



WESTERN SYDNEY
UNIVERSITY

HEALTH & WELLBEING

RESEARCH THEME

2020-2021

The Health & Wellbeing Theme is proud to present a summary of activities throughout 2020-2021. Despite the intense difficulties over this period imposed by the COVID-19 pandemic, the Theme continues to grow, expanding its reach and impact. The research-led discoveries, interventions and innovations covered in this report take as their focus the complex and intersecting factors which contribute to health and wellbeing outcomes. Collaboration is at the core of Theme activity, should you have any questions or inquiry please do get in touch.

Acknowledgement of Country

Western Sydney University acknowledges the peoples of the Darug, Tharawal, Eora and Wiradjuri nations.

We acknowledge that the teaching, learning and research undertaken across our campuses continues the teaching, learning and research that has occurred on these lands for tens of thousands of years.



Virginia Schmied is Professor of Midwifery in the Nursing and Midwifery. In her role she collaborates with other senior academics at WSU to build capacity in maternal and child health research.

Professor Schmied has a strong national and international reputation in the discipline of midwifery, and in the field of maternal and child health. She researches and supervises higher degree students in topics addressing the social and emotional health and well-being of women and men in the transition to parenthood, breastfeeding and young child feeding, perinatal mental health, particularly in vulnerable communities, and researching improvements in service delivery and professional practice.

Professor Schmied has held national competitive grants from ARC and NHMRC and she has conducted consultancy work including leading the development of the national framework for universal health and development services to children and families for the Australian Government. In 2016 she was awarded the Vice Chancellor's award for Excellence in High Degree Research Supervision and Training and in 2018 she led a team that was awarded the Vice Chancellor's excellence in Learning and Teaching award for innovations in perinatal multidisciplinary learning and teaching.



Professor Paul Breen is leader of Biomedical & Human Technologies at The MARCS Institute for Brain, Behaviour & Development, Western Sydney University. He is the WSU Academic Lead to the Digital Health CRC and Co-Lead of the Frontier Technology Clinical Academic Group within Maridulu Budyari Gumal (SPHERE), an NHMRC Advanced Health Research and Translation Centre. More recently he has been central to the establishment of LinkLab, a consortium which creates transformative connections between clinicians, academia and industry.

Professor Breen focuses on identifying addressable real-world problems and utilising a cross spectrum of technologies to build solutions to these problems. He works closely with clinical/academic colleagues and industry partners to bring these solutions to commercial reality. Specific research interests include novel sensing methodologies for unobtrusive wellness and medical monitoring, electrical stimulation techniques for the enhancement of sensory perception and controlled incubation of biological tissue.

Collaborators include academics, clinicians, and businesses both nationally and internationally, e.g., Rutgers, Johns Hopkins, NASA, Department of Veterans Affairs USA, NUI Galway, Kings College London, Oventus Medical, Medical Monitoring Solutions and Durapol among others. His work has led to the establishment of a number of companies including PAYO Scientific (braincubator.com.au) and Medical Monitoring Solutions (saiiv.com).

We thank Katharine Pollock for her work in preparing this report.

2020-2021 OUTCOMES



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**SUSTAINABLE
DEVELOPMENT
GOALS**



SUMMARY

Health and wellbeing are inextricably connected. Despite continuous advances in medicine and healthcare, the demand for health services continues to grow. The emergence of COVID-19 has further underscored the necessity for appropriate – and accessible – physical and mental healthcare. Health and wellbeing researchers at Western are leading advocates for the Western Sydney region, conducting impactful research so our communities will thrive.

The Health and Wellbeing research theme currently led by Research Theme Champions Professor Virginia Schmied and Professor Paul Breen aims to contribute to the development of a collegial and collaborative culture among Western Sydney University researchers and external partners and to foster the development of strong industry partnerships. We do this by:

- Developing strong working relationships between Institutes, SRIs, Schools, Clusters and Centres.
- Fostering and supporting interdisciplinary research teams to engage with industry partners.
- Mentoring early and mid-career researchers to progress their career goals, in particular those seeking Category 2 and 3 funding.
- Working with other Theme Champions to share knowledge and develop a coherent approach to cross theme initiatives.

The Theme Champions support Western researchers to generate alternative solutions to complex problems in the following priority areas:

- Chronic Disease
- Healthy Ageing
- Maternal and Child Health
- Mental Health and Wellbeing
- Health Innovation, including digital innovations and service system redesign

Research within the theme is interdisciplinary and integrated, recognising that environmental, socio-economic, cultural, and other factors impact physical and mental wellbeing.

Research topics range from mental health to menstrual health, sensor development and obesity prevention and diabetes management. These initiatives include e-health service delivery, reaction chromatography diagnostics, translational cancer research, and sports science. We investigate innovative and bold approaches to enable healthy lifestyles, prevent serious disease, and reduce the cost and burden of illness.

Health and wellbeing researchers work with community and industry to foster collaborative and reciprocal partnerships. These relationships are crucial in developing solution-oriented approaches to health and wellbeing concerns both now and into the future. Partners include the Local Health Districts (LHD), Primary Health Networks (PHN), Non-Government Organisations (NGO), Medical Technology and Pharmaceutical Industry. While collaborative activity permeates the Theme, it is exemplified by the ongoing LinkLab initiative bringing clinicians, industry and researchers together to identify and solve clinical needs.

In 2020 and 2021 the Theme provided seed funding for 18 projects. Despite the inherent challenges posed by COVID-19, the seed funded projects saw great success and hold promise for future development, funding, and impact. Adapting to the new reality of living with COVID-19 required researchers

to rethink project parameters and pivot to new emergent needs. Several projects recognise the increasing need to address the concerns of health practitioners, industry, and community: especially the most vulnerable members of our communities. One example is 'Producing Culturally Appropriate Public Health Messaging: Evaluating and Developing Rapid Response CALD Communication Strategies for NSW', which implemented targeted public health messaging around COVID-19 for and with culturally and linguistically diverse communities. Another project with future potential beyond its present focus is the 'Forehead Sternum Electronic Recording (FOSTER)' device. FOSTER has the capacity to enable wearable remote monitoring to optimise COVID-19 patient monitoring and therapy, a timely and impactful potential use.

Researchers working within the Health and Wellbeing theme shared their findings and insights across a range of events held throughout the year. The 'Arts, Health and Wellbeing: Moving Ideas and Innovations Forward' theme storm was a stimulating and timely discussion of the intersection between creative arts practices and health and wellbeing research. Ms Dolla Merrillees, the newly appointed Director of **Western Sydney Creative** gave the opening address. Researchers at this event celebrated existing research initiatives and debated how we can advance the conversation outside of the academic space. This was followed by an externally focused showcase of Arts, Health and Wellbeing research in December 2021.



ACKNOWLEDGMENT OF OUTGOING THEME FELLOW

DR JENNIFER MACRITCHIE

Dr Jennifer MacRitchie was appointed as Senior Research Fellow in Health and Wellbeing in 2020. In 2021, she accepted a UKRI Future Leaders Fellowship with the Music Department at the University of Sheffield.

Jenni has a background in both electrical engineering and music, and her research focuses on the acquisition and development of motor skills in instrumental performance, and how these can be used to promote health and wellbeing. She has been engaged in studies that range from looking at movements of novices to experts, from those who have studied music from a young age to those who are rediscovering music in retirement. At Western, Jenni was leading a research program including an ARC discovery grant, examining older adult music education.

In the health and wellbeing role Jenni contributed to building and strengthening the collaborative work of the theme. Jenni led many workshops, contributed to theme storms in particular those related to the intersection of the arts and health. Jenni played a lead role together with Dr Alison Short in writing **Sounding Out: Music for Health and Wellbeing** our white paper on Music and Health.

In her new role, Jenni is designing new musical technologies for older adults particularly those living with dementia and their carers.

In Research Week this year, the latest Health & Wellbeing White Paper '**Sport, Health and Society**' was launched by primary authors A/Professor Emma George and Professor Tony Rossi. As highlighted in the Research Week event, the White Paper outlines the university's ongoing commitment to empowering individuals and uniting communities through sport.

2020 and 2021 posed unprecedented challenges to physical and mental wellbeing. The advent of COVID-19, multiple ensuing lockdowns, and social distancing have introduced or advanced feelings of uncertainty, precarity, stress, anxiety, and loneliness. As well as maintaining mental fortitude, optimising physical health is of paramount importance as we navigate these unprecedented events.

