrition in the early years
- State-wide food literacy in adults and children
- Food security and the built food environment
- Plant based diets and gut health, cardiovascular health, gestational diabetes and ulcerative colitis
- Public health issues related to regenerative farming and food supply, microplastics in food, immunization, health service delivery

PROFESSOR DYLAN EDWARDS

PhD, BAppSc (Hons)
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Professor Dylan Edwards is a human clinical neuroscientist who has spent the past decade in New York and Boston at Burke-Cornell and Harvard University respectively. His group studies motor recovery after neurological damage including adult stroke, spinal cord injury, and cerebral palsy. The work incorporates emerging technologies of transcranial magnetic stimulation, and rehabilitation robotics. Professor Edwards is advancing these therapies, examining efficacy and biomarkers of recovery, as well as investigating novel combinatorial therapies such as with new drugs or dietary modification. Edith Cowan University is young and vibrant, rapidly rising to serious research productivity status on the International stage, and is well positioned geographically and economically for success in clinical research. Forging great connections between ECU and world leading universities in the United States is a strategic move, whereby new ideas can be shared and tested. The vision for Professor Edwards and his team is to have ECU as a leader in clinical neuroscience research, by partnering with Western Australian, Interstate and International hospitals.

Research Interests

- Brain and spinal cord injury
- Therapeutic effectiveness of robotic and non-invasive brain stimulation
- Neurorehabilitation and neuroplasticity

SELECTED PUBLICATIONS

Journal Articles

- Cramer, S., Dodakian, L., Le, V., See, J., Augsburger, R., ... Edwards, D., ... (2019), Efficacy of Home-Based Telerehabilitation vs In-Clinic Therapy for Adults After Stroke A Randomized Clinical Trial. JAMA Neurology, epub ahead of Print(June 2019), 9p., DOI: 10.1001/jamaneurol.2019.1604
- Gerber, M., McLean, A., Stephen, S., Chalco, A., Arshad, U., ... Edwards, D., (2019), NeuroMeasure: A software package for quantification of cortical motor maps using frameless stereotaxic transcranial magnetic stimulation. Frontiers in Neuroinformatics, 13(April 2019), Article number 23, DOI: 10.3389/fninf.2019.00023.
- Buchwald, A., Calhoun, H., Rimikis, S., Lowe, M., Wellner, R., Edwards, D., (2019), Using tDCS to facilitate motor learning in speech production: The role of timing. Cortex, 111(February 2019), 274-285, DOI: 10.1016/j.cortex.2018.11.014.
- Silverstein, J., Cortes, M., Tsagaris, K., Climent, A., Gerber, L., Oromendia, C., Fonzetti, P., Ratan, R., Kitago, T., Icaboni, M., Wu, A., Dobkin, B., Edwards, D., (2019), Paired associative stimulation as a tool to assess plasticity enhancers in chronic stroke. Frontiers in Neuroscience, 13(August 2019), Article 792, DOI: 10.3389/fnins.2019.00792.
- Wortman-Jutt, S., Edwards, D., (2019), Poststroke Aphasia Rehabilitation: Why All Talk and No Action?. Neurorehabilitation and Neural Repair, 33(4), 235-244, DOI: 10.1177/1545968319834901.
- Buchwald, A., Falconer, C., Rykman-Peltz, A., Cortes, M., Pascual-Leone, A., Thickbroom, G., Krebs, H., Fregni, F., Gerber, L., Oromendia, C., Chang, J., Volpe, B., Edwards, D., (2018), Robotic arm rehabilitation in chronic stroke patients with Aphasia may promote speech and language recovery (but effect is not enhanced by supplementary tDCS). Frontiers in Neurology, 9(Oct 2018), Article no. 853, Switzerland, Frontiers Research Foundation, DOI: 10.3389/fneur.2018.00853.

GRANTS

- 2019 -2020, Develop a systematic profiling of neurological conditions that will facilitate personalised treatment and streamline service delivery, Multiple Sclerosis Society of Western Australia, MS WA - Research funding for social and applied research, $600,000
- 2017-2018, Improving hand function in chronic stroke with combined robotic training and transcranial direct current stimulation, New York State DoH01-PART-2016-00031 (USA), US $359,000

PROFESSOR CAROLINE FINCH

PhD, MSc, BSc (Hons)
Deputy Vice-Chancellor (Research)
Email: c.finch@ecu.edu.au

Professor Caroline Finch is a world-renowned epidemiology researcher who is known globally for her injury prevention, injury surveillance and sports medicine research. She is the author of over 700 research-related publications and has previously been ranked as one of the 10 most highly published injury researchers of all time. Her research has directly informed the development of safety policy and implementation of injury prevention programs by Government Departments of Sport and Health, health promotion/injury prevention agencies, and peak sports bodies worldwide.

Professor Finch is the Director of The Australian Centre for Research into Injury in Sport and its Prevention (ACRISP), which is one of only four research centres worldwide to have been recognised as a centre for research excellence in the prevention of injuries and promotion of health in athletes by the International Olympic Committee (IOC) continually since 2010. She is a member of the IOC 's Medical and Scientific Expert Group Expert Group as well as the IOC's expert group for the Methodology for recording and reporting of data for injury surveillance. She is currently a Senior Associate Editor of the British Journal of Sports Medicine including its speciality Injury Prevention and Health Promotion series, and is an Honorary Editor of Injury Epidemiology.

In 2015, Professor Finch was awarded the American Public Health Association Distinguished International Career Award from the Injury Control and Emergency Health Services Section. In 2018, she was appointed as an Officer of the Order of Australia (AO) for her distinguished service to sports medicine, particularly in the area of injury prevention as an educator, researcher and author, and to the promotion of improved health in athletes and those who exercise.

SELECTED PUBLICATIONS

Journal Articles

- Finch CF, Staines C. Guidance for sports injury surveillance: The 20- year influence of the Australian sports injury data dictionary. Inj Prev 2018;24:372-380.
- Donaldson A, Lloyd D, Gabbe B, Cook J, Finch CF. A controlled ecological evaluation of an implemented exercise-training program to prevent lower limb injuries in sport – Part 2: differences in implementation activity. Inj Prev. doi: 10.1136/injuryprev-2017-042579.
- Finch CF, Akram M, Gray SE, Donaldson A, Lloyd D, Cook J. A controlled ecological evaluation of an implemented exercise-training program to prevent lower limb injuries in sport – population-level trends in hospital-treated injuries. Br J Sports Med. doi: 10.1136/bjsports-2018-099488.
- Donaldson A, Lloyd D, Gabbe B, Cook J, Finch CF. We have the programme, what next? Planning the implementation of an injury prevention programme. Inj Prev 2017;23:273-280.
- Ekegren CL, Gabbe B, Finch CF. Sports injury surveillance systems: A review of methods and data quality. Sports injury surveillance systems: A review of methods and data quality. Sports Med 2016;46(1):49-65

GRANTS

- 2019 – 2022, Australian Centre for Research into Injury in Sport and its Prevention (ACRISP). International Olympic Committee, Research Centres for Prevention of Injury and Protection of Athlete Health, $568,107
- 2015 – 2020, From data to action: a new process for developing injury countermeasures. Australian Research Council, Linkage Project, $2,124,837
- 2018 – 2020, Evaluating the Impact of the IOC Sports Medicine Statements on Olympic Athlete Health and Wellbeing. International Olympic Committee, Grant, $131,393

Research Interests

- Sports injury epidemiology, with a focus on the development and application of rigorous approaches
- Injury surveillance methodology and surveillance system design
- The design, implementation and formal evaluation of injury prevention programs
- The uptake of injury prevention evidence into policy and practice

PROFESSOR DANIEL GALVÃO

PhD, MAppSc
Director, Exercise Medicine Research Institute
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Professor Daniel Galvão is Director of the ECU Exercise Medicine Research Institute, Fellow of the American College of Sports Medicine and his research interests are in the applications of exercise as medicine for the prevention and management of cancer treatment side effects, treatment efficacy and survival.

Professor Galvão has received continuing nationally competitive funding over the past 15 years with more than $18m of research support including a National Health and Medical Research Council (NHMRC) Centre for Research Excellence in Prostate Cancer Survivorship; NHMRC Project Grants; Prostate Cancer Foundation of Australia; Cancer Australia; National Breast Cancer Foundation; Department of Health Western Australia; and Project Grants and Fellowships from the Cancer Council Western Australia.

Professor Galvão has a total of 120 refereed publications in leading journals in Oncology/Urology such as Journal of Clinical Oncology, European Urology and Nature Reviews Urology and co-authorship on four Position Statements in Exercise and Cancer including the American College of Sports Medicine (2010 and 2019) published in CA: A Cancer Journal for Clinicians (Impact Factor 223.6; 1/229 in Oncology) and Exercise and Sports Science Australia (2009 and 2019). Overall the body of work has demonstrated the efficacy and safety of implementing exercise in the setting of oncology with substantial benefits translated to patients from early stage to patients with advanced metastatic cancer.

SELECTED PUBLICATIONS

Journal Articles

- Schmitz KH, Campbell A, Stuiver MM, Pinto BM, Schwartz AL, Morris GS, Ligibel JA, Cheville A, Galvão DA, et al. Exercise is Medicine in Oncology: Engaging clinicians to help patients move through cancer. CA: A Cancer Journal for Clinicians (In press).
- Taaffe DR, Newton RU, Spry N, Joseph D, Chambers SK, Gardiner RA, Wall B, Cormie P, Bolam KA, Galvão DA. Effects of different exercise modalities on fatigue in prostate cancer patients undergoing androgen deprivation therapy: a year-long randomised controlled trial. European Urology 2017 Aug;72(2):293-299.
- Galvão DA, Taaffe DR, Spry N, Gardiner RA, Taylor R, Risbridger G, Frydenberg M, Hill M, Chambers SK, Stricker P, Shannon T, Hayne D, Zopf E, Newton RU. Enhancing Active Surveillance for Men with Prostate Cancer: The Potential Role of Exercise Medicine. Nature Reviews Urology 2016 May;13(5):258-65
- Newton RU, Taaffe DR, Chambers SK, Spry N, Galvão DA. Effective Exercise Interventions for Patients and Survivors of Cancer Should be Supervised, Targeted, and Prescribed With Referrals From Oncologists and General Physicians. J Clin Oncol. 2018 Mar 20;36(9):927-928.

GRANTS

- 2018-2023, Can Exercise Delay Transition to Active Therapy in Men with Low Grade Prostate Cancer? A Multi-Centre Randomized Controlled Trial., National Health and Medical Research Council, Project Grants, $596,084
- 2016-2022, Centre for Research Excellence in Prostate Cancer Survivorship (CRE-PCS), National Health and Medical Research Council, Centres of Research Excellence, $1,130,516
- 2014-2018, Improving sexual health in men with prostate cancer: randomised controlled trial of exercise and psychosexual therapies, National Health and Medical Research Council, Project Grants, $565,380
- 2013-2019, Provision of Survey Data Collection Services to the Department of Health: Influence of Lifestyle Factors on Non-Communicable Disease in Western Australians, Department of Health WA, $4,928,395

Research Interests

- Exercise medicine in oncology: from cancer-related toxicities to survival
- Exercise medicine in patients with: (1) low grade cancers undergoing surveillance, (2) local/advanced cancers, and (3) bone metastatic disease
- Exercise medicine prior/during/post radiation and systemic therapies
- Exercise medicine in urological cancers
- Cancer survivorship

ASSOCIATE PROFESSOR ELIN GRAY

PhD, MSc, BSc(Hons)
Email: e.gray@ecu.edu.au

Associate Professor Elin Gray is a Cancer Research Trust and Cancer Council WA Research Fellow whose research focuses on identifying blood biomarkers for diagnosis of melanoma and to guide treatment decisions. She is also interested in understanding the genetic and molecular mechanisms of cancer drug resistance. She works in close collaboration with leading oncologists and pathologists to translate these results into clinical application to improve patient outcomes.

A/Prof Gray is a member of the Society for Melanoma Research (SMR), the leading international society of melanoma researchers and clinicians; the European Society for Medical Oncology and the International Society of Liquid Biopsy. She is also a member of the Australian Society of Medical Research (ASMR) and served as ASMR WA Committee Convener in 2015/16. She is an editorial board member for Biochimica et Biophysica Acta (Elsevier) and Cancers (MDPI), and has served as special issue editor for Frontiers Medicine.

