



Charles Sturt  
University



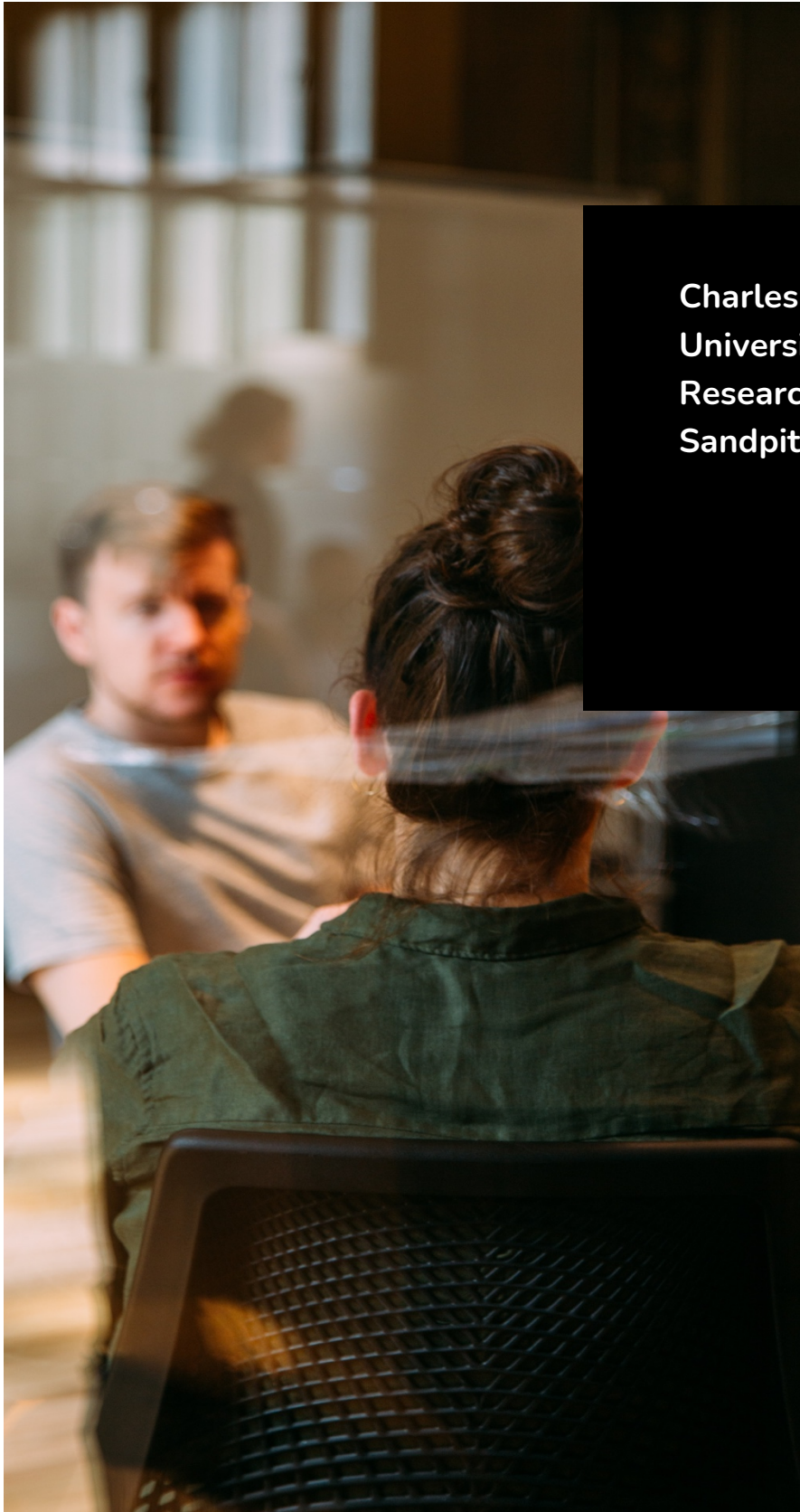
AI and Cyber  
Futures Institute



# Charles Sturt University - IBM Research Co-creation Sandpit

November, 23 2022  
12:00 – 15:00

The Council Room Grange Chancellery,  
Bathurst Campus, Building 1205,  
Charles Sturt University



**Charles Sturt  
University – IBM  
Research Co-creation  
Sandpit**

# Welcome

Recent trends in the Australian higher education require closer collaboration between industry and academia. The Australian Government has lately made major investments into the National Industry Fellowships and Industry PhD Programs, all designed with industry applications in mind. The international research landscape is also focused around science, which is capable of making practical impact across multiple sectors.