The projects and events listed here pose solutions, advance conversations, span disciplines, and look outside of academic silos to industry and community. Now more than ever, forging of connections within and outside of academia is needed to make real and lasting change. The Health and Wellbeing Theme is proud to document these projects, which are both timely and sure to have lasting reverberations in times to come.



FOCUS AREAS

2020 & 2021

FOCUS AREA 1:

LINKLAB

One of the most pioneering projects advanced over the past year was LinkLab, a MedTech innovation program in which academics, clinicians and industry partners work together to identify clinical needs, create novel solutions, and translate findings into practice. Originating from the Biomedical & Human Technology group at The MARCS Institute for Brain, Behaviour & Development, LinkLab was initially inspired by international models for MedTech innovation but crafted for our local environment. The LinkLab model incorporates 'Engineers in Residence' creating strong connections to clinicians and industry. In collaboration, clinical needs are identified and triaged into those most likely to lead to success (e.g., grants, uptake, commercialisation). LinkLab builds strong long-term networks between researchers, clinicians, and industry to collaborate, identify problems and create solutions.

LinkLab exists in partnership with Liverpool Hospital, The Ingham Institute for Applied Medical Research and the Liverpool Innovation Precinct. It connects internationally through the Australia New Zealand BioBridge and network connections. Since inception, LinkLab has conceived of a range of hardware and software developments including medical devices, digital health platforms and immersive technology solutions. LinkLab is facilitated by Launch Pad¹, Western Sydney University's Tech Startup & SME support Incubator. Launch Pad provides a range of services spanning workspace, mentorship, advice, networking and the ability to prototype products via the University's extensive facilities and resources. Through Launch Pad, LinkLab forms part of precinct activation strategies, funded through the National Priorities and Industry Linkage Fund.

SELECTED SUCCESSES (2020/21)

National Institute of Health (NIH)

Oct 2021 – June 2026 **\$3,571,694**

Lead A/Prof Jorge Serrador with Johns Hopkins and Rutgers University.
Novel Neuromodulation Treatment of Age Related Vestibular Loss to Improve Balance and Gait in Elderly Individuals.

NSW Smart Sensing Network (NSSN)

Aug 2021 – July 2022 **\$106,000**

Lead A/Prof Gaetano Gargiulo with 3 Aim Solutions and UTS.
A novel fused sensor and miniaturised electronics design for the monitoring of a wide range of cardiorespiratory parameters for healthy ageing.

NSW TechVoucher

July 2020 – Dec 2021 **\$30,000**

Lead A/Prof Gaetano Gargiulo with Medical Monitoring Solutions.
Development of combined electrical/mechanical sensing for human physiological monitoring.

South West Sydney Limb Preservation and Wound Research

Feb 2021 – Feb 2022 **\$37,397**

Lead Prof Paul Breen with SWSLHD.
Impact of Stochastic Noise on Nocioception - Can Protective Sensation be Enhanced without Affecting Pain Perception?

SPHERE Maridulu Budyari Gumal FT CAG

Aug 2020 – Mar 2021 **\$18,039**

Lead Prof Paul Breen with SESLHD and Medical Monitoring Solutions.
SAIIV RMS - Wearable remote monitoring system to optimise COVID-19 patient therapy from infection, recovery to follow up.

FUTURE DIRECTIONS:

The next phase for LinkLab will be focussed on expanding existing activities and strengthening areas of potential. As objectives are not limited to technical focus areas, but rather addressing areas of clinical need, the number of opportunities for WSU researchers continues to grow.

Network development, and optimisation of the Engineers in Residence model will continue as part of a broader strategy to increase and maintain engagement with external stakeholders and internal networks across Launch Pad, Schools and Research Institutes. Processes and IT infrastructure for problem and idea identification, market assessment and triage are at an advanced stage of development. These have been created with a focus on ease of use and agility.

Several opportunities have emerged for State and Federal funding to further support and grow LinkLab. LinkLab is currently active, and a medium to long-term strategic plan is in development.

1. www.launchpadlive.com.au



RESEARCHER PROFILE

DR GOUGH LUI

Dr Gough Lui is an interdisciplinary engineering Research Support Program Fellow in Western Sydney University's Biomedical and Human Technologies research program specialising in healthy ageing, digital health and smart sensing technologies. Dr Lui is an Engineer in Residence at LinkLab, working primarily with the South-Western Institute for Robotics and Innovation in Health (SWIRAH) within the Ingham Institute for Applied Medical Research at Liverpool Hospital, in conjunction with the South Western Sydney Local Health District (SWSLHD). He has been involved in fostering new collaborations between clinicians at the hospital and members within the MARCS Institute and STEM cluster within Western Sydney University. As the primary "boots-on-the-ground", he supports on-site activities including clinical trials and assists with co-ordinating regular meetings of the Link Lab group. He also conducts lab-based electronics design and debugging work, designs and conducts experiments and communicates results through local health conferences, research impact competitions and journal publications.



FOCUS AREA 2: MENTAL HEALTH AND WELLBEING

Addressing mental health and wellbeing has been a second key focus area for the Health and Wellbeing research theme in 2020 and 2021. The past few years have presented our community in Western Sydney and beyond with enormous challenges. Thousands were affected by drought and bushfires, and the COVID-19 pandemic has impacted us all. Our researchers in mental health and wellbeing are engaged in ways to support communities to “build back better”, ensuring resilient and adaptive systems and services, not just for emergencies but for a healthier future.

Mental health and wellbeing research at Western is extensive. It brings together researchers from medicine, psychology, public health, nursing and midwifery, education, the arts, humanities, social sciences, environment, and sustainability. Together, this cross-disciplinary partnership provides expertise on how to implement, and provide ongoing evaluation of, initiatives that aim to support mental wellbeing of communities.

Community connection and engagement, codesign, care for Country and inclusive methodologies are at the heart of this work.

Our researchers (see Dr Karin Mackay) are leading the development of a novel framework to explicate the meaning of cultural wellbeing, Dr Alison Short and colleagues in the **Sounding Out** white paper articulated a continuum for music and health practices, exploring the role of creative arts in supporting mental health and wellbeing.

Western researchers focus on the needs of First Nations peoples and culturally diverse and multi-generationally communities, Research activities include examining integrated models of care for people experiencing mental health and chronic disease; music therapy for adolescents with depression or couples experiencing infertility; ways to support young parents' mental health literacy, and how to create age (and dementia) friendly built environments for elderly people to age in place.

The figure, right, captures some of the mental health and wellbeing research successes and activities in 2020 and 2021.



ARTS, HEALTH AND WELLBEING

- Facilitated two online events
- Supported three seed funded projects
- Initiated collaborations with external creative arts organisations

INTEGRATED MULTIDISCIPLINARY CARE FOR PEOPLE LIVING WITH DEPRESSION AND CHRONIC HEALTH CONDITIONS

- Supported annual webinars to promote research related to white paper
- Fostered engagement with people with lived experience

MENTAL HEALTH AND WELLBEING

MENTAL HEALTH IN THE WORKPLACE

- Initiated collaborative research
- Informed and celebrated the WSU Mental Health, Wellbeing & Safety Strategy
- Planned a collaborative program of work for 2022

MENTAL HEALTH LITERACY: CODESIGNING INNOVATIVE DIGITAL LEARNING RESOURCES

- Success in two Commonwealth government emerging priorities fund – Perinatal mental health
 - Perinatal Interprofessional Psychosocial Education for Maternity Clinicians – PIPE-MC
 - Codesigning innovative digital learning resources for young parents

FOCUS AREA 3: HEALTH AND WELLBEING WHITE PAPERS

Over the past three years, the Health and Wellbeing Research Theme has produced a series of white papers that curate the depth of capability of Western Sydney University in specific, strategic areas. These white papers serve multiple purposes but primarily they are effective collateral to support engagement with external organisations. Secondly, they serve as a conduit to connect and harmonise the activities of researchers working in aligned research areas.

In 2021 the Health and Wellbeing Theme continued to promote existing white papers and supported the development and launch of the “Sport Health and Society” white paper.

‘SPORT, HEALTH AND SOCIETY’ WHITE PAPER

The white paper was officially launched at the ‘Sport, Health and Society’ Research Week event by principle authors, Dr Emma George and Professor Tony Rossi. The paper comprehensively details the projects undertaken by Western researchers, who are committed to empowering individuals and optimising health, and can be found here.² It details Western Sydney University’s commitment to empowering individuals and uniting communities through sport. The white paper acknowledges four main challenges in enfranchising people through sport and related activities:

- sub-standard physical activity and sport participation both locally and globally,
- difficulties engaging marginalised and disenfranchised groups,
- a lack of evidence-based and formally evaluated community sports programs,
- engagement with sport and physical activity in a post-COVID-19 landscape.