A/Prof Gray has published 65 peer-reviewed journal articles with more than 4500 citations. She has been an invited speaker to the Society for Melanoma Research Congress (2018), Sydney Cancer Conference (2018), First Australasian Melanoma Conference (2016), National Melanoma Conferences (2012&2014) and Thomas Ashworth CTC Symposia (2014-2018). She has attracted over $4m in competitive research funding.

SELECTED PUBLICATIONS

Journal Articles

- Aya-Bonilla C, Gray ES, Manikandan J, Freeman JB, Zaenker P, Reid AL, Khattak MA, Frank MH, Millward M, Ziman M. Immunomagnetic-Enriched Subpopulations of Melanoma Circulating Tumour Cells (CTCs) Exhibit Distinct Transcriptome Profiles. Cancers (Basel). 2019 Jan 30;11(2). # equal contributors.
- Armitage JD, Tan DBA, Cha L, Clark M, Gray ES, Fuller KA, Moodley YP. A standardised protocol for the evaluation of small extracellular vesicles in plasma by imaging flow cytometry. J Immunol Methods. 2019 Mar 16. pii: S0022-1759(18)30318-1. doi: 10.1016/j.jim.2019.03.006.
- Acheampong, E., Spencer, I., Lin, W., Ziman, M., Millward, M., Gray, E., (2019), Is the Blood an Alternative for Programmed Cell Death Ligand 1 Assessment in Non-Small Cell Lung Cancer? Cancers, 11(7), pii: E920, DOI: 10.3390/cancers11070920.
- Gray ES, Witkowski T, Pereira M, Calapre L, Herron K, Irwin D, Chapman B., Khattak MA, Raleigh J, Hatzimihalis A, Cebon J, Sandhu S, McArthur G, Millward M, Ziman M, Dobrovic A, Wong SQ. 2019. Genomic analysis of circulating tumour DNA using a melanoma-specific UltraSEEK Oncogene panel. J Mol Diagn. 2019 Feb 5. pii: S1525-1578(18)30237-X.
- Calapre L., Giardina T, Robinson C, ... Gray E. 2019. Locus-specific concordance of genomic alterations between tissue and plasma circulating tumor DNA in metastatic melanoma. Molecular Oncology. 13(2):171-1.

GRANTS

- 2019 – 2022, Developing blood tests to guide treatment of melanoma. Cancer Council of WA Inc, Fellowship, $955,724
- 2017 – 2022, Enabling Advanced Single Cell Cancer Genomics in Western Australia. Cancer Research Trust, The Grant, $305,925
- 2019 – 2020, Single Cell Whole Transcriptome Sequencing of Melanoma Circulating Tumour Cells (CTCs): Unveiling Cell Diversity, Tour de Cure. Pioneering Cancer Research Grant, $120,000
- 2017 – 2019, Liquid biopsy for personalised monitoring of melanoma patients. National Health and Medical Research Council, Development Grant, $950,389

Research Interests

- Analysis of blood biomarkers (ctDNA, CTCs and exosomes) in various cancers: melanoma, lung and ovarian cancer, in relation to clinical outcomes
- Understanding the molecular drivers of carcinogenesis, metastatic spreading and treatment resistance in melanoma
- Therapeutic combinations to overcome drug resistance

PROFESSOR G. GREGORY HAFF

PhD
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Professor G. Gregory Haff is a Fellow of the National Strength and Conditioning Association. He served as the President of the National Strength and Conditioning Association (NSCA) from 2015-2018. He currently serves as the Sport Scientist on the Australian Weightlifting High Performance Advisor Group.

In 2014, Professor Haff was named the United Kingdom Strength & Conditioning Association: Strength & Conditioning Coach of the Year for Education and Research. Additionally, in 2011 he was awarded the NSCA's William J. Kraemer Sport Scientist of the Year Award for his applied sport science research. Professor Haff has consulted with the Chinese Olympic Committee (weightlifting/rowing), the English Institute of Sport (Track Cycling/Netball/Weightlifting), professional sports teams (Jacksonville Jaguars, Adelaide Crows, Western Force, Wildcats, West Coast Fever, and several other teams). From 2003-2004 he served as a member of the United States Olympic Committee Performance Enhancement Team for Weightlifting.

Professor Haff has 164 publications and is the co-author of the renowned training resource "Periodization: Theory and Methodology of Training" and a popular speaker at national and international conferences. Professor Haff has received over $1m in total career research funding.

Research Interests

- Resistance Training Methods: Velocity Based Training Methods
- Neuromuscular Adaptations to Resistance Training
- Training Theory: Recovery and Training Methods

SELECTED PUBLICATIONS

Journal Articles

- Kawamori N and Haff GG. The optimal training load for the development of muscular power. J Strength Cond Res 18: 675-684, 2004.
- Haff GG, Stone MH, O'Bryant HS, Harman E, Dinan CN, Johnson R, and Han KH. Force-time dependent characteristics of dynamic and isometric muscle actions. J Strength Cond Res 11: 269-272, 1997.
- Haff GG and Nimphius S. Training Principles for Power. Strength & Conditioning Journal 34: 2-12, 2012.
- Kawamori N, Rossi SJ, Justice BD, Haff EE, Pistilli EE, O'Bryant HS, Stone MH, and Haff GG. Peak force and rate of force development during isometric and dynamic mid-thigh clean pulls performed at various intensities. J Strength Cond Res 20: 483-491, 2006.
- Haff GG, Carlock JM, Hartman MJ, Kilgore JL, Kawamori N, Jackson JR, Morris RT, Sands WA, and Stone MH. Force-time curve characteristics of dynamic and isometric muscle actions of elite women Olympic weightlifters. J Strength Cond Res 19: 741-748, 2005.
- Seitz LB and Haff GG. Factors Modulating Post-Activation Potentiation of Jump, Sprint, Throw and Upper-Body Ballistic Performances: A Systematic Review with Meta-Analysis. Sports Medicine 46: 231-240, 2016.
- Haff GG, Koch AJ, Potteiger JA, Kuphal KE, Magee LM, Green SB, and Jakicic JJ. Carbohydrate supplementation attenuates muscle glycogen loss during acute bouts of resistance exercise. Int J Sport Nutr Exerc Metab 10: 326-339, 2000.

GRANTS

- 2019 -2023, Determination of Optimal Preparation and Current Online Squadron (OS) Operators to Enhance Close Quarter Battle Skills: Long and Short Term Interventions. Industry Engagement Scholarship from the Australian Defence Forces, $25,000
- 2019 – 2023, Examination of Energy Expenditure and Availability in Special Force Soldiers. Industry Engagement Scholarship from the Australian Defence Forces, $50,000
- 2014 -2017, (Minimum) Resistance Training Frequency: Effect on Motivation and Adherence to Train, Overall Health Status, and Neuromuscular Performance. Finnish Ministry of Education and Culture, $279,765

PROFESSOR JONATHAN HODGSON

PhD, BAgrSc
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Professor Jonathan Hodgson currently holds a National Health and Medical Research Council Senior Research fellowship (2017-2021). The primary focus of his research is to better understand how plant foods (fruits, vegetables and whole grains) contribute to vascular health.

Professor Hodgson has more than 200 career publications, including approximately 140 original research papers. Publication in top-tier journals and high citation rates (total citations ~10,000) are hallmarks of his research output, and demonstrate substantial impact. The majority of original research is published in leading high impact journals such as the American Journal of Clinical Nutrition. Professor Hodgson's research provides a major contribution to understanding of how biologically active dietary components enhance cardiovascular health. This research is translated into dietary guidelines and is widely used to promote healthy diets. It also resulted in the commercial development and promotion of commonly consumed heart-healthy foods.

He has attracted more than $10m in research funding from both industry and nationally competitive funding bodies such as the National Health and Medical Research Council and the Australian Research Council. In 2013 he was awarded the Nutrition Society of Australia Medal for Excellence in Nutrition Research.

SELECTED PUBLICATIONS

Journal Articles

- Blekkenhorst LC, Lewis JR, Bondonno CP, Sim M, Devine A, Zhu K, Lim WH, Woodman RJ, Beilin LJ, Thompson PL, Prince RL, Hodgson JM. Vegetable diversity in relation to 15-year atherosclerotic vascular disease deaths and subclinical atherosclerosis in older adult women. Eur J Nutr 2019 (online; https://doi.org/10.1007/s00394-019-01902-z.
- Bondonno NP, Lewis JR, Blekkenhorst LC, Bondonno CP, Shin JHC, Croft KD, Woodman RJ, Wong G, Lim WH, Gopinath B, Flood VM, Russell J, Mitchell P, Hodgson JM. Association of flavonoids and flavonoid-rich foods with all-cause mortality: The Blue Mountains Eye Study. Clin Nutr 2019 (online; https://doi.org/10.1016/j.clnu.2019.01.004).
- Sim M, Lewis JR, Blekkenhorst LC, Bondonno CP, Devine A, Zhu K, Peeling P, Prince RL, Hodgson JM. Higher dietary nitrate intake is associated with better muscle function in older women. J Cachexia Sarcop Muscle 2019; 10:601-610.
- Lewis JR, Eggermont CJ, Schousboe JT, Lim W, Wong G, Khoo B, Sim M, Yu MX, Hodgson JM, Zhu K, Wilson KE, Kiel DP, Prince RL. Association between abdominal aortic calcification, bone mineral density and fracture in older women: the Perth Longitudinal Study of Ageing Women. J Bone Min Res 2019 (accepted 28/6/2019).
- Bondonno NP, Dalgaard F, Kyrø C, Murray K, Bondonno CP, Lewis JR, Croft KD, Gislason G, Scalbert A, Cassidy A, Tjønneland A, Overvad K, Hodgson JM. Flavonoid intake is associated with lower mortality in the Danish Diet, Cancer, and Health Cohort. Nature Commun 2019; https://doi.org/10.1038/s41467-019-11622-x.

GRANTS

- 2017 – 2022, Dietary approaches to enhance vascular health. National Health and Medical Research Council, Research Fellowships, $631,370
- 2018 – 2020, A new Western Australian flavonoid-rich apple, BravoTM, and vascular health. Edith Cowan University, ECU Industry Collaboration Grant - 2017 Open Round, $140,778
- 2016 – 2019, Consumption of Nitrate-rich vegetables to reduce blood pressure. National Health and Medical Research Council, Project Grants, $435,364

Research Interests

- Identification of key components of fruits & vegetables linked to vascular and musculoskeletal health

ASSOCIATE PROFESSOR SIMON LAWS

PhD, BSc
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Associate Professor Simon Laws is a research leader in understanding genomic (including genetic variation, epigenetic change and transcriptomic) influences on Alzheimer's Disease risk and progression and related phenotypes, such as rates of both change in memory performance and development of pathological features, both independently and in interaction with modifiable lifestyle factors. He has a proven track record in engaging and collaborating with international biotechnology companies such as Pfizer, Eisai, and Cytox Ltd.

A/Prof Laws is a member of the Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment (ISTAART), including membership of the Biofluid Based Biomarkers, Immunity and Neurodegeneration and the Reserve, Resilience and Protective Factors Professional Interest Areas (PIA). He is also a member of the Australian Society of Medical Research (ASMR), Australasian Neuroscience Society (ANS) and the Australian Society for Biochemistry and Molecular Biology (ASBMB). He is an associate editor of the Journal of Alzheimer's Disease.

A/Prof Laws has published 110 peer-reviewed journal articles and has attracted over $14m in research funding from both industry and nationally competitive funding bodies such as the National Health and Medical Research Council (NHMRC). He has been an invited speaker and chair to the Alzheimer's Association International Conference and Satellite Symposia (2017, 2019) and an invited speaker to the Alzheimer's Disease and Parkinson's Disease Conference (2013, 2017).

