

INDUSTRY CONSULTATION – 11 December 2019

Participant information

Uncle James Ingram, Wiradjuri Elder Wagga Wagga

Uncle James is a respected Wiradjuri elder who has championed for the Wiradjuri people his entire life through working with community organisations, government agencies and local Aboriginal land councils. He has been instrumental in setting up Indigenous housing, sewage systems and job programs for Wiradjuri people. Uncle James provides cultural walks around the Wagga area, teaching kids and adults about the Wiradjuri people.



Professor Michael Friend, Pro Vice Chancellor Research & Innovation, CSU

Michael has extensive international experience, having undertaken research in the UK and USA, and collaborated with researchers and educators from across the globe. He is a highly experienced researcher, having secured in excess of \$10m in external grant income as Principal Investigator and having led several national programs and projects, spanning fields of animal nutrition, farming systems research and participatory action research. Michael also has over 20 years teaching experience and is passionate about strengthening the University's existing partnerships in education and research, and developing new partnerships.



Professor Eleanor Gates-Stuart, Project Team lead, CSU

Eleanor joined CSU as Professor in Creative Industries in 2018. Previously, she held a Professorship in Technology and Art (Techno Art) at National Cheng Kung University in Taiwan. Eleanor is a National Academies Keck Futures Initiative (NAKFI) alumni, a program of the National Academies of Sciences, Engineering and Medicine - 'The Deep Blue Sea', continuing the momentum of the 'think tank' synergy of NAKFI with scientists and artists in the USA. Her research focus is primarily on scientific exploration and technology, both in the advancement of innovation and in communicating her artistic practice in new and innovative ways, questioning and engaging audience in art, science and technology. Eleanor's international research in Science and Art is diverse and collaborative.



PRESENTATIONS

Trent Dean, CEO, Mercy Connect



Trent leads Mercy Connect with a diverse range of executive experience gained from reputable, social purpose organisations, including Churches of Christ in Queensland and the Royal Flying Doctor Service. He has a broad background in health and ageing, community services, public housing, child safety, corporate governance, risk management, quality improvement, and assurance in both the not-for-profit and commercial sectors. Trent has led a number of clinical innovation projects, including a new mobile information system for aeromedical patients (which won two Australian Innovation / Digital Disruption awards), GP clinics delivered through video conferencing solutions. Trent will be delivering a presentation on his recent work involving a new Virtual Reality aeromedical training module.

Rachael Bryant, Manager, Technology Transfer and Industry Capability, Pork Australia Ltd



Rachael completed a Bachelor of Science (Animal Science) at the University of Adelaide. After graduating, she spent 18 months as a full time piggery attendant, and then 12 months overseeing compliance of RSPCA Australia's Approved Farming Scheme. She started with Australian Pork Limited (APL) in 2018. In her current role, she is responsible for the extension of technical information and resources to pig producers, engagement with both school and university level students, and coordination of APL's sponsorship of and participation in various industry events across Australia. Rachael will present an introduction to Australia's pig industry, what we do, and the opportunities immersive technologies present.

Dr Sam Bowker, presenting on behalf of Communication & Creative Industries' research in immersive creative technologies



Sam will present a synopsis of recent multidisciplinary research projects centred on co-production of virtual imaging and other technology partnerships. These include collaborative storytelling methods for immersive cinema and performance, new VR modes for dementia therapy, 3D resolution for visualisation in botanical studies (phytotomy and genetic

structures), holistic kinetic physio-vocal performance training, and extremely high-resolution photographic experiments for the advanced digitization of fragile and culturally significant textiles (gigapan khayamiya).



Dr Dominique Sweeney



Rafael De Lima



Samantha Dowdeswell



Timothy Cutchett



Coralie McKenzie



Bernard Higgins



Professor Eleanor Gates-Stuart



Assoc' Professor Marguerite



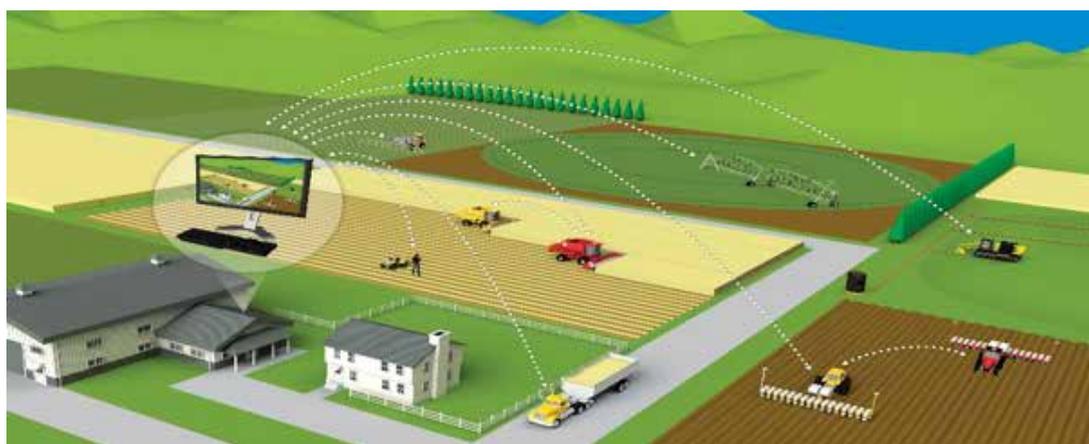
Dr Robert Lewis

Dominic Kennedy, Economic Development Officer, Wagga Wagga City Council



Dominic Kennedy is the Economic Development Officer at Wagga Wagga City Council. He has 20 years' business development and stakeholder engagement experience in the private sector and is now working on achieve 50% population growth in the region by 2038. Dominic will be discussing how the City of Wagga Wagga is working on major projects that will enable initiatives like the XRC Centre to develop and thrive in order to create the 15,000 new jobs the region will need over the next 20 years.