To tackle these concerns, the White Paper addresses four themes, each with corresponding projects. In theme one, ‘Harnessing the power of sport for health and social impact,’ researchers collaborated with industry partners to educate and empower individuals in improving lifestyle behaviours. One such project emerging from this theme was ‘Active Breed’, a 12-week men’s health and weight loss program for male Rugby League supporters. Dr Emma George, in partnership with the Canterbury-Bankstown Bulldogs, South Western Sydney Primary Health Network, and other partners and funders developed this program which aimed to equip men with the knowledge and skills to improve their physical and mental health.

In theme two, ‘Enhancing inclusion and diversity in sport and physical activity’, researchers sought ways of creating welcoming and inclusive environments for those wishing to participate in sports. Theme three was ‘Responding to stakeholder needs, establishing evidence, advocacy,’ in which research was undertaken with or for groups, clubs, and institutions. The final theme, ‘Development and evaluation of a community-based intervention to improve lifestyle behaviours’, introduced initiatives targeting healthy lifestyle behaviours. WSU will continue collaborating with industry partners to increase engagement in sports, particularly amongst underserved and underreached communities. WSU also aims to enhance diversity and inclusion in sport, and to increase community and industry engagement. As evidenced in the White Paper, by working with professionals and experts in the sport, health, community, and corporate sectors, sport can be used to generate meaningful impacts for those who need it the most.



“ We have been able to use the professional sport setting to successfully engage men who may not usually be interested in general health promotion or behaviour change programs. Men who participated in Active Breed lost weight, improved their lifestyle behaviours, and gained a deeper understanding of the importance of engaging with health services, developing healthy relationships, and discussing mental health challenges. In addition, we also found that men’s partners and children benefitted from their participation in the program. Families were cooking together, engaging in more physical activity together, and having conversations about mental health and respectful relationships at home. We are really proud of this program and everyone who has participated, and we would love to see a program like this delivered on a much larger scale. ”

A/PROF EMMA GEORGE

2. westernsydney.edu.au/thri/research/outputs/health_and_wellbeing_research_theme_white_papers



WESTERN SYDNEY UNIVERSITY

**SOUNDING OUT:
MUSIC FOR
HEALTH AND
WELLBEING**

WESTERN SYDNEY UNIVERSITY

TACKLING MATERNAL ANXIETY IN THE PERINATAL PERIOD

**RECONCEPTUALISING
MOTHERING
NARRATIVES**

WESTERN SYDNEY UNIVERSITY

**AGEING
WHITE
PAPER**
2018

WESTERN SYDNEY UNIVERSITY

**DIABETES,
OBESITY AND
METABOLIC
HEALTH**
2018

WESTERN SYDNEY UNIVERSITY

A CENTRE OF TRANSLATIONAL RESEARCH AND ACTION FOR EATING AND WEIGHT DISORDERS

ASTRA
2018

WESTERN SYDNEY UNIVERSITY

WHITE PAPER

**SPORT,
HEALTH &
SOCIETY**
2021

WESTERN SYDNEY UNIVERSITY

WHITE PAPER

**DEPRESSION,
CO-MORBIDITY AND
INTEGRATED CARE**
2020

WESTERN SYDNEY UNIVERSITY

**ENSURE:
ENHANCING WOMEN'S
SEXUAL AND REPRODUCTIVE
HEALTH IN WESTERN SYDNEY**
AN INTERSECTIONAL APPROACH
AUGUST 2019

FOCUS AREA 4:

SEED FUNDING – OUTCOMES FROM FUNDED PROJECTS

Improvements in health can only come with strong partnerships. The Health and Wellbeing Theme invested in 18 early and mid-career researchers and research teams to build new partnerships by offering seed funding and mentorship. Each project is distinct in focus and methodology, but each is connected by the impetus to devise solution-oriented approaches to healthcare and wellbeing.

The projects supported in 2021 are listed in the Appendix. Here we provide examples of projects supported in 2020.

PROJECT TITLE

Vital Sensor for Low Cost Monitoring at Scale (FOSTER)

Team members: Paul Breen^{1,2}, Gaetano Gargiulo^{1,2,7}, Titus Jayarathna¹, Sally Longmore¹, Gough Lui¹.

'FOSTER', which was spearheaded by researchers across MARCS, is a timely intervention into the fields of physiological sensing medical equipment. Alongside external researchers A/Prof Anders Aneman Intensive Care) and A/Prof Paul Middleton (Emergency Care), the team partnered with Medtech Pathways³ in enabling the development of this project. The primary aim, and successfully achieved outcome, of the project was to develop the FOSTER (FOrehead STernum Electronic Recording) device, which enables medical grade quality physiological sensing. Able to be worn on the forehead or sternum, and with the potential for other locations,

FOSTER allows constant measurement of respiration, heart rate, temperature, ECG, SPO2, movement, position and activity, and pre-calibrated blood pressure. FOSTER connects to the team's existing in-house wearable electronics package, which itself incorporates Bluetooth connectivity for data streaming to custom app and cloud services, an extra accelerometer, SD card capable of months of data storage, single-lead ECG, and a rechargeable battery to power all electronics.

FOSTER has future capabilities such as enabling the advancement of firmware and algorithms, as well as integral use in research studies and clinical trials. The project welcomed several notable partnerships and foresees still more future interventions.

The device has been used as the basis for one completed engineering thesis, and others are likely. Industry partnerships have come to fruition since the project's inception, with Sutherland Hospital Respiratory and Sleep Medicine, Liverpool Hospital Emergency

Department, and Liverpool Hospital Intensive Care Unit each expressing an interest in using the technology. The device, which has the potentiality to enable wearable remote monitoring to optimise COVID-19 patient monitoring and therapy, is capable of a multiplicity of clinical and commercial adaptations.



3. www.medtechpathways.com

PROJECT TITLE

Medical device for home-based anorectal biofeedback therapy

Team members: Jerry Zhou³, Bahman Javadi⁹, Vincent Ho³.

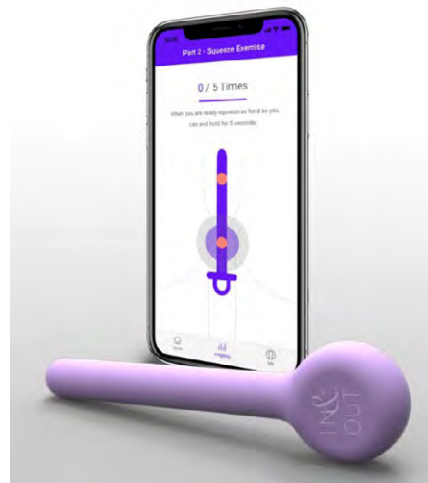
Despite 10% of Australians experiencing problems with pooping, the vast majority will live with their disorder in silence for decades. Without help, the problem grinds away at their mental health, significantly impacting their quality of life. Anorectal biofeedback is an effective first-line treatment but remains inaccessible outside specialists' centres, and patients from regional/remote areas continue to be undertreated due to shortages in service and expertise.

To address this, Dr Zhou has led a team of engineers and computer scientists to develop a device and mobile app to transform the delivery of biofeedback therapy. The technology allows patients to undergo treatment from home, while therapists can monitor adherence and performance remotely.

The project gained significant commercialisation traction when it was accepted into the NSW Health Medical Device Commercialisation Training Program (MDCTP), delivered by technology incubator Cicada Innovation. During this time, the device won the NSW Product Development Award and People's Choice. The team partnered with industrial design firm IDE Group to build the proof-of-concept prototype, which successfully

demonstrated clinical feasibility. The outcomes have been submitted as a technical manuscript to the journal *Sensors* (IF 3.5).

Recently, the team received support and funding from Sydney Partnership for Health, Education, Research and Enterprise (SPHERE) to begin clinical trials at Camden Hospital and Royal Prince Alfred Hospital, the latter of which is Australia's largest training hospital for anorectal biofeedback therapy. The future goals include regulatory approval of the device from national and international bodies and creating a spin-off company to bring this technology into the hands of therapists and patients throughout Australia and the world.