Charles Sturt University's unique partnership with IBM allows us to co-develop and co-create new project ideas and set the partnership between IBM and the University for success.

The "sandpit" method of producing collaborative projects between industry and academia encourages innovation and creativity in research and co-creation design. A sandpit is an event where academics and industry create new initiatives around a specified set of themes.

The Charles Sturt University – IBM Co-creation Sandpit is set to encourage the formation of teams between academia and industry as well as foster the development of concrete and realistic plans to achieve common goals.

The event will involve presentations, group work, and reflection to ensure productive co-creation.



**Professor Mark Evans**  
(FIPPA, PhD)  
Deputy Vice-Chancellor  
(Research),  
Charles Sturt University

# About The Event

The Charles Sturt University-IBM Sandpit event will bring together Charles Sturt University academics and IBM practitioners to generate new collaborative research ideas, which would address important practical issues, through co-creation and collective thinking.

The sandpit will also produce an action plan of pathways to achieve collaborative goals. This plan would help put sandpit ideas into practice.

Instructions will be provided at the beginning of the sandpit, as well as at the start of each activity block.

## Event Information

Unless you are a speaker, you do not need to prepare anything special for this event. Please, arrive on time and be prepared to participate in discussions.

## Date and Time

The event will take place on November 23 from 12 p.m. to 3 p.m.

## Venue

The venue of the Sandpit is The Council Room  
Grange Chancellery, Bathurst Campus,  
Building 1205,  
Charles Sturt University

## Dress code

Dress code for this event is business attire or business casual.



## Professor Ganna Pogrebna

Executive Director of AI and  
Cyber Futures Institute,  
Charles Sturt University,  
Sandpit Moderator

# Participants: IBM



**Kaaren Koomen**  
Director Government &  
Regulatory Affairs,  
IBM A/NZ



**Daniel Gralton**  
Technology Leader –  
NSW Government  
IBM Technology



**Steve Davies**  
Partner, CIC A/NZ,  
IBM Consulting



**Julie Fairley**  
Senior Managing Consultant,  
CIC Bathurst Leader,  
IBM Consulting

# Participants: IBM



**Kylie Michelle Skeahan**

Client Partner  
NSW State Government,  
IBM Consulting



**Stephen Chey**

Client Executive  
Security Services,  
IBM Technology



**Kaveh Fanian**

Client Executive  
Security Services,  
IBM Technology



**Ben Peterson**

Senior Managing Consultant  
CIC Bathurst,  
IBM Consulting

# Participants: IBM



**James Sherley**  
Junior Associate  
IBM Consulting



**Ian Parker**  
Junior Associate  
IBM Consulting



**Mitchell Dederer**  
Junior Associate  
IBM Consulting



**Brayden Aguilera**  
Junior Associate  
IBM Consulting

# Participants: Charles Sturt University



**Mark Evans**  
Deputy Vice-Chancellor  
(Research)  
Charles Sturt University



**Zahid Islam**  
Professor in Computer  
Science,  
Charles Sturt University



**Hazel Dalton**  
Senior Research Fellow in  
Rural and Regional  
Health,  
Charles Sturt University



**Jonathan Medway**  
Senior Research Fellow,  
Director of the Global Digital  
Farm, Charles Sturt  
University

# Participants: Charles Sturt University



**Manoranjan Paul**  
Professor in Computer  
Science,  
Charles Sturt University



**Michael Kemp**  
Associate Head of School and  
Senior Lecturer in  
Mathematics and Statistics at  
Charles Sturt University