SELECTED PUBLICATIONS

Journal Articles

- Porter T, et al and Laws SM. COMT val158met is not associated with Aβ-amyloid and APOE ε4 related cognitive decline in cognitively normal older adults. IBRO Rep. 2019 6:147-152. doi: 10.1016/j.ibror.2019.05.001. PMID: 31080907.
- Spina S and Laws SM. Novel insights into the pathogenesis of normal-pressure hydrocephalus. Invited Editorial. Neurology doi.org/10.1212/WNL.0000000000007495
- Porter T, et al and Laws SM. A polygenic risk score weighted by episodic memory is associated with cognitive decline in preclinical Alzheimer's disease. Front. Aging Neurosci. 2018; 10:423. doi: 10.3389/fnagi.2018.00423 PMID:30620773
- Porter T, et al and Laws SM., for the AIBL research group. Cognitive Gene Risk Profile for the Prediction of Cognitive Decline in Presymptomatic Alzheimer's Disease. Personalized Med Psych 2018; 7-8:14-20. doi.org/10.1016/j.pmip.2018.03.001
- Porter T, et al and Laws SM. Utility of an Alzheimer's risk-weighted polygenic risk score for predicting rates of cognitive decline in preclinical Alzheimer's disease: a prospective longitudinal study. J Alzheimers Dis. 2018; 66(3):1193-1211. doi: 10.3233/JAD-180713. PMID: 30412495

GRANTS

- 2019 – 2021, Genetic and lifestyle susceptibility and resilience factors affecting rates of change in preclinical Alzheimer's Disease. National Health and Medical Research Council, Project Grant, $940,788
- 2018 – 2020, BRAIN-MEND: Biological Resource Analysis to Identify new mechanisms and phenotypes in Neurodegenerative Diseases. National Health and Medical Research Council, Boosting Dementia Grant, $849,967
- 2019 – 2020, Develop a systematic profiling of neurological conditions that will facilitate personalised treatment and streamline service delivery. Multiple Sclerosis Society of Western Australia, $600,000

Research Interests

- Understanding the Genomic Architecture of Rates of Change in AD-related Phenotypes
- Assessing the interaction of genomics and modifiable lifestyle factors and the impact on rates of change in AD-related phenotypes

PROFESSOR ROB NEWTON

PhD, MHMS, BSc(Hons)
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Professor Rob Newton is a world-leading expert on the beneficial impact of exercise in reducing the long-term health problems caused by cancer and its treatments. His research has driven major changes in clinical practice and his findings have been incorporated into national and international guidelines for the prescription of exercise medicine in cancer management. Current major research directions include: reducing decline in strength, body composition and functional ability in cancer patients; cancer related fatigue and the influence of exercise medicine on tumour biology.

Professor Newton has published over 380 refereed scientific journal articles, 450 conference abstracts and papers, two books, 16 book chapters with his work being cited 18,000 times. As of 2019 his research had attracted over $35m in competitive research funding. In 2018 he received the career achievement award from the Cancer Council WA and was a finalist for Western Australian of the Year. He was awarded WA Scientist of the Year in 2019.

SELECTED PUBLICATIONS

Journal Articles

- Newton, R.U., et al. Exercise Mode Specificity for Preserving Spine and Hip BMD in Prostate Cancer Patients. Medicine and Science in Sports and Exercise, 51(4): 607-614. 2019.
- Newton, R.U., et al. Intense exercise for survival among men with metastatic castrate-resistant prostate cancer (INTERVAL-GAP4): A multicentre, randomised, controlled phase III study protocol. BMJ Open, 8(5): doi:10.1136/bmjopen-2018-022899. 2018.
- Galvão, D.A., … and Newton, R.U. Exercise Preserves Physical Function in Prostate Cancer Patients with Bone Metastases. Medicine & Science in Sports & Exercise, 2017.
- Buffart L.M., … and Newton, R.U. Mediators of the resistance and aerobic exercise intervention effect on physical and general health in men undergoing androgen deprivation therapy for prostate cancer. Cancer, 120(2): 294-301, 2014.
- Galvão D.A., … and Newton, R.U. A Multicentre Year-long Randomised Controlled Trial of Exercise Training Targeting Physical Functioning in Men with Prostate Cancer Previously Treated with Androgen Suppression and Radiation from TROG 03.04 RADAR. European Urology 65(2014) 873-874.
- Hayes, S., R.U. Newton, R. Spence and D.A. Galvao. The Exercise and Sports Science Australia position statement: Exercise medicine in cancer management. Journal of Science and Medicine in Sport, Published online July 2019.
- Taaffe, D.R., R.U. Newton, N. Spry, D. Joseph, S.K. Chambers, R.A. Gardiner, B.A. Wall, P. Cormie, K.A. Bolam and D.A Galvão. Effects of Different Exercise Modalities on Fatigue in Prostate Cancer Patients Undergoing Androgen Deprivation Therapy: A Year-long Randomised Controlled Trial. European Urology, 72(2):293-299. 2017.

GRANTS

- 2018 - 2023, Can Exercise Delay Transition to Active Therapy in Men with Low Grade Prostate Cancer? A Multi-Centre Randomized Controlled Trial. National Health and Medical Research Council, Project Grants, $596,084
- 2016 – 2022, Centre for Research Excellence in Prostate Cancer Survivorship (CRE-PCS). National Health and Medical Research Council, Centres of Research Excellence, $1,130,516
- 2016 – 2023, Intense Exercise for Survival Among Men with Metastatic Castrate-Resistant Prostate Cancer (INTERVAL - MCRPC). Movember, $635,910

Research Interests

- Exercise medicine in the management of cancer
- Biological mechanisms by which targeted exercise medicine effects tumour development, metastasis and progression

PROFESSOR KEN KAZUNORI NOSAKA

PhD
Email: k.nosaka@ecu.edu.au

Prof Nosaka is currently the Director of Exercise and Sports Science in the School of Medical and Health Sciences at Edith Cowan University (ECU). Prof Nosaka worked in Japan for nearly 20 years before relocating to ECU in April 2004 as an associate professor and became a professor in December 2009. Over the past 15 years, his main responsibilities were to coordinate Postgraduate and Honours research programs (2007-2014), direct the Centre for Exercise and Sports Science Research (2007- 2012), and lead the Exercise and Sports Science discipline (2015-present). He received the Vice Chancellor's Award "Excellence in Research Supervision" in 2008, and the Vice Chancellor's Award "Excellence in Research" in 2012.

Prof Nosaka has published more than 260 peer-reviewed journal articles and his current h-index is 51 (Scopus), and about 80% of his articles are related to "eccentric exercise." He is known as an expert of eccentric exercise-induced muscle damage and adaptations. His research has been internationally recognised, and is considered as a world leader in the area of eccentric exercise. His other research interests include neuromuscular fatigue, strength and power training, exercise as medicine, thermoregulation, and muscle cramp. He has established collaborations with numerous institutes nationally and internationally, and is actively involved in several international collaborative research projects; more than 70% of his publications include international collaborators in France, Taiwan, Japan, Germany, Chile, Brazil and others.

SELECTED PUBLICATIONS

Journal Articles

- Katsura Y, Takeda N, Hara T, Takahashi S, Nosaka K. Comparison between eccentric and concentric resistance exercise training without equipment for changes in muscle strength and functional fitness of older adults. European Journal of Applied Physiology 119(7): 1581-1590, 2019.
- Kan B, Speelman C, Nosaka K. Cognitive demand of eccentric versus concentric cycling and its effects on post-exercise attention and vigilance. European Journal of Applied Physiology 119(7): 1599-1610, 2019.
- Tseng WC, Nosaka K, Tseng KW, Chou TY, Chen TC. Contralateral effects by unilateral eccentric versus concentric resistance training. Medicine and Science in Sports and Exercise 2019 Sep 12. [Epub ahead of print]
- Chen TC, Lin MJ, Chen HL, Yu HI, Nosaka K. Contralateral repeated bout effect of the knee flexors. Medicine and Science in Sports and Exercise 50: 542-550, 2018.
- Chen TC, Lin MJ, Chen HL, Lai JH, Yu HI, Nosaka K. Muscle damage protective effect by two maximal isometric contractions on maximal eccentric exercise of the elbow flexors of the contralateral arm. Scandinavian Journal of Medicine and Science in Sports 28: 1354-1360, 2018.
- Chen TC, Hsieh C-C, Tseng K-W, Ho C-C, Nosaka K. Effects of descending stair walking on health and fitness of elderly obese women. Medicine and Science in Sports and Exercise 49: 1614-1622, 2017.

GRANTS

- 2019 -2021 Research Network for Undersea Decision Superiority. Implementation of routine "eccentric" exercises to maintain health and fitness, improve vigilance and attention, and optimise decision making in the submarine. $474,585
- 2019 - 2021 NHMRC Project Grant. Exercise as medicine for advanced heart failure: A novel intervention to improve outcomes. $665,585
- 2016 – 2018 Otsuka Pharmaceutical Factory Inc.: Effect of water containing electrolytes (OS-1) versus spring water ingestion in dehydration induced by exercise in the heat on calf muscle cramp assessed by electrical train stimulation. $81,160

Research Interests

- Mechanisms underpinning eccentric exercise-induced muscle damage
- Eccentric exercise training effects on patients with chronic diseases, older individuals, children and athletes
- Cross-education effects by eccentric exercise training
- Muscle cramp

PROFESSOR JOHN K. OLYNYK

DMed
Email: j.olynyk@ecu.edu.au

Professor John K. Olynyk is recognised as one of the top seven global experts in Haemochromatosis and is an adviser to Haemochromatosis Australia, the peak consumer group representing patients with this inherited disease. He is currently Head of Gastroenterology and Hepatology at Fiona Stanley and Fremantle Hospital Group – a new $2.5 billion dollar quaternary hospital. He has been on the council of the Gastroenterology Society of Australia and has occupied senior positions including Chair of Australian Liver Association, Chair of Research Council, and Treasurer.

In 2013 he was awarded a Fellowship of the American Association for the Study of Liver Diseases for contributions to research in the field of Hepatology. In 2016 Professor Olynyk was awarded the Distinguished Research Prize by the Gastroenterology Society of Australia for contributions to research in the fields of Gastroenterology and Hepatology.

Professor Olynyk has had continuous National Health and Medical Research Council Project Grant funding since 2000.

SELECTED PUBLICATIONS

Journal Articles

- Genz B, Coleman MA, Irvine KM, Kutasovic JR, Miranda M, Gratte FD, Tirnitz-Parker JEE, Olynyk JK, Calvopina DA, Weis A, Cloonan N, Robinson H, Hill MM, Al-Ejeh F, Ramm GA. Overexpression of miRNA-25-3p inhibits Notch1 signaling and TGF-B-induced collagen expression in hepatic stellate cells. Scientific Reports. 2019; 9:1-18.
- Tirnitz-Parker JEE, Forbes SJ, Olynyk JK, Ramm GA. Cellular plasticity in liver regeneration – Spotlight on cholangiocytes. Hepatol. 2019; 69:2286-2289.
- Bazerbachi F, Haffar S, Wang Z, Gonzalez JC, Arias-Loste MT, Crespo J, Murad SD, Ikram MA, Olynyk JK, et al. Range of normal liver stiffness and predictors of suspected advanced fibrosis in apparently healthy individuals. CGH 2019; 17:54-64.
- Hart R, Doherty D, Mori T, Adams L, Huang R-C, Minaee N, Handelsman D, McLachlan R, Norman RJ, Dickson J, Olynyk JK, Beilin L. Features of the metabolic syndrome in late adolescence are associated with impaired testicular function at 20 years of age. Hum Reprod. 2019:34:389-402.
- Adris N, Hazeldine S, Bentley P, Trinder D, Chua ACG, Powell L, Ramm LE, Ramm G, Olynyk JK. Detection of HFE Haemochromatosis in the clinic and community using standard erythrocyte tests. Blood Cells Mol Dis. 2019;74:18-24.
- Ayonrinde OT, Adams LA, Mori TA, Beilin LJ, de Klerk N, Pennell CE, Olynyk JK. Sex differences between parental pregnancy characteristics and non-alcoholic fatty liver disease in adolescents. Hepatology 2018; 67:108-122.