“ Greater Western Sydney has disproportionately high incidences of defecation disorders and we want to create innovative technology that translates to patient-benefits, starting with the population of Greater Western Sydney. Western Sydney University's track record in creating social impact combined with strong partnerships with local health districts makes us well placed to foster innovations in medical device technology. ”

DR JERRY ZHOU

PROJECT TITLE

Using extended reality to enable inclusive communication for the hearing impaired.

Team members: Tomas Trescak¹⁹, Anton Bogdanovych¹⁹, John Cass¹⁵, Tamara Watson¹⁵.

The enterprising project 'Using extended reality to enable inclusive communication for the hearing impaired' aimed to study and deliver inclusive technology intended for real-time transcription of conversations using Augmented Reality technology. This innovative technology is capable of being used in a variety of conditions and is intended to significantly improve social interactions for its hearing-impaired users. The team successfully implemented a prototype which used Microsoft Azure cloud to automatically transcribe and translate conversations, and the Hololens Augmented Reality Headset to visualise it in an augmented space. The prototype is capable of transcribing conversations, translating multiple languages, and generating subsequent visualisation in augmented space in real time, and applies automatic subtitle position based on face recognition of the speaker.

The team recognised the need to mitigate the cognitive load arising from processing imperfect subtitles, so that users were not prohibited from perceiving the environment and were able to safely maintain eye contact whilst moving. Therefore, a key aim of the project was to study and define guidelines for Augmented Reality subtitles with imperfect transcription. To establish a baseline for their experiments, the team used 2D video via the Pavlovia platform, as opposed to AR. This decision was intended to allay the real risk of COVID-19 spread from sharing a headset with multiple participants. Following these preliminary experiments, the team began trials in which they examined different configurations for subtitle placement and visualisation, to achieve the lowest cognitive load and best comprehension rate.



Acknowledging the challenges posed by COVID-19 such as an inability to run experiments with human participants, the team pivoted to running experiments on-screen using video.

Team leader Tomas Trescak described this switch as being both '*challenging and exciting, allowing us to brainstorm ideas on how we can simulate the same experience as in an AR headset, including different light conditions or imperfect translations due to noisy environments.*'

The team collaborated with industry partner HearForYou to proceed with AR experimentation after establishing the ideal target audience. In an increasingly technologically augmented society, this extended reality technology enhances inclusive communication, to increase quality and ease of daily life for hearing impaired users.

“This research will help design a new generation of AR experiences, outlining cognitive aspects and user experience criteria. There is an increased interest in the industry such as Epson or Google to design a new generation of devices that will use such technology, enhance cultural experiences for deaf and hard of hearing, or enable automated translations for people in foreign countries.”

DR TOMAS TRESCAK

PROJECT TITLE

Documenting Creative Cultural Wellbeing in Challenging Times

Team members: Karin Mackay¹⁰, Jennifer MacRitchie¹¹, Kylie Budge^{11,12}, Sandra Garrido¹⁵, Lyn Tieu^{1,10}.

A pivotal project emerging in 2020 was 'Documenting Creative Cultural Wellbeing in Challenging Times'. This project researched how Arts have been used during times of crisis, through the 'Art in Times of Change' survey. The 216 survey respondents responded to questions about their usage of the Arts, and how this impacted their wellbeing during events such as the pandemic, bushfires and floods.

Survey findings revealed that while there had been an increased usage of the Arts, and that the Arts momentarily helped mitigate poor mental health during lockdown, participants were more likely to engage in passive versus active creative activities. Increased satisfaction was uneven and somewhat mediocre in comparison to other studies concerning the benefits of Arts.

This suggests that a crucial missing component in participants usage of the Arts was the ability to participate socially and to share a dialogue with other people. The importance of social connectedness in Arts practice is of particular relevance during the COVID-19 pandemic.



Karin Mackay. *SOS (Save Our Ship)*. Acrylic on canvas (2021).

As COVID-19 has necessitated social distancing and isolation, it has been difficult to access the more meaningful reasons for engaging with the arts. The team will continue to explore how art making influences our identities and social connectivity, and to determine how this impacts on cultural wellbeing. Thus, future directions for the project will involve

collaborating with arts and health organisations to co-design projects investigating arts and wellbeing, as well as resultant health outcomes. As COVID-19 continues to impact our global world, finding ways to meaningfully connect through arts creation to improve health and wellbeing is more vital than ever.

PROJECT TITLE

Producing Culturally Appropriate Public Health Messaging: Evaluating and Developing Rapid Response CALD Communication Strategies for NSW focussed on public health messaging around COVID-19 for and with culturally and linguistically diverse communities.

Project Team: Caroline Jones^{1,2}, Tinashe Dune², David Lim², Brahm Marjadi³, Mustapha Taibi⁴, Emilee Gilbert⁵, Ping Yang⁴, Chong Han⁴, Cathi Best^{2,4}, Ann Dadich⁶, Mark Antoniou¹, Weicong Li¹, Robert Mailhammer⁴, Hannah Sarvasy¹, Alex Hawkey², Renu Narchal⁵, Mengistu Amberbera, Debra Aaronsa, Stephen Dohertya, Stephen Conatyb, Kylie Smithc, Ainslie Cahilld

The project's focus is currently on countering coronavirus vaccine hesitancy within multicultural communities. Many Western Sydney families are multilingual and culturally diverse, and the pandemic has made it clear that precise, accessible and efficient translation of public messaging is critical. The team's research seeks to identify successful collaborations in messaging across Western Sydney to identify how they can act as future models. It also aims to produce accurate and culturally appropriate messaging, and to identify how improved processes in translation can build into more effective health messaging in Western Sydney. Professor Jones and her team invited collaboration with local councils and community centres to document local success stories in COVID-19 messaging. They also collaborated with schools as they navigated communicating with families. The team has connections with industry partners, including the Australian Institute of Interpreters and Translators (AUSIT), the National Accreditation Authority for Translators and Interpreters (NAATI) and Multicultural NSW. It is evident that engaging with local organisations to research public health messaging during the pandemic is timely and significant, and that as the pandemic continues, this work will continue to be a crucial resource.

PROJECT TITLE

CANAL: Cannabis for Endometriosis related pelvic pain – an Australian Longitudinal study

Project Team: Mike Armour¹, Carolyn Ee¹, Justin Sinclair¹, Andrew Proudfoot¹, Mitchell Low¹, David Pate¹, Jason Abbott^{a,e}, Cecilia Ng^e, Chris Spies^f.

Lead by Dr Mike Armour, 'CANAL: Cannabis for Endometriosis related pelvic pain – an Australian Longitudinal study' explored the use of vaginally delivered cannabinoids for pain related to endometriosis. Endometriosis affects one in nine women and those assigned female at birth in Australia by the age of 44, making it as common as diabetes or heart disease. Common symptoms include severe period pain, pelvic pain, pain when using the bathroom, digestive issues similar to IBS and fatigue. Previous research has identified that endometriosis has negative impacts on almost every aspect of their life, from personal relationships, academic performance, work, and romantic relationships. Opioid analgesics are not recommended for persistent pain due to both a lack of efficacy and safety concerns. However, despite this they continue to be prescribed; women with endometriosis having a 4 times greater risk of chronic opioid use compared to women without. This often results in impossible choices between being in pain and the worry of dependence, addiction and impairment. Effective pain relief with a low to negligible risk of addiction is the holy grail for women with endometriosis. Medicinal cannabis shows promise in providing significant relief for a range of the most bothersome symptoms of endometriosis such as pelvic pain, sleep issues and gastrointestinal pain while having very few significant side effects, and no known risk of overdose. Yet, it is currently under-utilized as part of mainstream medical therapy due to lack of high-level evidence and has a significant out-of-pocket cost that means it is out of reach for many women with endometriosis that desperately need effective symptom management.



“ We know people with endometriosis are commonly using illicit cannabis due to finding it an effective form of symptom control, and our team wants to ensure that they have access to safe, regulated and quality controlled medicinal cannabis. The first step in this process is to ensure we have research to support its use.

Medicinal cannabis is not a one size fits all single product, but rather a toolbox, with inhaled, ingested and suppository forms all having different actions and affects and these may be chosen depending on the symptoms to be treated and desired effects.

This work is guided by the community and is fundamentally all about prioritising and understanding community needs. ”

DR MIKE AMOUR

The team's research is an important first step in providing solid scientific evidence, informed by the needs of the endometriosis community itself.

Within the first year, the team achieved several exciting developments, including two new commercial relationships, three new collaborations, and Category 1 applications.

The various commercial and clinical outcomes which have arisen since the project's inception clearly demonstrate the significance and applicability of this important project to the community.