Dr Jonathan Medway – Senior Research Fellow – Spatial Agriculture, Graham Centre'



The School of Ag & Wine Sciences and Graham Centre are currently developing a plan to implement a Digital Twin project for the CSU farm and agricultural research facilities. The program will develop a comprehensive database of spatial, farm production, weather and infrastructure details to facilitate ongoing data collection, retrieval and analysis and provide a platform for extended reality access by the farm manager, researchers, students, industry and the wider community. In addition to the direct farm management, teaching and research applications of the platform, it also intends to provide a basis for robust demonstration and evaluation of a wide range of emerging digital agriculture technologies.

Marily Cintra –Director, Health and Arts Research Centre, Inc



Marily is the founder and executive director of Health and Arts Research Centre, Inc. She has a Master of Design, University of South Australia and post-graduation in Sustainable Heritage Management, ANU. Marily received many awards for her work including Australia Council’s Ros Bower Award 2006 in recognition for a life time exceptional dedication to community cultural development. She is an artist and cultural activist, with a practice that expands over 50 years. Marily works both in studio practice and community cultural development and has developed arts strategies for 25 health facilities in Australia.

The arts plays a significant role in supporting a sense of place and wellbeing. It connects people and their stories, expresses a shared vision for the future. Research shows that the Arts contributes to positive health outcomes and place development. HARC has recently developed an Arts Strategy for NSW Multipurpose Services (MPS). The MPS are small health facilities that combine a range of health and aged care services for people living in rural and remote NSW. Each facility is tailored to meet the community’s unique health needs into the future. They provide urgent care, inpatient beds, palliative and respite care, residential aged care, a range of primary, community and ambulatory care services, visiting specialists and connection to other serviced through new technologies like tele-health. The connection to people living in remote areas is very important and HARC believes that through new technologies, distances can be minimised.

Bernard Higgins – Communications & Creative Industries, CSU



Bernard is working in conjunction with the CSU Graduate Certificate in Wiradjuri Language, Culture and Heritage. He created this animation, Wirruuwaa and the Giant Kangaroos, in Unreal Engine 4. Uncle Stan Grant, Sr and Lloyd Dolan contributed the story and the translation in Wiradjuri.

Bernard used Autodesk Maya and Motionbuilder, SideFX Houdini, Adobe CC and Unreal Engine 4 to visually show the story in 3D. Going forward we are looking into using these technologies to tell more Wiradjuri cultural stories, as well as hoping to recreate Cultural Walks presented by Wiradjuri Elders about the Wiradjuri region and the Murrumbidgee River in VR

Tim Gentle, Think Digital



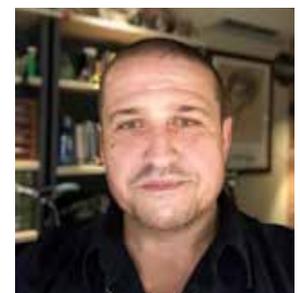
Tim is the founder and Director of Think Digital, a self-proclaimed Digital Crusader, Educator & Entrepreneur and an advocate for regional, rural and remote Australia. Tim’s speciality is “Immersive Technologies in Agriculture” and has created #FarmVR and #FarmAR - Virtual Reality and Augmented Reality farming experiences to help educate people where their food comes from and to inspire them to consider agriculture as a career pathway. Tim has over 20 years of experience in Marketing and the Digital world. His energy, enthusiasm and industry knowledge has been shared in well over 2000 workshops both internationally and across Australia. Tim has also architected over 1000 websites for an array of customers. Tim’s #ThinkDigitalCoach is a hi-tech 14-metre classroom on wheels that travels throughout Australia providing digital education, experiences, and education. Tim’s mission is to build the digital skills and confidence of those he meets and has vision is to help bridge the digital divide between the city and country. His vision is to help feed the world!

Dev Mukherjee, Anomaly Software, Wagga

Dev is the Director and has a 15 year track record of building large scale platform. He leads the design and engineering teams at Anomaly. Anomaly Software is an all Australian technology company with capabilities in Internet, Mobile and Gaming technologies. Anomaly has built several large scale platforms in the private and public sectors including Course Space; the cutting edge course design platform for Charles Sturt University



Dr Donovan Jones, Senior Lecturer, School of Nursing, Midwifery & Indigenous Health CSU, Interaction Design (AR VR Research Fellow) SMARTLab





“Immersive Technologies in VR/MR in Research and Education” – Donovan will share some of the work he has been doing around the globe and open the future to possibilities for education and research within CSU.