GRANTS

- 2019 – 2022, Targeting the TWEAK/Fn14 signalling pathway as a novel therapeutic strategy to prevent chronic liver disease progression. National Health and Medical Research Council, Project Grants, $997,486
- 2017 – 2018, Translating disordered iron metabolism and liver injury research into clinical practice. National Health and Medical Research Council, Practitioner Fellowship, $72,174
- 2015-2017, Role of non-transferrin bound iron in iron overload disease. National Health and Medical Research Council, Project Grants, $648,475
- 2015 – 2017, Cellular cross-talk between liver progenitor cells and hepatic stellate cells is required for hepatic fibrogenesis. National Health and Medical Research Council, Project Grants, $599,154

Research Interests

- Liver injury and carcinogenesis – clinical and basic science
- Iron overload disorders
- Nonalcoholic fatty liver disease

PROFESSOR THOMAS RILEY

PhD
Email: t.cooper@ecu.edu.au

Professor Thomas Riley is a leading researcher in healthcare infections, mainly the diagnosis, pathogenesis and epidemiology of Clostridium difficile infection. He was made a Fellow of the Australian Society for Microbiology in 1989 on the basis of his contribution to microbiology in Australia. He gained Membership of the Royal College of Pathologists (MRCPath) on the basis of published works and was elevated to Fellowship status after 5 years in 1997 instead of the usual 12 years due to his publication record. He was elected to Fellowship of the American Academy of Microbiology in 2000, and later to Fellowship of the Society of Healthcare Epidemiologists of America. In 2010, he was elected a Founding Fellow of the Faculty of Science of the Royal College of Pathologists of Australasia based on his contributions to microbiology.

Professor Riley has held many editorial positions including: Editorial Board member, Healthcare Infection, 2000 to present; Editor, Journal of Medical Microbiology, 1995 to 2008; Editorial Board member, Journal of Antimicrobial Chemotherapy, 2001-2007; Editor, Reviews in Medical Microbiology, 2002 to present; Editor, Clinical Microbiology and Infection, 2004-2006; Associate Editor, Anaerobe 2010-13; Editorial Board member, International Journal of Antimicrobial Agents and Chemotherapy, 2010 to present; Editorial Board member, European Journal of Clinical Microbiology & Infectious Diseases, 2010 to present; Scientific Committee, Clinical Microbiology and Infection, 2010 to present; Editor, Antimicrobial Resistance & Infection Control, 2012 to present. Professor Riley has 400 peer-reviewed publications with over 20,000 citations.

SELECTED PUBLICATIONS

Journal Articles

- Roshan, N., Hammer, K.A. and Riley, T.V. 2018. Non-conventional antimicrobial and alternative therapies for the treatment of Clostridium difficile infection. Anaerobe 49: 103-111.
- Riley T.V., Lyras, D.L. and Douce, G.R. 2019. Status of vaccine research and development for Clostridium difficile. Vaccine 2019 Mar 19 doi: 10.1016/j.vaccine.2019.02.052.
- Furuya-Kanamori, L., Clements, A.C.A., Foster, N.F., Huber, C.A., Harris-Brown, T., Yakob, L., Paterson, D.L. and Riley, T.V. 2017. Asymptomatic Clostridium difficile colonization in two Australian tertiary hospitals, 2012–2014: A prospective, repeated cross-sectional study. Clin Microbiol Infect 23: 48.e1–48.e7.
- Knight, D.R., Squire, M.M., Collins, D.A. and Riley, T.V. 2017. Genome analysis of Clostridium difficile PCR ribotype 014 lineage in Australian pigs and humans reveals a diverse genetic repertoire and signatures of long-range interspecies transmission. Frontiers in Microbiology 7: 2138. doi: 10.3389/fmicb.2016.02138.
- Moono, P., Lim, S-C. and Riley, T.V. 2017. High prevalence of toxigenic Clostridium difficile in public space lawns in Western Australia. Scientific Reports 7: 1196 DOI: 10.1038/srep41196.
- Riley, T.V., Collins, D.A., Karunakaran, R., Kahar, M.A., Adnan, A., Hassan, S.A., Zainul, N.H., Mohd Rustam, F.R., Abd Wahab, Z., Ramli, R., Lee, Y.Y and Hassan, H. 2018. High prevalence of toxigenic and non-toxigenic Clostridium difficile in Malaysia. J Clin Microbiol 6: e00170-18.

GRANTS

- 2017 – 2020, Reducing hospital-identified Clostridium difficile infection by reducing environmental sources of C. difficile. Department of Health WA, Research Translation Projects, $380,787
- 2017 -2019, From lead compounds to potential therapeutics: drugs to treat Clostridium difficile infections. National Health and Medical Research Council, Project Grants, $523,000
- 2011 -2016, Centre of Research Excellence in Reducing Healthcare Associated Infection. National Health and Medical Research Council, $2,495,795

Research Interests

- Clostridium difficile infection: diagnosis, pathogenesis and epidemiology
- Infectious diseases diagnostics
- Infectious diseases epidemiology

PROFESSOR DENNIS TAAFFE

PhD, DSc, MPH, MSc, BSc, DipTeach
Email: d.taaffe@ecu.edu.au

Professor Dennis Taaffe is an Accredited Exercise Scientist and Accredited Exercise Physiologist with Exercise and Sports Science Australia (ESSA) who has been undertaking exercise trials for over 25 years, predominantly examining the beneficial effects of this activity on the musculoskeletal system and physical function in older persons and men with prostate cancer.

Professor Taaffe has published over 150 peer-reviewed journal articles and has over 200 conference presentations. His work has appeared in a number of high ranking discipline journals including European Urology, Journal of Clinical Oncology, Journal of Bone and Mineral Research, Journal of Clinical Endocrinology and Metabolism, Journal of Gerontology: Medical Sciences, Osteoporosis International, Medicine and Science in Sports and Exercise, and the Journal of the American Geriatrics Society, and has been cited over 8,000 times (Scopus) with a h-index of 50. As a Chief Investigator he has attracted over $3.5m in research funding and currently serves on the Editorial Boards for the Journal of Gerontology Medical Sciences, the Journal of Science and Medicine in Sport, and the Journal of Frailty and Aging.

SELECTED PUBLICATIONS

Journal Articles

- Taaffe DR, Galvão DA, Spry N, Denham J, Joseph D, Chambers SK, Gardiner RA, Hayne D, Cormie P, Shum DHK, Newton RU. Immediate versus delayed exercise in men initiating androgen deprivation: Effects on bone density and soft tissue composition. BJU International 2019;123:261-269.
- Newton RU, Galvão DA, Spry N, Joseph D, Chambers SK, Gardiner RA, Wall BA, Bolam KA, Taaffe DR. Exercise mode specificity preserving spine and hip BMD in prostate cancer patients. Medicine and Science in Sports and Exercise 2019;51:607-614.
- Taaffe DR, Buffart LM, Newton RU, Spry N, Denham J, Joseph D, Lamb D, Chambers SK, Galvão DA. Time on androgen deprivation therapy and adaptations to exercise: secondary analysis from a 12-month randomized controlled trial in men with prostate cancer. BJU International 2018;121:194-202.
- Galvão DA, Taaffe DR, Spry N, Cormie P, Joseph D, Chambers SK, Chee R, Peddle-McIntyre C, Hart NH, Baumann FT, Denham J, Baker M, Newton RU. Exercise preserves physical function in prostate cancer patients with bone metastases. Medicine and Science in Sports and Exercise 2018;50:393-399.
- Taaffe DR, Newton RU, Spry N, Joseph D, Chambers SK, Gardiner RA, Wall B, Cormie P, Bolam KA, Galvão DA. Effects of different exercise modalities on fatigue in prostate cancer patients undergoing androgen deprivation therapy: a year-long randomised controlled trial. European Urology 2017;72:293-299.
- Beck BR, Daly RM, Faitarone Singh MA, Taaffe DR. Exercise and Sports Science Australia (ESSA) position statement on exercise prescription for the prevention and management of osteoporosis. Journal of Science and Medicine in Sport 2017;20:438-445.

GRANTS

- 2018 – 2023, Can Exercise Delay Transition to Active Therapy in Men with Low Grade Prostate Cancer? A Multi-Centre Randomized Controlled Trial. National Health and Medical Research Council, Project Grants, $596,084
- 2018 -2019, An exploratory study to determine if exercise can impact the gut microbiota composition of men receiving androgen suppression therapy for prostate cancer. Prostate Cancer Foundation of Australia, Grant, $98,875
- 2014 -2018, Improving sexual health in men with prostate cancer: randomised controlled trial of exercise and psychosexual therapies. National Health and Medical Research Council, Project Grants, $565,380

Research Interests

- Exercise medicine for cancer patients and survivors
- Pre-surgical exercise to enhance patient outcomes
- Sport medicine for older adults

PROFESSOR JANET TAYLOR

MD, MBioMedEng, MBBS
Email: janet.taylor@ecu.edu.au

Professor Janet Taylor's research area is the control of human movement. It focuses on how the motor pathway changes in response to activity such as stimulation of the brain or nerves, training or practice of motor tasks, and fatiguing exercise. Her aim is to better understand how repetitive activity alters the nervous system in health and disease, and so contributes to improvements in motor performance with practice but to decrements in performance with muscle fatigue. She holds an appointment as Honorary Principal Research Scientist at Neuroscience Research Australia.

Professor Taylor has over 190 publications attracting more than 8500 citations and has been awarded over $13m in peer-reviewed funding. She has been a Senior Editor (2016-2019) and Reviewing Editor (2013-2016) for the Journal of Physiology, an Associate Editor for Exercise and Sports Science Reviews (2016-2018), and a member of the Editorial Board for Journal of Applied Physiology (2006-2016). In 2015-2017, she was Chair of Commission I: Locomotion for the International Union of Physiological Sciences.

SELECTED PUBLICATIONS

Journal Articles

- Kavanagh JJ, McFarland AJ, Taylor JL. (2019) Enhanced availability of serotonin increases activation of unfatigued muscle but exacerbates central fatigue during prolonged sustained contractions. Journal of Physiology. 597, 319-322.
- Dongés SC, D'Amico JM, Butler JE, Taylor JL. (2018) Involvement of N-methyl-D-aspartate receptors in plasticity induced by paired corticospinal-motoneuronal stimulation in humans. Journal of Neurophysiology. 119, 652-661.
- D'Amico JM, Butler AA, Héroux ME, Cotel F, Perrier JM, Butler JE, Gandevia SC, Taylor JL. (2017) Human motoneurone excitability is depressed by activation of serotonin 1A receptors with buspirone. Journal of Physiology. 595, 1763-1773.
- Nuzzo JL, Barry BK, Jones MD, Gandevia SC, Taylor JL. (2017) Effects of four weeks of strength training on the corticomotoneuronal pathway. Medicine and Science in Sports and Exercise 49, 2286-2296.
- Taylor JL, Amann M, Duchateau J, Meeusen R, Rice CL. (2016) Neural contributions to muscle fatigue: from the brain to the muscle and back again. Medicine and Science in Sports and Exercise 48, 2294-2306.
- Nuzzo JL, Barry BK, Gandevia SC, Taylor JL. (2016) Acute strength training increases responses to stimulation of corticospinal axons. Medicine and Science in Sports and Exercise 48, 139-150.
- Kennedy DS, Fitzpatrick SC, Gandevia SC, Taylor JL. (2015) Fatigue-related firing of muscle nociceptors reduces voluntary activation of ipsilateral but not contralateral lower limb muscles. Journal of Applied Physiology 118, 408-418.
- Taylor JL & Martin PG. (2009) Voluntary motor output is altered by spike-timing-dependent changes in the human corticospinal pathway. Journal of Neuroscience 29, 11708-11716.

GRANTS

- 2014-2018, Motor Impairment. National Health and Medical Research Council, Program Grants, $6.7m
- 2013 – 2015, Electrical Stimulation with a "Random Noise" Pattern: A New Approach for the Treatment of Depression. National Health and Medical Research Council, Project Grant, $523,160
- 2012 – 2016, Research Fellowship. National Health and Medical Research Council, $611,574

Research Interests

- Human neurophysiology, particularly the motor system
- The role of the nervous system in muscle fatigue
- The influence of descending neuromodulators on the spinal motoneurones
- Changes in the nervous system with motor training or practice
- Plasticity in the human motor system at the level of the spinal cord

PROFESSOR WEI WANG

PhD, MD, FFPH, FRSB
Email: wei.wang@ecu.edu.au

In 2005 Professor Wei Wang was elected as a Fellow, Faculty of Public Health, Royal College of Physicians (FFPH), in 2016 as a Fellow, Royal Society of Biology (FRSB), and in 2017 as a Fellow, Royal Society of Medicine (FRSM) of the United Kingdom.