PROJECT TITLE

I see you: Understanding and enhancing the experience of video calls in supporting social connection and communication in early childhood

Project Team: Christa Lam-Cassetari¹, Virginia Schmied⁸, Paola Escudero¹, Nicole Traynor¹.

This study explored how parents and grandparents of babies and young children, five years and under, incorporate digital communication opportunities in their lives, during COVID-19 and beyond.

The COVID-19 pandemic highlighted a significant side effect for families wanting to maintain grandparent/grandchild relationships, particularly for grandchildren born during this pandemic. Families had to work hard to maintain contact with each other whilst taking extra precautions for family members in the age group with the most adverse outcomes to the SAR-COV-2 virus (70+ year olds), or coping with the many border closures and lockdowns through 2020. We conducted a survey of parents and grandparents to understand their experience relying on video chats to keep in touch when they wanted to maintain social connection with children aged 0-5 years.

Of those surveyed, on average, grandparents video call two to three times a week with their grandchildren, for about five to ten minutes. They mostly used FaceTime and Facebook Messenger, as apps that are already available on their phones. About 40% of grandparents surveyed began using video calls with their grandchildren for the first time during COVID-19. For all those surveyed, it was a mostly positive experience.

Grandparents say the calls allow them to stay connected with their grandchildren - with respondents talking about “being a part of their lives” and “not missing seeing them grow”.

But there are challenges. Not surprisingly, the greatest challenge was maintaining children’s attention during the calls. For some, the interaction was “artificial and detached”. Other parents described the experience as stressful, noting the call had to be at “right time”. As one parent noted of her one-year-old daughter, “she gets overstimulated and then will not go to bed”. Some grandparents also expressed concern that it was an additional burden for parents and efforts were abandoned.

The authors provided tips for grandparent children interactions in a [Conversation article](#) in July 2020.

“Because it’s so frequent - almost daily - I know their environment, it feels, normal. There’s no shyness, we can start a book one day and continue each day. We walk around theirs and my apartment and garden and I just feel part of their lives.”

A WOMAN WITH GRANDCHILDREN OVERSEAS

NEW INITIATIVES:

WESTERN INFANT AND YOUNG CHILD FEEDING COLLABORATIVE

The first 1,000 days, from conception to age two years, is a critical period for growth and development, and a period when diet quality is more important than at other times of life. Children's nutritional needs are unique, and important in laying down the foundations of healthy growth and development. Yet young children around the world are being deprived of the diets they need at the time in their life when it matters most. Children's diets are failing in quality, frequency, and diversity. In the recent 2021 UNICEF child nutrition report, results shed light on how children's diets are falling short of global recommendations and young children are fed to fail.

Furthermore, during times of crisis like our current pandemic, drivers of poor diets such as inequality, globalisation, urbanisation, and socioeconomic costs are heightened. At a time in the child's life when they require acute feeding care – actions lie beyond the control of individual families, yet families are largely left alone to bear the consequences. What can be done for children now and in the future to ensure they are fed to thrive?

The WSU Infant and Young Child Feeding Collaborative brings together the expertise of an interdisciplinary team of researchers. Our shared vision is to ensure infants and young children, their parents and carers thrive through optimal nutrition in nurturing environments, locally and globally. A cornerstone of the work of the Collaborative is understanding experiences of infant and young child feeding, including experience of infant feeding particularly sustaining breastfeeding in difficult or adverse circumstances such as the bushfires and finding ways to support them so their children are well fed now for their future.

The Infant and Young Child Feeding Collaborative values:

1. Parent and child-centred practice

Our projects and initiatives place infants, children, mothers, fathers, other parents, carers and their communities at the centre of any and all research.

2. Equitable access to services and support

With a purposeful focus on disadvantage and adversity.

3. Partnership and co-design

Working alongside parents, families and communities.

4. Culturally appropriate, trauma-informed care

Delivered by a responsive health system and well-trained health care staff.

5. Local solutions with a strong global reach

Current projects are grounded in contemporary local and global issues identifying and testing realistic, accessible solutions for the most at-need groups.



EXEMPLAR PROJECTS

In all our research and community engagement activities, the Infant and Young Child Feeding Collaborative values true co-design, and impactful and respectful research.

- Breastfeeding in the first two years of life: evidence from a cohort study in Sydney: Dr Ritesh Chimoriya and A/Prof Amit Arora
- Return to Work and Breastfeeding - National Survey: A/Prof Elaine Burns, Prof Susanne Gannon, Dr Sky Hugman, Dr Heather Pierce
- COVID-19 – Breastfeeding policies and practices around the globe: Adj A/Prof Karleen Gribble
- Codesigning Mother Infant Caring Communities to Support Breastfeeding: Prof Virginia Schmied, A/Prof Elaine Burns, A/Prof Athena Sheehan
- Sharing Parenting Stories and Love – a codesigned online parenting program for culturally and linguistically diverse parents: Prof Virginia Schmied and Dr Cathy Kaplun
- 'Breastfeeding with ABA': Social Media and Breastfeeding Peer Support: Dr Nicole Bridges, Nicole Donaldson
- Dietary trajectories and health outcomes in early childhood: Dr Narendar Manohar and A/Prof Amit Arora
- The implications of shifting from 7 food groups to 8 food groups in feeding practices. A/Prof Kingsley Agho
- Feeding My Child: How Mothers Experience Nutrition Across the World. A Companion Report to The State of the World's Children 2019: Prof Virginia Schmied, Dr Juliano Diniz De Oliveira, Dr Catharine Fleming, Kaitlyn Hockey, Dr Girish Lala, Dr Georgina Theakstone, Prof Amanda Third.
- What constitutes brilliant tube-feeding care? Perspectives from Australian clinicians and carers: A/Prof Ann Dadich and Dr Cathy Kaplun

GLOBAL UNIVERSITY CLUSTER ON SUSTAINABLE DEVELOPMENT GOAL 3 FOR HEALTH AND WELLBEING (SDG3 CLUSTER)

Under the auspices of the International Association of Universities (IAU), the Global University Cluster on Sustainable Development Goal 3 for Health and Wellbeing, the “SDG3 Cluster” was created in 2019, as part of the IAU’s Higher Education for Sustainable Development Global Cluster program. Through international collaboration, joint teaching, exchange projects and research, this initiative aims to advance the work and the visibility of higher education in relation to the United Nations 2030 Agenda on Sustainable Development.

Health and Wellbeing Theme Champions Prof Virginia Schmied and Prof Paul Breen have represented WSU on the SDG3 cluster working group since its inception.

The SDG3 cluster is focusing on:

- Bridging the knowledge/policy gap by informing policy dialogues around the priorities of this cluster, particularly as they relate to the SDGs.
- Promoting the consideration of local needs and voices in university research and teaching, as well as public policy, through an increase in higher education institutions’ engagement with communities and other activities of the cluster.
- Encouraging the inclusion of the concepts of equity and integrated, patient-centred approaches to health in university curricula, as well as the role of health in achieving progress in other fields, with the 2030 Agenda as a framework for a systems approach to higher education.

- Harnessing the power of online working and e-health methodologies and tools to encourage learning, leverage knowledge and resources across the network, and promote academic research and policymaking that are informed by all relevant stakeholders.
- Fomenting cross sector collaboration and a systems approach to advancing SDG3.
- An initial in-person meeting with cluster members was planned for March 2020 which unfortunately had to be postponed due to the pandemic. Nevertheless, while operating in a challenging context, the cluster made good progress through 2020/2021, aligning towards a common strategy and delivering a very successful webinar in October 2020.

Four key inter-related areas have been identified as strategic to the members: advocacy, curriculum, community engagement and remote/e-health working and teaching. The cluster aims to take an interdisciplinary approach to health with a specific focus on equity.

- **Priority area 1:** Joint advocacy and helping to bridge the knowledge/policy gap
- **Priority area 2:** Increasing higher education institutions’ local and regional engagement with communities
- **Priority area 3:** Integrating the SDGs into the higher education curricula
- **Priority area 4:** Digital health and online teaching and learning
- **Cross cutting:** Promoting a systems approach and cross sector collaboration
- International webinar October 2020

- Given the current COVID-19 context, all universities / health sectors have seen an acceleration of remote working, teaching, and in the delivery of health. Irrespective of the pandemic, this trend is likely to continue as blended approaches are emerging as a way forward, both in delivering health and health care education.
- The cluster co-developed and delivered a successful webinar, jointly hosted by the IAU and the UoC.