As an early career researcher Donovan’s PhD “mindfulness for men with pregnant partners” has attracted international recognition receiving international publications and has gained him a position as a board advisor on the international forum for wellbeing in pregnancy www.ifwip.org. In addition, Donovan’s PhD is being run in the UK in 2020 through the University of Leeds. Recently Donovan has been exploring the use and integration of transformative technologies such as virtual and mixed reality into teaching health professionals and students. Donovan has taken the lead forming inter-professional research collaborations across the University and the world (University of Surrey, University of Leeds and the University of Illinois) to translate transformative technologies into clinical practice. To date, Donovan has led teams developing a Neonatal Virtual Reality program designed to provide health professionals and students with accessible and repeatable neonatal resuscitation lifesaving skills. In addition to this Donovan team released the Road to Birth education application, providing a non-invasive internal view of pregnancy progression utilising both virtual and augmented reality technology.

Melanie Randall, XR CRC Bid Manager, Deakin University



Melanie is a specialist in contract research and growing research to spin out stage in the non-traditional areas of research, mostly Business and Law, Arts and Education and the ‘soft side’ of Health (eg public health etc). She is also a specialist in the CRC Program, which includes CRC-P. The eXtended Reality Cooperative Research Centre (XR CRC) is a large-scale bid lead by Deakin University that will drive industry-led research in universities specialising in Virtual, Augmented, Mixed and eXtended Reality (VR/AR/MR/XR) over the next 7-years. Melanie presents information about this program for the DVCR at Deakin. Her approach is to come from an industry perspective and to help researchers with the shift in thinking this requires.

INTERACTIVE DEMONSTRATIONS

Andrew Hagan – Lecturer, Communications & Creative Industries, CSU



Andrew is a lecturer, co-director of the Australian International Animation Festival (AIAF), Visual Effects Producer & Supervisor, Adobe Certified Expert (ACE), international judge, Autodesk Certified Maya Instructor, with relevant degrees in creative industries. He established Charles Sturt University’s Animation and Visual Effects specialisation. His

experience over 20 years charting the rise of animation in popular culture and latest technologies driving digital visual effects production has provided him with professional expertise while supporting his educational interests in sharing comprehensive artistic theory and practice with others.

Andrew has been working with Unreal Engine, the technology behind Fortnite and a multitude of entertainment/enterprise projects, since the first version was released in 1998. He will showcase how CSU has used this technology over the years and demonstrate what will be possible in the not-too-distant future.

Dr Zeynep Tacgin, lecturer at Marmara University / Turkey & Post-Doctoral Researcher at CSU



Zeynep has worked in the education technologies field for more than 10 years. She has been working on AR/VR/MR technology usage in education for 5 years. Also she designs and develops virtual environments for educational purpose and is interested in merging MR technologies and distance education.

This project provides an immersive virtual reality learning environment for reinforcing conceptual knowledge and psychomotor skills of nursing students. Preoperative procedures were embedded in the myVOR. The sample videos were used to teach surgical instrument preparation procedures. myVOR has developed using Unity game engine and coded via C#. 224. Surgical instruments were designed using Solidworks and Oculus Quest was used as a standalone HMD. The final version of myVOR includes four main scenes as (1) learning space, (2) video screen, (3) practice and, (4) instruction. myVOR provide audio and haptic feedback to the users also, they can follow their performance using the progress bar.

DISPLAYS

Dr Sam Bowker – Senior Lecturer in Art History & Visual Culture, CSU





The 'Digital Khayamiya' project is a speculative field of visualization research centred on the work of the Tentmakers of Cairo, whose immersive architectural pavilions resist conventional photographic limitations. This proposal briefly outlines forms of visualization that have been attempted by CSU and other researchers, and proposes new methods for augmenting conventional illustration for the purposes of art historical scholarship and accessible digital exhibitions.

Dr Matt Cahill, Chief Strategic Officer, AgriPark and Annette Davies, Manager CSU Incubator Hubs



The AGRISCIENCES Research and Business Park (AgriPark), based on Charles Sturt University's Wagga Wagga campus is a key step in Charles Sturt University's long-held vision and commitment to support, facilitate and grow the nation's agricultural sector. The AgriPark will provide dedicated infrastructure, services and support to allow innovative industry to co-locate, integrate and collaborate with each other and the multidisciplinary research strengths at Charles Sturt University to meet emerging national and global challenges and enable major advances over the coming decades.



Extended Reality Centre (XRC)

The eXtended Reality Centre (XRC) appreciates the CSU Faculties in support of this initiative, in particular, Associate Professor Jane Quinn, Professor Mark Morrison, Associate Professor Philip Hider and Associate Professor Will Letts. The list of supporters is extensive, including the XRC Working Group, DFM and FoAE Technical Team. Special thanks to XRC Team: Dr Elizabeth Wilff, Dr Sarah Redshaw and Andrew Hagan. Professor Eleanor Gates-Stuart - CSU XRC Project Lead

Contact: xrc@csu.edu.au