Professor Wei Wang has published over 200 scientific papers in prestigious journals including Science, Nature Genetics and The Lancet, and has given numerous Plenary Lectures at International Conferences. He was one of the founding members of the Global Health Epidemiology Reference Group. He is the Australia and China National Representative for European Association of Preventive, Predictive and Personalised Medicine (EPMA). Prof Wang is one of the Founding Members of Human Glycome Project.

Professor Wei Wang is the chief editor of the Journal of Translational Metabolic Syndrome Research, academic editor of PloS ONE, associate editor of EPMA Journal, and regional editor of Journal of Global Health, OMICS: A Journal of Integrative Biology and Journal of Human Hypertension.

SELECTED PUBLICATIONS

Journal Articles

- Cao WJ, Li XG, Zhang XY, Zhang J, Sun Q, ... Wang W. No causal effect of telomere length on ischemic stroke and its subtypes: a mendelian randomization study. Cells 2019;8:59. doi:10.3390/cells8020159.
- Garcia M, Downs J, Russell A, Wang W. Impact of biobanks on research outcomes in rare diseases: a systematic review. Orphanet J Rare Dis 2018;13(1):202-214.
- Keser T, Gornik I, Vuckovic F, Selak N, Pavic T, Lukic E, ..., Wang W, Gornik O. Increased plasma N-glycome complexity is associated with higher risk of type 2 diabetes. Diabetologia 2017;60(12):2352-2360.
- Russell A, Simurina M, Garcia M, Novokmet M, Wang Y, Rudan, ..., Wang W. The N-glycosylation of immunoglobulin G as a novel biomarker of Parkinson's disease. Glycobiol 2017;27(5):501-510.
- Wang YX, Adua E, Russell A, Roberts P, Ge SQ. Zeng Q, Wang W. Glycomics and its application potential in precision medicine. Science 2016 doi.org/10.1126/science.354.6319.1601-b.
- Vuckovic J. Kristic I. Gudelj M. Teruel T. Kese, M. Pezer M, ..., Wang W, Lauc G. Association of Systemic Lupus Erythematosus with Decreased Immunosuppressive Potential of the IgG Glycome. Arthritis & Rheum 2015;67(11):2978- 2989.
- Lauc G, Huffman JE, Pucic M, Zgaga L, Adamczyk B, Muzinic A, ..., Wang W, ..., Rudan I. Loci associated with N-glycosylation of human immunoglobulin G show pleiotropy with autoimmune diseases and haematological cancers. PLoS Genet 2013;91:e1003225.
- Chan KY, Wang W, Wu JJ, Liu L, Theodoratou E, Car J, ..., Rudan I. Epidemiology of Alzheimer's disease and other forms of dementia in China between 1990 and 2010. Lancet 2013;381:2016–2023.

GRANTS

- 2018-2022, Prevention of dementia using mobile phone applications (PRODEMOS). European Commission EU-Horizon €2,999,097.5
- 2016 - 2021, N-glycan profiling as a risk stratification biomarker for type 2 diabetes. National Health and Medical Research Council, International Joint Call, $820,825.
- 2013-2018, Pain-Omics - Multi-dimensional omics approach to stratification of patients with low back pain. European Commission, Grant - Seventh Framework Programme (EU-FP7), AUD$5,998,886.

Research Interests

- Genetic epidemiology (biomarker screening, validation and trail)
- Global health (disease burden, and chronic diseases diagnosis & management)
- Genomics and glycomics (bioinformatics, DNA sequencing and N-Glycan profiling)

ASSOCIATE PROFESSOR MANDY STANLEY

PhD, MHlthSc(OT), BHlthSc(OT)
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Associate Professor Mandy Stanley has extensive academic experience and is a recognised thought leader in occupational therapy and occupational science. She is Associate Editor for the Journal of Occupational Science and President of the Editorial Board. Mandy is known for her expertise in qualitative research methodologies, having co-edited the first text on qualitative research methodologies for occupational science and occupational therapy with Dr Shoba Nayar. Mandy currently has funded projects related to the dignity of risk, profiling of neurological conditions for personalised treatment, and a NHMRC grant examining the effectiveness of pre-discharge occupational therapy home visits following stroke. Broadly speaking Mandy's research relates to the participation in everyday occupations for well-being, particularly for older people or those living with a disability with an emerging profile related to sleep.

Research Interests

- Qualitative research methodologies
- Well-being
- Participation
- Community mobility
- Risk

SELECTED PUBLICATIONS

Books

- Nayar, S., & Stanley, M. (Eds.) (2015). Qualitative research methodologies for occupational science and therapy. Oxon., UK: Routledge.

Journal Articles

- Hercegovac, S., Kernot, J., & Stanley, M. (2019). How qualitative case study methodology informs occupational therapy practice: A scoping review.
- Luker, J., Worley, A., Stanley, M., Uy, J. Watt, A. & Hillier, S. (2019). The evidence for services to avoid or delay residential aged care admission: A systematic review . BMC Geriatrics, 19 (1). Art. no. 217.
- Ong, M., Baker, A., Aguilar, A., & Stanley, M. (2019). The meanings attributed to community gardening: A qualitative study. Health and Place, 59, art no. 102190
- Roberts, A., Greenwood, D., Stanley, M., Humberstone, C., Iredale, F., & Raynor, A. (2019). Coach knowledge in talent identification: A systematic review and meta-synthesis. Journal of Science and Medicine in Sport,
- Lynch, H., & Stanley, M. (2018). Beyond words: Using qualitative video methods for researching occupation with children. OTJR: Occupation, Participation and Health. 38 (1). 56-66. doi:10.1177/1539449217718504
- Cahill, M., Robinson, K., Pettigrew, J., Galvin, R., & Stanley, M. (2018). Qualitative synthesis: A guide to meta-ethnography. British Journal of Occupational Therapy, 81, 129-137.
- Scanlan, J. N., Lannin, N. A., Hoffmann, T., Stanley, M., & McDonald, R. (2018). Impact of adjusting for inter-rater validity in conference abstract ranking and selection process. Australian Journal of Occupational Therapy 65 (1), 54-62.
- Sellar, B., Murray, C., Stanley, M., Stewart, H., Hipp, H., & Gilbert Hunt, S. (2018). Mapping an Australian occupational therapy curriculum: Linking intended learning outcomes with entry level competencies. Australian Occupational Therapy Journal, 65 (1), 35-45.
- Berndt, A., Murray, C., Kennedy, K., Stanley, M., Gilbert Hunt, S. (2017). Effectiveness of distance learning strategies for continuing professional development (CPD) for rural allied health practitioners: A systematic review. BMC Medical Education, 17:117 doi: 10.1186/s12909-017-0949-5

GRANTS

- 2019 – 2020 Develop a systematic profiling of neurological conditions that will facilitate personalised treatment and streamline service delivery, Multiple Sclerosis Society of Western Australia, $600,00
- 2018 – 2021 NHMRC Project grant, HOME project CIJ $1.7
- 2017 – 2018 Lifetime Support Authority, Dignity of risk following brain injury CIA $90,000

ASSOCIATE PROFESSOR ERIN GODECKE

PhD, BSc
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We spend over half of our waking hours talking, texting, reading, writing, listening, understanding and interacting. It's not until we lose these functions that we realise how critical they are. Up to 30% of stroke survivors have aphasia – a communication impairment that negatively effects speaking, understanding, reading and writing. Many of the 15,000 Australians each year with aphasia do not receive documented evidence best practice stroke care and communication therapy and there is currently no mechanism to monitor or improve these services.

Associate Professor Erin Godecke, a Vice Chancellor's Professorial Fellow at Edith Cowan University, Course Coordinator for the Post Graduate Neurorehabilitation courses and a clinical Speech Pathologist at Sir Charles Gairdner Hospital has established a research program that is enhancing clinical services for people with communication impairment following stroke and brain injury. Her work focusses on enhancing natural brain recovery processes through early speech and language rehabilitation and improving services for long term recovery. A/Prof Godecke's national and international research includes interdisciplinary stroke and aphasia studies investigating the clinical and health-economic effects of very early and chronic aphasia rehabilitation; the benefits and barriers to enriching communicatively enhanced hospital environments and improving therapy techniques in interdisciplinary stroke rehabilitation.

SELECTED PUBLICATIONS

Journal Articles

- Godecke E, Rai T, Cadilhac DA, Armstrong E, Ciccone N, Middleton S, Holland A, Whitworth A, Rose M, Ellery F, Hankey GJ, Bernhardt J. Statistical analysis plan (SAP) for the Very Early Rehabilitation in Speech (VERSE) after stroke trial: an international 3-arm clinical trial to determine the effectiveness of early, intensive, prescribed, direct aphasia therapy. International Journal of Stroke, 2018, 13(8):863-880. DOI: 10.1177/1747493018790055
- Brogan E, Ciccone N, Godecke E. Treatment Fidelity in Aphasia Randomized Controlled Trials. Aphasiology; On-line, 6th Feb 2019. DOI: 10.1080/02687038.2019.1576442
- Brady M, Ali M, VandenBerg K, Williams LJ, Williams LR, Abo M, Becker F, Bowen A, Brandenburg C, Breitenstein C, Bruehl S, Copland DA, Cranfill TB, di Pietro-Bachmann M, Enderby P, Fillingam J, Galli FL, Gandolfi M, Glize B, Godecke E et al., 2019. RELEASE: a protocol for a systematic review based, individual participant data, meta- and network meta-analysis, of complex speech-language therapy interventions for stroke-related aphasia, Aphasiology: doi.org/10.1080/02687038.2019.16430032019
- Rose M, Copland D, Nickles L, Togher L, Meinzer M, Rai T, Cadilhac DA, Kim J, Foster A, Carragher M, Hurley M, Godecke E. Constraint induced Or Multi-modal Personalised Aphasia REhabilitation (COMPARE): A randomised controlled trial for stroke related chronic aphasia. International Journal of Stroke. 2019 DOI: 10.1177/1747493019870401
- Rose ML, Ali M, Elders A, Godwin J, Karachalia Sandri A, Williams LJ, Williams LR, VandenBerg K, Abel S, Abo M, Becker F, Bowen A, Brandenburg C, Breitenstein C, Copland D, Cranfill T, Di Pietro-Bachmann M, Enderby P, Fillingham J, Galli F, Gandolfi M, Glize B, Godecke E, et al., (2018) Tidier descriptions of speech and language therapy interventions for people with aphasia; consensus from the RELEASE Collaboration, Aphasiology, 32:sup1, 183-186.

GRANTS

- 2019 - 2021 Health Research Council of New Zealand App 19-624, Measuring perceived Task Difficulty during rehabilitation. $99,432
- 2019 - 2023 National Health and Medical Research Council, Centre of Research Excellence, 2019-2023: $2,495,792.70

Research Interests

- Clinical trials and treatment efficacy
- Treatment fidelity in clinical studies
- Communication Environmental Enrichment
- Interdisciplinary stroke recovery research

DR CLAUS CHRISTOPHERSON

PhD, MSc
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Dr Christophersen is a molecular microbiologist specialising in the role and impact of the gut microbiome in health. He participates in multi-disciplinary research to understand how diets or supplements can improve health or prevent diseases. He has a special interest in the ability of resistant starches, and recently exercise, to improve gut health. He also leads the WA Human Microbiome Collaboration Centre at Curtin University.

He currently work on multiple research projects and received more than 1.5M in grant funding over the last 5 years. He is also represented on the Scientific Committee for the ORIGINS study, ORIGINS biobank governance committee, Chair of the "P4 Omics and Systems Biology Research Interest Group" under the ORIGINS cohort study, Co-chair of the Western Australian Biobank (WAHTN initiative) subcommittee on Quality Assurance and on the Scientific advisory board for eDNA frontiers .

Dr Christophersen also engage in research translation. He is the co-author of the cookbook "Gut Feeling: Mindful menus for the Microbiome" which explain the importance of a healthy gut microbiome and provides a 14 day menu to get a healthy gut. This research and the cookbook was featured on an episode of "Ask the doctors" on ABC TV.