Some of the key learnings from the webinar delivered in October 2020 entitled Higher education under examination: are we ready to train the future healthcare workforce? were:

- The pandemic has led to an acceleration of health and higher-level education delivered or facilitated by electronic means; a trend likely to continue.
- Digitalization has in some contexts helped increase access to health and opened the door for, or accelerated the implementation of, a patient centred health approach.

The following challenges were identified:

- Managing open data/data mining/sensitive patient data
- Addressing the digital divide
- Skills gaps around remote teaching, digital tools and patient centred health.
- Addressing increasing administrative burdens of health professionals and mental health issues arising from overwhelm.

The webinar outcomes are reported in the recent IAU newsletter.

SDG3 CLUSTER MEMBERS



Universitat
Oberta de Catalunya
SPAIN



Universidad
de Caldas
COLOMBIA



Universitas
Gadjah Mada
INDONESIA



Karolinska
Institutet
SWEDEN



University of
Public Health
UGANDA



Western Sydney
University
AUSTRALIA



University
College Dublin
IRELAND



Makerere
University
UGANDA



International
Association of
Universities

HEALTH AND WELLBEING

RESEARCH SHOWCASES AND THEME STORMS

In 2020 and 2021, the Health and Wellbeing Theme showcased research findings and advancements in webinars and theme storms, including the ‘Arts, Health and Wellbeing: Moving Ideas and Innovations Forward’ theme storm, which generated lively discussion and shared research outcomes. These discussions continued across Research Week, specifically during the ‘Bold Plans for Better Health’ and ‘Sports, Health, and Society’ conferences.

BREASTFEEDING IN TIMES OF ADVERSITY AND DISRUPTION (OVER 300 PARTICIPANTS)

This webinar addressed concerns about the decreasing rates of breastfeeding in our communities and some of the challenges experienced by mothers breastfeeding their babies in this time of significant disruption such as the pandemic. We were very pleased to welcome **Professor Gill Thomson** Director of the Maternal and Infant Nutrition and Nurture Unit at the University of Central Lancashire UK as the keynote speaker. Professor Thomson presented on “Assets Feeding Help Before and After Birth (ABA): using genograms in breastfeeding support”.

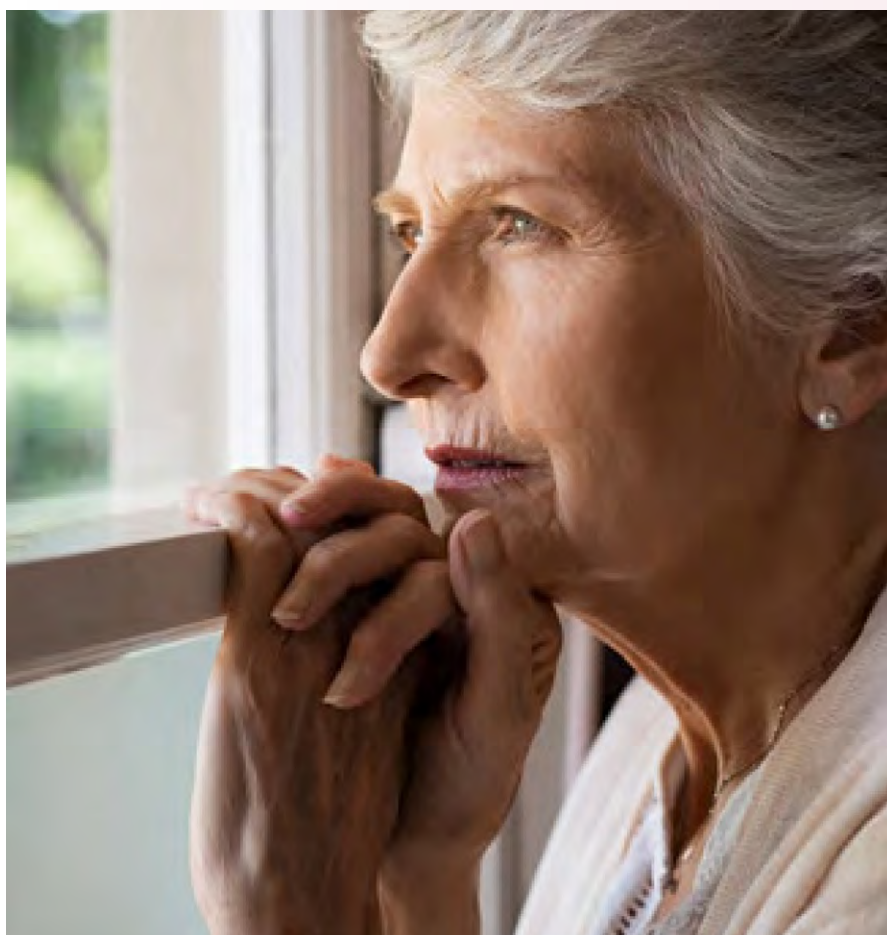
DEPRESSION, CO-MORBIDITY, AND INTEGRATED CARE: CROSS-DISCIPLINARY MODELS OF CARE

In November 2021, the School of Psychology and the Health and Wellbeing Research Theme held a forum on Cross-Disciplinary Models of Care – an important issue highlighted in the Western Sydney University White Paper “**Depression, Co-Morbidity, and Integrated Care.**” This online event examined the need for clinicians, researchers, and consumers to work together to support the complex health and wellbeing needs of people living with both depression and another physical or mental illness. Contributing to the presentations were Ms Lisa Abraham and Ms Cindy Meler, who

spoke about providing psychological support for people with diabetes and associated complications; Ms Kate O’Reilly, who spoke about the lived experience of women following traumatic brain injury and depression; and Ms Elizabeth Lowrie and Professor Virginia Schmied, who spoke about facilitating integrated perinatal mental health care. A panel of experts including Dr Anthony Brown, Professor Phillipa Hay, and Dr Carolyn Ee took part in a panel discussion to consider the challenges and opportunities of interdisciplinary care.

FEEDING OUR CHILDREN FOR THE FUTURE (OVER 200 PARTICIPANTS)

This webinar focused on the current quality and measurement of children’s diets, along with the barriers to healthy eating in early childhood. This was followed by sessions that explored feeding during a time of crisis and the impact of the COVID-19 pandemic on infant feeding. We welcomed our keynote speaker, Linda Shaker Berbari, Infant Feeding in Emergencies Core Group Facilitator, Emergency Nutrition Network (ENN) who discussed “Infant and Young Child Feeding Programmatic Adaptations in the Context of COVID-19”.



ARTS, HEALTH AND WELLBEING: MOVING IDEAS AND INNOVATIONS FORWARD THEME STORM

Hosted by the Health and Wellbeing Research Theme and co-led with Dr Karin Mackay, School of Education. The 'Arts, Health and Wellbeing: Moving Ideas and Innovations Forward' theme storm was a stimulating and timely discussion of the intersection between creative arts practices and health and wellbeing research. Kicking off proceedings, Ms. Dolla Merrillees, the newly appointed Director of **Western Sydney Creative** spoke on the overarching importance of supporting the health and wellbeing of both communities and frontline workers. She stated,

"I'm a firm believer that the arts can be enlisted to assisting and addressing a number of difficult and pressing challenges."

Western Sydney researchers have articulated innovative, overarching frameworks that draw together work on arts, health, and wellbeing. For example, Dr Mackay (School of Education) introduced a 'Cultural Wellbeing Framework: A Nexus Model for Living Well' as a way of using art to understand relationships interpersonally and globally. Dr Alison Short (SHCA) presented on the use of music to enhance health and wellbeing (as outlined in the **Sounding Out White Paper**.)

Prof. Gawaian Bodkin-Andrews (Director of Indigenous Research) spoke on the importance of prioritising Indigenous narratives in all wellbeing discourse, while Alison Barnes (School of Nursing and Midwifery) emphasised the significance of Indigenous cultural determinants-driven health policy. Finally, Dr Arianne Reis (School of Health Science (SHS)) and Dr Nicole Peel (SHS) proposed examining arts and health through the lens of leisure. The interrelatedness of art and wellbeing in our communities and environments ran throughout all presentations and discussion, as expressed by Alison Barnes from the School of Nursing and Midwifery who said, "Art is not separate to life, art is life, art is culture, and culture is life."

Following the presentations, participants brainstormed bringing creative practice to healthcare, navigating arts engagement during the pandemic, and using art to disseminate research outcomes.

PROPOSALS INCLUDED

- Developing interdisciplinary units within the university
- Taking ideas outside of the university to hospitals and galleries
- Working with arts funding bodies
- Introducing placements with arts community organisations

Strategies were proposed for engaging with Indigenous pedagogies, and for reducing barriers and inequities in delivering therapeutic uses of the arts.

Future directions focussed on opportunities to think differently about how we deliver therapeutic use of the arts, notably including opportunities for teaching and learning as well as research, such as developing subjects in therapeutic uses of the arts, using telehealth to deliver music therapy, and working alongside creatives to apply for Arts scholarships through the Arts council (among other creative funding bodies).

SHOWCASING WSU ARTS, HEALTH AND WELLBEING RESEARCH AND EXPERT PANEL

8 December 2021.

During rapid fire presentations, 11 WSU researchers discussed bringing creative practice to healthcare, navigating arts engagement in challenging times, and using art for collective wellbeing. Projects encompassed the interconnection between health and music, arts therapy, dance, storytelling, and more.

They emphasised the following key messages:

- Creative arts are an integral component of key health frameworks.
- Arts, creativity and culture are vital to staying connected, and experiencing and sharing stories.
- The arts can support healing for individuals and communities. Arts can play a major role in disaster recovery programs
- Art has a critical role in 'healing and truth telling' through discovering a connection to country.
- Communities that have been traumatised can use the arts to heal. Performance and drama can act as a mirror, offering a place for storytelling and healing.

- Museums, galleries and other creative spaces have increasingly stepped up to develop programs in, with, and for the broader community and doing more with the tertiary education sector. There are opportunities to use museums and galleries as spaces where people can build and strengthen connections.
- It is important to broaden the scope of what a cultural space is and who accesses these. In regional galleries most participation is from diverse members of the community, particularly those who are less resourced.
- Health and art are not well integrated in health services but play an important role in health and social inclusion. Arts have important applications in mental health as well as in acute areas such as surgery. Increasingly arts leaders are engaged in how to use the arts to create positive spaces in health settings.
- There is a need to build a culture where an arts and health connection is acceptable and valid in health services. Arts are a great way of speaking to policy makers and service designers as well as a facilitating data collection around lived experiences and to disseminate findings to diverse audiences.

- It is important to work with undergraduate students from the beginning of their practices in medical and health sciences so that they understand the value of creative arts in health and recovery from illness.

OUR PANELLISTS, LEADERS IN ARTS AND HEALTH

- **Jade Lillie:** Head of Industry Development, Australia Council for the Arts
- **Brett Adlington:** CEO, Museums and Galleries NSW
- **Leanne Tobin:** Dharug Multidisciplinary Artist and Educator
- **Josephine Chow:** Professor and Director Strategy & Partnerships; Deputy Director, Research and Professor, Nursing & Midwifery Research Alliance SWSLHD
- **James Arvanitakis:** Professor and Executive Director - Australian American Fulbright Commission at Australian American Fulbright Commission and Adjunct Professor Institute for Culture and Society, WSU
- **Janette Perz:** Professor and Director - WSU Translational Health Research Institute (THRI)

SPORT, HEALTH AND SOCIETY

RESEARCH WEEK: Bold Research Futures

25 October 2021

On day one of Research Week, Western researchers, higher degree research students, and industry partners came together in a robust discussion of Sport, Health and Society. Presentations showcased current and ongoing research and engagement activities intended to improve health, wellbeing, and social connectedness through sport. The session included the launch of the 'Sport, Health and Society White Paper', rapid-fire presentations on community engagement initiatives between sporting clubs, industry partners and the University, and a sport industry panel discussion.

Prof Kevin Dunn (Pro Vice-Chancellor Research) emphasised that Western research on sport, health and society 'looks forward, it doesn't just look back,' and further expressed that all projects demonstrated the 'commitment of our researchers to the diverse community of Western Sydney.' Prof Tony Rossi introduced the White Paper, noting that as we learn to live with COVID-19, the innovations and interventions highlighted within the paper are impactful on community health and wellbeing.

Rossi's sentiment was echoed by keynote speaker Aaron Warburton (CEO, Canterbury-Bankstown Bulldogs), who in discussing the Bulldogs' partnership with the University stated that 'such work is 'built on engaging the community' and 'making a difference to people's lives.' The theme of community engagement was highlighted across all presentations. Andrew Bennie (SoHS), Dr Emma George (SoHS), Neil Hall (SoHS),



Jess Richards (SoBus), and Sarah Cavallin (SoHS) delivered thought-provoking and illuminating presentations on a range of sports-related research projects and industry partnerships intended to engage the community and support the sports sector. Presenters were insistent on close collaboration and community engagement now as well as into the future. Jess Richards foresaw 'working further with [sports fans] and building further relationships,' and Dr Emma George anticipated continuing evidence-based approaches in close partnership with industry. Likewise, Dr Neil Hall insisted that the 'key to success' is to 'have everything as collaboration.'

Participating partners in the Sport Industry Panel Discussion all complimented Western researchers for their prolonged engagement with clubs and organisations, and for conducting research that is community focused and engaged, with Mardi Aplin (Netball NSW) insisting that the 'biggest thing is our connections.' Other panelists Fayssal Sari (Bulldogs) and Joshua Drayton (Paramatta Eels) were in firm agreement that their close partnerships with Western researchers have facilitated meaningful engagement, impactful research, and mutual benefit to all parties.

BOLD PLANS FOR BETTER HEALTH: COMMUNICATION, TECHNOLOGY AND COLLABORATION

PART OF RESEARCH WEEK: Bold Research Futures

27 October 2021

The Health and Wellbeing theme welcomed presenters and audience members to 'Bold Plans for Better Health: Communication, Technology and Collaboration' as a part of 'Research Week: Bold Research Futures' at Western. Keynote speakers, Kate Ebrill from CSIRO eHealth and Dr Liliana Laranjo, WARC (Westmead Applied Research Centre) discussed approaches to building strong clinical-industry-university collaborations. Western researchers discussed Health & Wellbeing Theme Seed funded projects, and industry partners outlined initiatives across communication, technology and collaboration in healthcare.

Kate, who works with the Australian e Health Research Centre of CSIRO as the product and programme lead for clinical terminology and data interoperability, has over 20 years of experience in leading delivery and implementation programs in health care with a key focus on initiatives that drive the adoption of standards to enable an interoperable, digital health system. Kate discussed her work in the global business development of Ontoserver and other associated products, working with government, healthcare and industry organisations to enable the meaningful adoption of clinical terminologies. Kate is also lead for the National Primary Care Data Quality Programme, delivering agreed data models, terminology and FHIR Implementation Guides to support interoperability in primary care. She outlined the necessity for healthcare initiatives to be go beyond theoretical approaches. She discussed her work delivering initiatives which drive the implementation of standards to

enable an interoperable, digital health system, maintaining that above all 'data has to be useful for [clinicians]'. A key message from Kate was the importance of engaging with the end users of research from the start. data and data systems but be useful for clinicians.

Dr Liliana Laranjo (Senior Lecturer in Community and Primary Health Care Practice, WARC) next discussed digital approaches to health behaviour change and chronic disease prevention. Liliana's discussion directly aligned with Kate's, emphasising the importance of 'pragmatic and real world approaches.'

The importance of making sure healthcare initiatives are accessible to consumers emerged across the presentations of seed funded work from 2020-21. Explaining that traditional methods can be time-consuming and inaccessible, Dr Jerry Zhou outlined the benefit of 'leveraging technology we have at home' in the summary of his team's anorectal device. Dr Gough Liu next outlined his team's work on 'Vital Sensor', an intervention into the fields of physiological sensing medical equipment. Explaining her work building partnerships to transform South Western Sydney into a dementia friendly region, Dr Diana Karamacoska's presentation shared thematic parallels with A/Prof Shameran Younan, who addressed promoting mental health literacy in Arabic speaking communities. Shameran highlighted the intersection across all presentations of devising initiatives which are directly useful for clinicians and accessible for targeted communities. She stated that each presentation shared a common theme of 'communication and collaboration,' especially when working with culturally and linguistically diverse communities. Likewise, the importance of centering CALD communities arose in Mustapha Taibi's discussion of producing culturally appropriate public health messaging in NSW (project led by Prof Caroline Jones).