SELECTED PUBLICATIONS

Journal Articles

- Gopalsamy, GL., Mortimer, EK., Greenfield, P., Bird, AR., Young, GP., Christophersen, CT. (2019). Resistant Starch is Actively Fermented by Infant Faecal Microbiota and Increases Microbial Diversity. Nutrients, 11(6), 1345. https://doi.org/10.3390/nu11061345.
- Genoni, A., Christophersen, CT., Lo, J., Coghlan, M., Boyce, MC., Bird, A., Lyons-Wall, P., Devine, A. (2019) Long term Paleolithic diet is associated with lower resistant starch intake, diferent gut microbiota composition and increased serum TMAO concentrations. European Journal of Nutrition https://doi.org/10.1007/s00394-019-02036-y
- Wang, Y., Mortimer, EK., Katundu, KGH., Kalanga, N., Leong, LEX., Gopalsamy, GL., Christophersen, CT., Richard, AC., Shivasami, A., Abell, GCJ., Young, GP., Rogers, GB. (2019). The capacity of the faecal microbiota from Malawian infants to ferment resistant starch. Frontiers in Microbiology. https://doi.org/10.3389/fmicb.2019. https://doi.org/10.3389/fmicb.2019.0145901459
- Newton, R., Christophersen, CT., Fairman, C., Hart, N., Taaffe, D., Broadhurst, D., Devine, A., Chee, R., Tang, C., Spry, N., Galvao, D. (2019). Does exercise impact gut microbiota composition in men receiving androgen deprivation therapy for prostate cancer? A single-blinded, two-armed, randomised controlled trial. BMJ Open, 9(4), e024872, DOI: http://dx.doi.org/10.1136/bmjopen-2018-024872.
- Halmos, EP., Christophersen, CT., Bird, AR., Shepherd, SJ., Gibson, PR., Muir, JG. (2015). Diets that differ in their FODMAP content alter the colonic luminal microenvironment. GUT, vol. 64, issue 1, page 93-100. DOI:10.1136/gutjnl-2014-307264.
- James, SL, Christophersen, CT., Bird, AR., Conlon, MA., Rosella, O., Muir, JG., Gibson, PR. (2015). Abnormal fibre usage in UC in remission. GUT, vol. 64, issue 4, page 562-570. DOI:10.1136/gutjnl-2014-307198.

GRANTS

- 2020-2021, Restoring Neonatal Gut Biodiversity and Mucosal Immunity After Postnatal Antibiotics Exposure (RESTORE) trial. The WA Child Research Fund (WACRF) 2019 (Round 7), $186,222
- 2020-2021, Gateway to allergy prevention: Promoting an immunomodulatory breastmilk profile with maternal prebiotic supplementation. The WA Child Research Fund (WACRF) 2019 (Round 7), $247,597

Research Interests

- How diets or diet supplements are used to manipulate the adult gut microbiome for improved health
- Dietary strategic to improve gut health in Ulcerative Colitis and Irritable Bowel Syndrome sufferers
- The development and improvement of the infant gut microbiome and its effect on allergic diseases
- Investigating the role of the human gut microbiome using a "Systems Biology approach" in multi-disciplinary team to understand its impact on health

ASSOCIATE PROFESSOR DEBORAH HERSH

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Associate Professor Deborah Hersh has a research and teaching role in the Speech Pathology course, and coordinates the Honours Program. She has 30 years of clinical, research and teaching experience in speech pathology in the UK and Australia, is a Fellow of Speech Pathology Australia, Deputy Chair of the Australian Aphasia Association, and Associate Editor of the International Journal of Speech-Language Pathology. A/Prof Hersh has over 90 refereed journal articles and book chapters, over 1200 citations, and an H-Index of 18. She has been a chief investigator on grants together worth over $3m and presents nationally and internationally in the areas of aphasia rehabilitation, professional client relationships, person-centred practice, qualitative research approaches, and acquired communication disorders in Aboriginal Australians following stroke and brain injury.

SELECTED PUBLICATIONS

Journal Articles

- Armstrong, E., Coffin, J., McAllister, M., Hersh, D., Katzenellenbogen, J. M., Thompson, S. C., Ciccone, N., Flicker, L., Cross, N., Arabi, L., Woods D., & Hayward, C. (2019). "I've got to row the boat on my own, more or less": Aboriginal Australian experiences of traumatic brain injury. Brain Impairment.
- Hersh, D., Armstrong, E., McAllister, M., Ciccone, N., Katzenellenbogen, J., Coffin, J., Thompson, S., Hayward, C., Flicker, L., Woods, D. (2019 early online). General practitioners' perceptions of their communication with Australian Aboriginal patients with acquired neurogenic communication disorders. Patient Education and Counseling.
- Lanyon, L., Hersh, D., Bickford, J., Baker, J., Nang, C., Rose, M. & Worrall, L. (2019). Using in-depth, semi-structured interviewing. In: R. Lyons & L. McAllister (Eds.) Qualitative Research in Communication Disorders: An Introduction for Students and Clinicians. Guildford: J&R Press, Ltd.
- Hersh, D. (2018). From Individual to Global: Human Rights and Aphasia. International Journal of Speech-Language Pathology, 20(1), 39-43. doi:10.1080/17549507.2018.1397749
- Hersh, D., Wood, P., & Armstrong, E. (2018). Informal aphasia assessment, interaction and the development of the therapeutic relationship in the early period after stroke. Aphasiology, 32(8), 876-901. DOI: 10.1080/02687038.2017.1381878
- Hersh, D. (2016). Therapy in transit: Managing aphasia in the early period post stroke. Aphasiology, 30/5, 509-516.
- Hersh, D., Godecke, E. Armstrong, E., Ciccone, N., & Bernhardt, J. (2016). "Ward Talk": nurses' interaction with people with and without aphasia in the very early period post stroke. Aphasiology, 30/5, 609-628. http://dx.doi.org/10.1080/02687038.2014.933520
- Hersh, D. (2015). "Hopeless, sorry, hopeless": Co-constructing narratives of care with people who have aphasia post-stroke. Topics in Language Disorders, 35/3, 219-236.

GRANTS

- 2018-2021: Linguistic Underpinnings of Narrative in Aphasia (LUNA): A proof-of-concept study of a novel discourse treatment for aphasia using personal narratives. UK Stroke Association Project Grant, £205, 257.
- 2018: Yarning together: Developing a culturally secure rehabilitation approach for Aboriginal Australians after brain injury. Lowitja Institute Research Fund. $154,005.
- 2016: Healing Right Way: Enhancing rehabilitation services for Aboriginal Australians after brain injury. NH&MRC Partnership Grant, $906, 444.60. (Partner cash & in-kind contributions $1087,757.00)

Research Interests

- Experiences of aphasia treatment termination for clients, families and clinicians
- Assessment and goal setting in aphasia rehabilitation
- Experiences for people with aphasia in acute care
- Group approaches for people with aphasia and families
- Social approaches and empowerment in aphasia
- Gaining informed consent from people with aphasia/ethical issues
- The therapeutic relationship and professional boundaries
- Qualitative research methodologies in speech pathology
- Experiences of acquired communication disorders for Aboriginal Australians after stroke and traumatic brain injury

PROFESSOR JACQUES OOSTHUIZEN

PhD, BTech
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Jacques is Professor of Occupational and Environmental Health and the Associate Dean of Public Health and Occupational Health and Safety in the School of Medical and Health Sciences. Jacques is a certified occupational hygienist and he teaches and conducts research in the areas of occupational hygiene and epidemiology. He has been an academic in the area of Environmental Health and Occupational Hygiene since 1989, initially in South Africa. In 1999 Jacques was employed at Central Queensland University and in 2001 he relocated to ECU. He is a member of The Australian Institute of Occupational Hygienists, Environmental Health Australia and the Safety Institute of Australia.

SELECTED PUBLICATIONS

Journal Articles

- Maté, J. Siegel, R., Oosthuizen, J. and Watson, C. (2019). Effects of ad libitium liquid and ice slurry ingestion on core temperature during physical activity. Journal of Health, Safety and Environment, 34(3), 301-314.
- Nunfam, V., Oosthuizen, J., Adusei-Asante, K., Van Etten, E., Adams, S., & Frimpong, K. (2019). Perception of climate change and occupational heat stress risk and adaptation strategies of mining workers in Ghana. Science of the Total Environment, 657, 365-378.
- Nunfam, V., Van Etten, E., Oosthuizen, J., Adusei-Asante, K. & Frimpong, K. (2019). Climate change and occupational heat stress risks and adaptation strategies of mining workers: Perspectives of supervisors and key stakeholders in Ghana. Environmental Research, 169, 147-155.
- Davidson, M., Reed, S. Oosthuizen, J. O'Donnell, G. Gaur, P., Cross, M. & Dennis, G. (2018). Occupational Health and Safety in Cannabis Production: An Australian Perspective. International Journal of Occupational and Environmental Health, ISSN: 1077-3525 (Print), 2049-3967 https://doi.org/10.1080/10773525.2018.1517234.
- Neville PJ, Clark K, Oosthuizen J, Beatty S, Fatouros M, et al (2018) Mosquito Management: Views of Accountability and Their Variance across Neighborhoods in Perth, Western Australia. Ann Public Health Res 5(3): 1080.
- Oosthuizen, J., & Cross, M. (2018). Establishing cause, what does that mean from an epidemiological and legal perspective? Environmental and Planning Law Journal. 35, 426-429.
- Dunn, L., Nicholson, R., Ross, K., Bricknell, L., Davies, B., Hannelly, T., Lampard, J., Murray, Z., Oosthuizen, J., Roiko, & Wood, J. (2018). Work-integrated learning and professional accreditation policies: An environmental health higher education perspective. International Journal of Work-Integrated Learning. 19(2), 111-127.

GRANTS

- 2019: Department of Health WA. Barriers to achieving high immunisation coverage in Perth's Aboriginal Children: a Midwives study. $11,200.
- 2018: Classification and Labelling of Chemicals (GHS) of respirable coal dust, non-asbestiform fibres (those not meeting the definition of a countable asbestos fibre) and elongated mineral particles associated with the asbestiform minerals; welding fume and diesel particulate matter (DPM). Safework Australia. $ 233,835.83
- 2017: ECU Collaboration Enhancement Scheme. A collaborative national and international interdisciplinary research agenda to investigate the development, application and governance of pesticides. $10,000.

Research Interests

- Occupational hygiene exposure assessment
- Occupational and environmental heat stress and adaptation
- Mosquito borne disease and vector control

ASSOCIATE PROFESSOR SOPHIA NIMPHIUS

PhD, MSc, BSc
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Associate Professor Sophia Nimphius is an internationally recognised researcher and practitioner for her contributions to improving applied practice in sport. Her research focuses on the enhancement of athletic performance and reduction of injury risk in athletes. Additionally, she advocates for the broader benefits of sport as a vehicle for social change. She collaborates with several professional and Olympic sporting teams and their staff to improve applied practice through the effective translation of research findings. She was awarded the 2017 Female Leader in Exercise & Sports Science by Exercise and Sports Science Australia (ESSA) and ECU's Vice Chancellor Staff Award for Inspirational Individual (Personal Excellence) in 2016.

She is a member of the Centre for Exercise and Sports Science Research (CESSR) and the Australian Centre for Research into Injury in Sport and its Prevention (ACRISP). She is currently a Board Member of the Australian Strength and Conditioning Association, Associate Editor of the International Journal of Sports Physiology and Performance and Associate Editor of Frontiers in Sports and Active Living (Elite Sports and Performance Enhancement). A/Prof Nimphius has published over 70 scientific journal articles, 7 book chapters on enhancing athletic performance, has been a keynote speaker at numerous conferences internationally and has successfully attracted more than $1.5M of grant funding.

SELECTED PUBLICATIONS

Journal Articles

- Nimphius, S. (2019). Exercise and sport science failing by design in understanding female athletes. International Journal of Sports Physiology and Performance, 14(9), 1157–1158. doi.org/10.1123/ijspp.2019-0703
- Nimphius, S., McBride, J. M., Rice, P. E., Goodman-Capps, C. L., & Capps, C. R. (2019). Comparison of quadriceps and hamstring muscle activity during an isometric squat between strength-matched men and women. Journal of Sports Science and Medicine, 18(1), 101–108.
- Suchomel, T. J., Nimphius, S., Bellon, C. R., & Stone, M. H. (2018). The importance of muscular strength: Training considerations. Sports Medicine, 48(4), 765-785. doi.org/ 10.1007/s40279-018-0862-z
- Nimphius, S., Callaghan, S. J., Bezodis, N. E., & Lockie, R. G. (2018). Change of direction and agility tests: Challenging our current measures of performance. Strength & Conditioning Journal, 40(1), 26-38.
- Suchomel, T. J., Nimphius, S., & Stone, M. H. (2016). The importance of muscular strength in athletic performance. Sports Medicine, 46(10), 1419-1449. doi.org/10.1007/s40279-016-0486-0.