The day concluded with a panel discussion on what makes a strong partnership, with A/Prof Gaetano Gargiulo, Dr Mike Amour, and their respective external partners Neil Anderson (CEO of 3 Aim Solutions), and Alexis Wolfe (CEO of Endometriosis Australia). The panel also emphasised prioritising and understanding community needs, with Mike insisting on the cruciality of being '*guided by the community*'. Alexis Wolfe agreed that 'translating information to make it digestible' for community members is key to any impactful work. Turning to what contributes to ongoing partnerships, Alexis and Neil agreed that a willingness by researchers to understand the work in a clinical or commercial context fosters trust. This sentiment was echoed in the chat emerging at the day's conclusion, with Diana Karamacoska saying, '*being able to leverage existing community organisations and making sure that something lives on after the researchers exit the project*' is fundamental to the long term success of any healthcare initiative.

Across all the robust and enthusiastic presentations, a resounding commitment to continuing collaboration between health consumers, clinicians, researchers, and industry emerged as a pivotal means of achieving Bold Research Futures.

APPENDIX

2020 SEED FUNDED PROJECTS

See reports on pages 14-19

Additional seed funded projects in 2020:

Project title:

'Characteristics, conditions and symptom burden of people using an integrative healthcare centre.'

Team members:

Suzanne Grant¹³, Carolyn Ee¹³, Kate Templeman¹³, Michael de Manincor¹³, Emily Yang¹³, Kathy Tannous⁶, Jennifer Reath³, Jeffery Dusek^v, Nicole Avard^w, Jarrah Eddy^v

Project title:

'Mapping the care needs of nursing home residents.'

Team members:

Karen Liu¹⁴, Nikki Tulliani¹⁴, Loren Pordage^x, Adventist Aged Care Sydney^y

IN COLLABORATION WITH ENVIRONMENT & SUSTAINABILITY

Project title:

'Innovative cultivation, evaluation, and enhanced health application of Chinese medicinal herbs in Australia and China.'

Team members:

Xiao-Shu Zhu¹⁴, Yi-Chen Lan¹⁵, Zhong-Hua Chen¹⁶, Chun-Guang Li¹³, Yi Guo⁹, Roger Attwater¹⁷, Shengli Wei^z, Mingke Tang^z, Josephine Lam AOM^{zz}

2021 SEED FUNDED PROJECTS

Research projects granted funding in 2021 under the Health and Wellbeing Theme and in collaboration with the Education and Work and Urban Living Futures Themes.

Project title:

'Menstruation Matters: An online intervention to improve menstrual health literacy.'

Team members:

Mike Armour¹, Kath Holmes², Donna Ciccio^a, Caroline Smith^{1,3}, Tania Ferfolja², Christina Curry², Freya Macmillan^{3,4}

Project title:

'Improving prolonged procedural care: Uses of music to address quality of life (QoL) and anxiety in selected applications.'

Team members:

Alison Short⁵, Neil Hall^{3,6}, Tina Reid⁵, Caroline Smith^{1,3}, Angela Markis^b, Gregory Webb^c, Natasha Andredis^d

Project title:

'Exercise diagnosis of heart-lung function in health and disease.'

Team members:

Simon Green⁴, Chloe Taylor⁴, Belinda Cochraine⁷

Project title:

'Childhood overweight/obesity prevention and management in dental settings.'

Team members:

Amit Arora⁴, Li Li⁸, Louise Baure, Kirsten McCaffery^f, Sameer Bhole⁹, John Eastwood^h, Li Ming Wenⁱ, Shirley Alexander^e, Kyra Simⁱ, Andrea Lenard^k

Project title:

'Towards the next generation of truly wearable biomedical monitor: Precision physiological feature extraction using Morphic Sensors.'

Team members:

Gaetano Gargiulo⁹, Paul Breen¹⁰, Upal Gunawardana⁹, Neil Anderson^l, Aiden O'Loughlin⁷

Project title:

'Tetrathiomolybdate and Curcumin Loaded Nanoparticle Delivery System as a Chelation Therapy for Triple Negative Breast Cancer.'

Team members:

Michelle Liu¹, Tara Roberts^{7,m}, Dennis Chang¹

Project title:

'Smart Watch Digital Health Technology for Next Generation Psychology Virtual Care.'

Team members:

Gough Lui¹⁰, Titus Jayarathna¹⁰, Paul Breen¹⁰, Mark Antoniou¹⁰, Dervla Laughnaneⁿ

Project title:

'Improving the mental wellbeing of Arabic speaking refugees: a whole of community mental health promotion program.'

Team members:

Shameran Slewa-Younan^{3,7}, Andre Renzaho³, Russell Thomson¹¹, Ilse Blignault³, Gabriela Martinez^o

Project title:

'Micronutrient levels and symptom burden of patients attending an integrative oncology service in an Australian Cancer Hospital.'

Team members:

Suzanne Grant¹, Carolyn Ee¹, Judith Lacey^{1,p}, Ki Kwon, Ashanya Malalasekera^q, Haider Mannan⁷

IN COLLABORATION WITH URBAN LIVING FUTURES

Project title:

'Building partnerships to transform South Western Sydney into a dementia-friendly region.'

Team members:

Diana Karamacoska¹, Gen Steiner¹, Nicky Morrison⁶, Ann Dadich⁷, Cameron McAuliffe⁶, Michelle DiGiacomo⁴, Sandra Loyola-Sandoval¹, Jennie Pry⁶, Tina Britton⁸



IN COLLABORATION WITH URBAN LIVING FUTURES

Project title:

'My Place: An app for young people in out-of-home-care (foster care) and their carers and case workers.'

Team members:

Milissa Deitz^{5,13,14}, Rachel Morley^{5,13,14}, Amanda Third¹⁴, Rebekah Grace¹⁵

IN COLLABORATION WITH EDUCATION & WORK

Project title:

'Cultural Immersion Program (Western CIP): A Western Sydney University Community Engaged Teaching Strategy to Enhance Students' Learning of Cultural Issues Relevant to Health Care.'

Team members:

Olayide Ogunsiji¹⁶, Tinashe Dune⁴, Valentine Mukuria¹⁷, Renu Narchal¹⁸, Neil Hall⁶, Melissa Monteiro⁴, Kamalie Dabboussy⁴

IN COLLABORATION WITH EDUCATION & WORK

Project title:

'Mental health in the workplace: co-designing resources to enhance leadership, emotional intelligence and the new work@home workplace.'

Team members:

Diana Jeffries¹⁶, Virginia Schmied¹⁶, Evelyn Smith¹⁸, Rachel Bentley⁵, Ann Dadich¹², Paul Glew¹⁶, Aileen Pamonag Lane¹⁶

WESTERN SYDNEY UNIVERSITY SCHOOL/INSTITUTE/CENTRE

1. NICM Health Research Institute
2. Centre for Educational Research
3. Translational Health Research Institute
4. School of Health Sciences
5. School of Humanities and Communication Arts
6. School of Social Sciences
7. School of Medicine
8. School of Science
9. School of Engineering, Design and Built Environment
10. The MARCS Institute
11. Centre for Research in Mathematics
12. School of Business
13. Writing and Society Research Centre
14. Young and Resilient Research Centre
15. Transforming early Education And Child Health Research Centre
16. School of Nursing and Midwifery
17. Alumni & Employer Collaboration & Partnerships
18. School of Psychology

EXTERNAL PARTNERS

- a. Endometriosis Australia
- b. Renal Supportive Care, Liverpool Hospital South Western Sydney Local Health District
- c. Cancer Services Liverpool Hospital South Western Sydney Local Health District
- d. Private Fertility Specialist
- e. The Children's Hospital at Westmead
- f. School of Public Health, University of Sydney
- g. Oral Health Services, Sydney Local Health District and Sydney Dental Hospital
- h. Community Paediatrics, Sydney Local Health District
- i. Health Promotion Service, Sydney Local Health District
- j. Childhood Obesity Prevention and Management Service, Sydney Local Health District
- k. Blacktown and Mount Druitt Oral Health, Western Sydney Local Health District
- l. Medical Monitoring Solutions
- m. Ingham Institute
- n. Virtual Psychologist
- o. Health Promotion, SWSLHD
- p. Chris O'Brien Lifehouse Comprehensive Cancer Centre
- q. University of Technology Sydney
- r. Canterbury-Bankstown City Council
- s. Population Health, South Western Sydney Local Health District
- t. Community Migrant Resource Centre
- u. Western Sydney Migrant Resource Centre
- v. Connor Integrative Health Network, Cleveland USA
- w. NEXT Practice Health, Erina
- x. ACDMweb
- y. Adventist Aged Care Sydney
- z. Beijing University of Chinese Medicine
- zz. Joyi South Pacific Holding Pty Ltd



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