GRANTS

- 2019 – 2023 ALTIS & US Ski & Snowboard: Development of a return to performance assessment framework for anterior cruciate ligament (ACL) injury evaluation for ALTIS – Barton Health and US Snow and Ski, Industry Engagement Scholarship, $175,000
- 2019 – 2023 ALTIS Living Lab Project: Assessment and quantification of the elite track and field athletes, ALTIS Pty Ltd, Industry Engagement Scholarship, $194,362.
- 2014 – 2017 Surfing Collaborative Research Program: A partnership between Surfing Australia and Edith Cowan University, Surfing Australia, Surfing Australia - Grant, 2014 - 2017, $366,062.

Research Interests

- Enhancement of athletic performance (particular interest in female athletes)
- Reduction of injury risk in sport
- Motor behaviour (focus on coaching and skill acquisition)

DR LAUREN FORTINGTON

PhD, MHSc, BP&O
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Dr Fortington is an injury epidemiologist who is working to improve the collection, analysis and reporting of injury data in different sports settings to best understand the impact of injuries and ways to prevent them occurring. Lauren is conducting investigations of injuries that occur in elite and community sport including men's and women's rugby and Australian football, Gaelic sports and Olympic sports. Lauren's research seeks to improve the understanding of longitudinal data (when multiple injuries are sustained over time in individuals) as well as reporting and analysis of non-acute, non-time loss injuries in sports settings. Dr Fortington is also leading studies of safety in community sports organisations, aimed towards informing policy on the prevention and best management of serious and fatal events in sport.

Dr Fortington's research is funded by grants provided from the International Olympic Committee, Rugby Australia, Cricket Australia, Injury Matters and the State Government of Victoria, among others. Lauren contributes to the Australasian Injury Prevention Network, the Australasian Epidemiological Association and Sports Medicine Australia and she is an Associate Editor of the Journal of Science and Medicine in Sport.

SELECTED PUBLICATIONS

Journal Articles

- Fortington LV, Bekker S, Morgan D, Finch CF. "It doesn't make sense for us not to have one" - Understanding reasons why community sports organisations chose to participate in a funded automated external defibrillator (AED) program. Clinical Journal of Sport Medicine. 2019;29(4):324-326.
- Fortington LV, West L, Morgan D, Finch CF. Implementing automated external defibrillators into community sports clubs/facilities: a cross-sectional survey of community club member preparedness for medical emergencies. BMJ Open Sport & Exercise Medicine 2019;5:e000536.
- Finch CF, Fortington LV. So you want to understand subsequent injuries better? Start by understanding the minimum data collection and reporting requirements. Br J Sports Med. 2018 Sep;52(17):1077-1078.
- Fortington LV, Vassallo AJ, Ivers RQ. Growing the next generation of researchers in injury prevention. Injury Prevention. 2018 Oct;24(5):322-323.
- Kucera K, Fortington LV, Wolff K, Marshall S, Finch CF. Estimating the international burden of sport-related death: a review of data sources. Injury Prevention. 2019;25(2):83-89.
- Fortington LV, Bekker S, Finch CF. Online news media reporting of football-related fatalities in Australia: A matter of life and death. J Sci Med Sport. 2018 Mar;21(3):245-249.
- Toohey LA, Drew MK, Finch CF, Cook JL, Fortington LV. A 2-year prospective study of injury in elite Australian rugby sevens: exploration of incidence rates, severity, injury type and subsequent injury in men and women. American Journal of Sports Medicine. 2019. 47(6):1302-1311.
- O'Connor S, Leahy RM, Whyte E, O'Donovan P, Fortington LV. Understanding injuries in the Gaelic sport of camogie: the first national survey of self-reported worst injuries. International Journal of Athletic Therapy and Training. In Press.
- Docking SI, Rio E, Cook J, Orchard JW, Fortington LV. The prevalence of Achilles and patellar tendon injuries in Australian football players beyond a time-loss definition. Scand J Med Sci Sports. 2018 Sep;28(9):2016-2022.
- Gamage P, Fortington LV, Kountouris A, Finch C*. Match injuries in Sri Lankan junior cricket: a prospective, longitudinal study. Journal of Science and Medicine in Sport. 2019;22(6):647-652.

Research Interests

- Injury prevention
- Sports injury surveillance
- Sports safety

DR NICOLAS HART

PhD, AES, CSCS, ESSAM
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Dr. Nicolas Hart is a Senior Research Fellow for the Cancer Council of Western Australia at the Exercise Medicine Research Institute (EMRI) situated within the School of Medical and Health Science (SMHS) at Edith Cowan University; member of the Australian Centre for Research into Injury in Sport and its Prevention (ACRISP), and co-founder of the Western Australian Bone Research Collaboration (WABRC). He is an active researcher, attracting in excess of $4m of grant funding, with 42 refereed journal articles published to date.

Dr Hart researches in exercise medicine – focusing on two key streams: (1) exercise oncology, and (2) musculoskeletal health, disease and adaptation. His clinical oncology work focuses on the ability of exercise to target tumour biology, and attenuate tumour formation, growth and invasion in oncological and haematological malignancies, with a focus on bone metastases or bone disease. His sports medicine work focuses on musculoskeletal screening and adaptation to prophylactic and remedial interventions, with a focus on bone stress injuries, including his current work with the West Coast Eagles, and prior work with the Fremantle Dockers.

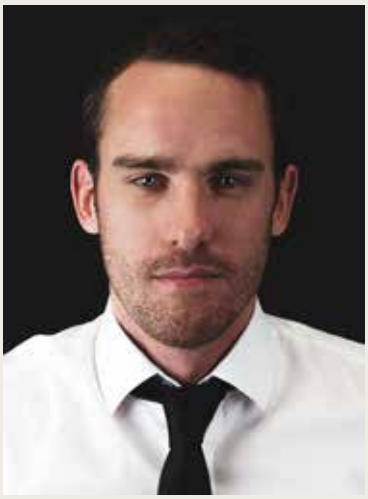
SELECTED PUBLICATIONS

Journal Articles

- Hart NH, Newton RU. (2019). Testosterone replacement for male military personnel: a potential counter-measure to reduce injury and improve performance under extreme conditions. EBioMedicine. 47: 16-17.
- Hart NH, Galvão DA, Saunders C, Taaffe DR, Feeney K, Spry N, Tsoi D, Martin H, Chee R, Clay T, Redfern AD, Newton RU. (2018). Mechanical suppression of osteolytic bone metastases in advanced breast cancer patients: a randomised controlled study protocol evaluating safety, feasibility and preliminary efficacy of exercise as a targeted medicine. Trials. 19(1): 695.
- Jenkins M, Nimphius S, Hart NH, Chivers P, Rantalainen T, Reuter K, Borland ML, McIntyre F, Stannage K, Siafarikas A. (2018). Appendicular fracture epidemiology of children and adolescents: A 10-year case review in Western Australia (2005 to 2015). Archives in Osteoporosis, 1 3(1): 63.
- Hart NH, Newton RU, Weber J, Spiteri T, Rantalainen T, Dobbin M, Chivers P, Nimphius S. (2018). Functional basis of lower-body skeletal morphology in professional Australian Rules Footballers. J Strength Cond Res. doi: 10.1519/JSC.0000000000002841.
- Hart NH, Ireland A, Nimphius S, Rantalainen T, Siafarikas A, Newton RU. (2017). Mechanical basis of bone strength: Influence on bone material, bone structure and muscle action. J Musculoskelet Neuronal Interact. 17(3): 114-139.
- Hart NH, Galvão DA, Newton RU. (2017). Exercise medicine for advanced prostate cancer. Curr Opin Support Palliative Care. 11(3): 247-257.

GRANTS

- 2016 – 2023 INTense Exercise for suRVivAL among men with metastatic castrate-resistant prostate cancer (INTERVAL-GAP4): a multicentre, randomised controlled phase III study. The Movember Foundation. $1,184,686 AUD.
- 2018 – 2023 Can exercise delay transition to active therapy in men with low grade prostate cancer? A multicentre randomised controlled trial. National Health and Medical Research Council. $596,085 AUD.
- 2019 – 2022 Research Centres for Prevention of Injury and Protection of Athlete Health, Australian Centre for Research into Injury in Sport and its Prevention (ACRISP). International Olympic Committee. $568,107 AUD.



Research Interests

- Exercise Medicine
- Exercise Oncology
- Bone Metastases and Disease
- Muscle-Bone Interactions
- Musculoskeletal Adaptation
- Athlete Health, Injury Prevention

ASSOCIATE PROFESSOR ANNETTE RAYNOR

PhD
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Associate Professor Raynor's research is in the area of Motor Control and Motor Learning, with three main themes: Improving motor performance capability across the lifespan; talent identification for sport; and the development of expertise in decision-making. Her current research includes a focus on older adults in residential aged care settings and young children with Developmental Coordination Disorder, improving motor performance using intervention strategies that are underpinned by motor learning principles. In the area of applied sport science, she works together with the Australian Institute of Sport and national sporting organisations to develop talent identification models to enhance the development of the next generation of elite sports people. Dr Raynor is also interested in how experts in a variety of areas make the right decision at the right time during time constrained, highly pressured environments. Knowledge of how this occurs will inform the training of decision-making skills. She collaborates with researchers from a number of different disciplines including Occupational Therapy, Speech Pathology and Public Health and works with a variety of industry partners.

SELECTED PUBLICATIONS

Journal Articles

- Liddiard, K., Raynor, A.J., Rivard, A.M., Brown, C.A. (2019). Patient-Defined Meaningfulness within Chronic Pain Rehabilitation: A Concept Analysis. International Journal of Caring Sciences. 12(2), 832-843.
- Raynor, A., Iredale, F., Crowther, R., White, J., & Dare, J. (2019). It's not just physical: An exercise physiologist led exercise program promotes functional and psychosocial health outcomes in aged care. Journal of Aging and Physical Activity. DOI: 10.1123/japa.2019-0088
- Roberts, A., Raynor, A., Humberstone, C., Greenwood, D., Iredale, F., & Stanley, M. (2019). Coach knowledge in talent identification: A systematic review and meta-synthesis. Journal of Science and Medicine in Sport. 22(10), 1163-1172. DOI: 10.1016/j.jsams.2019.05.008.
- Keller, B., Raynor, A.J., Bruce, L. & Iredale, F. (2018). Tactical skill in Australian youth soccer: Does it discriminate age-match skill levels? International Journal of Sports Science & Coaching. 13(6), 1057-1063.
- Keller, B., Raynor, A.J., Bruce, L. & Iredale, F. (2018). Physical and anthropometrical attributes of Australian youth soccer players. International Journal of Sports Science & Coaching. 13(5), 787-793.
- Ward, E., Hillier, S., Raynor, A., & Petkov, J. (2017). Effective service delivery modes for children with developmental coordination disorder: a randomised controlled trial. Paediatric Physical Therapy. 29, 230-236.
- Nolan, R., Raynor, A., Berry, N., & May, E. (2016). Self-reported physical activity using the International Physical Activity Questionnaire (IPAQ) in Australian adults with type 2 diabetes, with and without peripheral neuropathy. Canadian Journal of Diabetes. 40(6), 576–579.
- Keller, B., Raynor, A.J., Bruce, L. & Iredale, F. (2016). Technical attributes of Australian youth soccer players. International Journal of Sports Science & Coaching. 11(6), 819-824.

Research Interests

- Psycho-social outcomes of exercise in aged care
- Developmental Coordination Disorder
- Talent identification in sport
- Development of expertise in decision-making

DR DAVID COALL

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Dr David Coall is Senior Lecturer and coordinator of the Biomedical Science course in the School of Medical and Health Sciences. His research focus is on inter-generational influences on health and behaviour and is interdisciplinary across the fields of evolutionary anthropology, reproduction, paediatrics, development, mental health, and maternal and child health. He has recently been described as a world leader in the study of grandparental investment.

He has two defined research programs within this field. The first in the new field of Evolutionary Medicine uses evolutionary theory as a framework to examine how the early environment impacts growth, development and reproduction.

The second examines the different roles grandparents play and how they impact community and family functioning, grandchild development and the health of the grandparents themselves. Over the past 15 years Dr David Coall has developed this area through local and international collaborations that is now being translated into support services for people in low resource family situations. Currently, in collaboration with Wanslea Family Services, his focus is on a state-wide exploration of the experiences and health of grandparents raising their own grandchildren, funded by Lotterywest.

SELECTED PUBLICATIONS

Journal Articles

- Sear, R., Sheppard, P. & Coall, DA. (2019). Cross-cultural evidence does not support universal acceleration of puberty in father-absent households. Philosophical Transactions of the Royal Society B, 374, 20180124.
- Danielsbacka, M., Tanskanen, AO., Coall, DA. & Jokela, M. (2019). Grandparental childcare, health and well-being in Europe: A within-individual investigation of longitudinal data. Social Science & Medicine, 230, 194-203.
- Karthigesu, SP., Chisholm, JS. & Coall, DA. (2018). Do grandparents influence parents' decision to vaccinate their children? A systematic review. Vaccine, 36(49), 7456-7462.
- Coall, DA., Hilbrand, S., Sear, R. & Hertwig, R. (2018). Interdisciplinary perspectives on grandparental investment: A journey towards causality. Contemporary Social Science, 13(2), 159-174.
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- Coall, D.A., Tickner, M., McAllister, L.S. & Sheppard, P. (2016). Developmental influences on fertility decisions by women: an evolutionary perspective. Philosophical Transactions of the Royal Society B, 371, 20150146
- McAllister, L.S., Pepper, G.V., Virgo, S. & Coall, D.A. (2016). The evolved psychological mechanisms of fertility motivation: hunting for causation in a sea of correlation. Philosophical Transactions of the Royal Society B, 371, 20150151
- Chisholm, J.S., Coall, D.A. & Atkinson, L. (2016). Mother–infant cultural group selection. Behavioral & Brain Sciences, 39, e35

GRANTS

- 2017 – 2020 Exploring the different and shared experiences of informal and formal grandparent carers in Western Australia, Lotterywest, $584,145.
- 2016 – 2019 Health and Well-Being of Grandchildren Raised by their Grandparents, ECU Industry Collaboration Scheme, $110,739.
- 2016 – 2017 Factors influencing the reunification of children with their substance-using parents subsequent to their placement in out-of-home care, ECU Industry Collaboration Scheme , 141,899.

Research Interests

- Grandparents raising their grandchildren: Experiences, needs and health
- The influence childhood psychosocial stress has on a woman's reproductive development, reproductive timing, and her mental and physical health
- Maternal influences on placental growth and development
- The impact grandparental investment has on the growth and development of grandchildren in contemporary industrialised societies
- Using life history theory as a framework for examining factors that influence clinically significant variation in birth weight and placental weight

RESEARCH HIGHLIGHTS

STALKING A STEALTHY KILLER

Among skin cancers, melanoma has a dual distinction: it can be difficult to catch early, before it has spread to other parts of the skin or other organs, and it is particularly deadly.

As the number of melanoma cases rise around the world, with approximately 132,000 new cases currently being diagnosed each year, Australia has been hit especially hard. The nation features the world's second-highest melanoma rate. Each year, the disease kills more than 1,700 people in Australia—more than are killed in traffic accidents—and is diagnosed in thousands of others.

Even with melanoma being discovered in more and more people, physicians and researchers worry that current tools used to detect melanoma are not always optimal.

Melanoma is currently detected by clinicians performing biopsies on moles or suspicious-looking areas of the skin and pathologists then scanning the sample for signs of the disease. This detection method is invasive as it requires the removal of at least one square centimetre of skin from the patient. It is also expensive as the annual cost to the Australian health system of the diagnosis and treatment of melanoma is estimated to be $201 million. What's more, approximately three out of every four biopsies comes back negative. However, given the dangers associated with melanoma, it is preferable that clinicians err on the side of caution and continue conducting biopsies, notwithstanding the number that come back negative.

For the above reasons, researchers around the world have been in search of a test that could identify melanoma earlier, and with more accuracy.

Antibodies provide early warning

Now, in a breakthrough that could save thousands of lives, researchers at Edith Cowan University (ECU) have devised a blood test that can detect early-stage melanoma in approximately 80 percent of patients.

The discovery is the result of a scan university researchers conducted on more than 1,600 types of antibodies, with a goal to identify a combination of 10 antibodies that can best indicate the presence of melanoma in blood. The blood test, which is still in the development phase, scans for antibodies the body produces when melanoma first presents itself.

"The body may produce these antibodies as soon as melanoma first develops, which is how we have been able to detect the cancer in its very early stages with this blood test," says Dr Pauline Zaenker, the lead researcher for ECU's Melanoma Research Group. "No other type of biomarker appears to be capable of detecting the cancer in blood at these early stages."

Researchers at ECU analysed the blood of 104 melanoma patients and 105 healthy people, the latter serving as a control group. They found 139 possible antibodies that were expressed at higher levels in patients with melanoma. The research group then used high-level statistical analysis to identify a group of 10 "autoantibodies"—weapons the body utilises to ward off illnesses—and found that they could be used to detect early-stage melanoma in 79 percent of patients.

Such a tool could be of particular value to people who present additional diagnostic difficulties, such as those whose skin contains 100 or more moles or thin early-stage melanomas, as well as those patients at especially high risk of developing the cancer. It also might allow doctors to reach more patients, including those in remote or rural areas.

Blood test improves diagnosis

The blood test is not seeking to replace biopsies, rather to improve the early diagnosis of melanoma and reduce the risk of cases being missed to help improve patient outcomes.

"A positive test would give doctors an additional tool to have more diagnostic certainty prior to a biopsy," says Mel Ziman, a professor in ECU's School of Medical and Health Sciences, and head of the Melanoma Research Group. "Findings must now be tested among larger groups of patients," she adds.

The research group is looking to perform a clinical trial with 1,000 participants who have been prescribed a biopsy for melanoma, and from whom blood will be collected. The blood test findings will then be compared to the biopsy results.

"The clinical trial will enable us to identify how accurate our test is. We would like to improve its accuracy to 90 percent, which is what should be expected of diagnostic testing," says Professor Ziman. "By testing more people, we hope to find the optimal set of antibodies, which will increase the test's accuracy rate."

Scientists say the end result of their work—saved lives—is more than worth the price of the investment.

"Patients who have their melanoma detected in its early stage have between a 90 and 99 percent chance of a five-year survival rate whereas if it is not caught early and it spreads around the body, the chance of a five-year survival rate drops to less than 50 percent," Dr Zaenker says.

She adds: "This is what makes this blood test so exciting as a potential screening tool because it can detect melanoma in its very early stages when it is still treatable."

CENTRE FOR RESEARCH EXCELLENCE (CRE) IN PROSTATE CANCER SURVIVORSHIP

The Centre for Research Excellence (CRE) in Prostate Cancer Survivorship is a multidisciplinary collaboration between Edith Cowan University, Griffith University, Cancer Council Queensland, Cancer Council NSW, Monash University, University of Adelaide and the University of Queensland. Our CRE is funded through a $2.5m National Health and Medical Research Council (NHMRC) grant. The Exercise Medicine Research Institute has been at the forefront for over a decade pursuing research into how exercise acts as a medicine to improve the lives of men with prostate cancer.

More than 10 Australian men are diagnosed with prostate cancer every hour and around 200,000 Australian men are living with prostate cancer today. The CRE is translating research into action across four main themes for the benefit of men diagnosed. These themes include exercise medicine, psychosocial and psychosexual health, the economic costs of prostate cancer and geographic inequalities in prostate cancer outcomes. The results of the work carried out by the CRE will generate critical information on the role of exercise as a therapeutic intervention to delay patient morbidity associated with prostate cancer primary therapy. Additionally, we aim to build on current evidence supporting exercise as a low-cost, minimal-risk intervention to improve physical function, fitness, and quality of life and disease-related symptoms of anxiety and depression in individuals with prostate cancer.

The CRE in Prostate Cancer is a collaborative effort that has wide-ranging, direct benefits to the Australian population.

HEALING RIGHT WAY: ENHANCING REHABILITATION SERVICES FOR ABORIGINAL AUSTRALIANS AFTER BRAIN INJURY

Brain impairment resulting from stroke and traumatic brain injury is known to occur up to three times more frequently in Aboriginal Australians than non-Aboriginal Australians and at a younger age, yet Aboriginal stroke and traumatic brain injury survivors are under-represented in mainstream hospital-based rehabilitation services. Healing Right Way is an ECU-led NHMRC Partnership Project aimed at improving quality of life for Aboriginal people following brain injury in Western Australia by improving access to culturally appropriate inter-disciplinary rehabilitation services.

Partners: University of Western Australia, Notre Dame University, Geraldton Regional Aboriginal Medical Service, University of Technology Sydney, Monash University, the WA Department of Health, Royal Perth Hospital Medical Research Foundation, Sir Charles Gairdner, Royal Perth, St John of God Midland, and Fiona Stanley-Fremantle Hospitals, Western Australian Country Health Service (Broome, Kalgoorlie, Geraldton, Port Hedland), Kimberley Aboriginal Medical Services, Bega Garnbirringu Health Services, Kalgoorlie, Warrika Maya Health Service, Port Hedland, Neurological Council of WA, Stroke Foundation.

APPLYING TO ECU

Getting ready to apply for a research degree can seem quite daunting so we've laid out the following process to assist you. We recommend that you complete your application four to six weeks prior to any deadline. An incomplete application will result in delays, which means you could potentially miss deadlines, so make sure that your application is complete before submitting it.

CHECK YOUR DATES

Masters by Research courses and the Integrated PhD have a specific start date and application deadlines. However, applications for the standard PhD are open all year round. Keep in mind that ECU's Research Scholarships also have opening and closing dates. If you are interested in applying for a scholarship, visit the Scholarships website: **ecu.edu.au/scholarships**

KNOW YOUR TOPIC

You will need to prepare a 300-word abstract and a two-page proposal on your topic. Your initial abstract and proposal will tell us about you, including how much you know about ECU, research in your area of study, how passionate you are about your subject, and how familiar you are with the prospective supervisors within the schools.

PREPARE YOUR DOCUMENTS

In addition to your abstract and proposal, you will need to submit the following:

- Academic certificate transcripts (secondary and/ortertiary studies) in both the original language and official certified English translation (if applicable)
- English proficiency test scores
- Copy of passport photo page (if applicable)
- Résumé/Curriculum vitae (if applicable)
- Work reference (if applicable)
- Marriage or name change certificate (if applicable)
- Copies of your Honours or Masters Thesis, as well as any publications you have produced

APPLY DIRECTLY TO ECU OR THROUGH AN AGENT

Visit the Application Portal: **apply.ecu.edu.au** to apply for your course, including uploading your documents. You can also track the progress of your application here.

Please note that ECU requires certain nationalities to apply via an authorised agent. Visit **ecu.edu.au/future-students/applying/find-an-authorised-agent** to find an agent near you.

RECEIVE OUR INITIAL ASSESSMENT

The initial assessment will take into account your qualifications, topic, abstract and proposal to ensure it is closly aligned with our areas of research focus, and that we have supervisors in your research area. This can take four to six weeks, depending on academic availability. Please note that during December and January this process may take longer.

We will communicate with you via email, so it is important for you to check your email regularly to ensure there are no delays with your application.

PROGRESS YOUR APPLICATION

If your application satisfies all our criteria, it will be progressed for further assessment. At this stage your qualifications will be verified and a research supervisor will be assigned to you. Processing time for the assessment of your application will vary based on academic availability.

OUTCOME OF YOUR APPLICATION

You will be advised of the outcome of your application via email. If you are successful, you will receive an offer to commence your studies at ECU.

ACCEPT YOUR OFFER

Your offer letter will contain specific instructions as to how to accept your offer via our online system.

If you have questions about your application, contact Admissions: HDR.enquiries@ecu.edu.au

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GREENING ECU: Edith Cowan University is committed to reducing the environmental impact associated with its operations by conducting its activities in a socially and environmentally responsible manner. This includes implementing strategies and technologies that minimise waste of resources and demonstrate environmentally sensitive development, innovation and continuous improvement.

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