**Geoff M Gurr**  
Professor of Applied Ecology,  
Charles Sturt University

# Participants: Charles Sturt University



**Jian Liu**

Postdoctoral Research  
Fellow,  
Charles Sturt University



**Ashad Kabir**

Senior Lecturer in Computing,  
Charles Sturt University



**Patrick Walsh**

Associate Professor  
Intelligence and Security  
Studies, Charles Sturt  
University

# Speakers



## Mark Evans

Professor

(FIPPA, PhD)

Deputy Vice Chancellor

(Research)

Charles Sturt

University

Professor Evans took up the position of Deputy Vice-Chancellor (Research) at Charles Sturt University on 4 January 2022.

Mark is a member of the Independent Evaluation Group of the World Bank and EU and UN expert networks and a member of the editorial board of the Global Academy.

He was awarded an honorary fellowship of the Institute of Public Administration Australia in 2021. He holds honorary professorships with the universities of Gadjah Mahda, Renmin, York and Hull.

Professor Mark Evans was previously:

- Director of the Democracy 2025 – strengthening democratic practice initiative at the Museum of Australian Democracy at Old Parliament House from 2018-2021
- Director and Professor of Governance at the Institute for Governance and Policy Analysis at the University of Canberra (2014-2018)
- Director of the World-wide Universities Public Policy Network (2002-5)
- Vice President of the United Kingdom's (UK) Joint University Council for the Applied Social Sciences (1999-2004)
- Head of Politics at the University of York and Provost of Halifax College (1998-2007) in the UK
- Dean of the Faculty of Business, Government and Law at the University of Canberra (2011-12)

He was also the Australia New Zealand School of Government's (ANZSOG) Professor of Governance from 2009 to 2014.

# Speakers



**Steve Davies**  
Partner  
Client Information  
Centres A/NZ,  
IBM Consulting

Steve Davies leads IBM's Client Innovation Centres in Australia & New Zealand. Steve has an extensive background in the IT industry and specifically in the development, enhancement and support of business critical applications and real-time command & control systems. Roles have included software engineer, software configuration manager, development team lead, solutions architect, project team lead, project manager, program manager, project executive, site executive and client innovation centre leader supporting clients across industries as diverse as defense, telecommunications, utilities, mining and oil & gas.

Recent roles within IBM include:

- Hybrid Cloud Management Service Line Lead across Australia and New Zealand.
- Client Innovation Centre Leader in Ballarat, Victoria. The Client Innovation Centre delivers a broad range of application services to both corporate and government clients.
- National Testing and Environment Services Leader.
- Application Services Leader for Western Australia responsible for building a services delivery capability in a growth market.
- Delivery Centre Leader providing leadership and up-line management for an organisation delivering application services to a major client in the telecommunication industry. Extended team size of 600+ IT professionals operating in a strong matrix project environment from several sites across Australia and India. Services included the development, enhancement and support of the client's business critical applications.
- Platform Lead on a large greenfields operational support systems development for a new national telecommunications corporation.

His specialties include: IT strategy development; Organisation & people management; Program & project management

# Speakers



**Zahid Islam**  
Professor in Computer  
Science,  
Charles Sturt  
University

Zahid Islam is a Professor of Computer Science, in the School of Computing, Mathematics and Engineering at Charles Sturt University, Australia.

He has been serving as the Director of the [Data Science Research Unit \(DSRU\)](#) since January 2019. He has been also serving as the Theme Lead and Charles Sturt University (CSU) Academic Lead for the [Cyber Security CRC](#) since January 2021. He serves as the Chair of the School Research Committee of the School of Computing, Mathematics and Engineering.

His main research interests are in Data Mining, Classification and Clustering algorithms, Missing value analysis, Outliers detection, Data Cleaning and Preprocessing, Incremental Learning, Transfer Learning, Federated Learning, Privacy Preserving Data Mining, Cyber Security, and Applications of Data Mining in real life.

He has published more than 120 peer reviewed journal articles and conference papers in top quality journals [such as IEEE Transactions on Services Computing (CORE A\*), Patter Recognition (CORE A\*), ACM Computing Surveys (CORE A\*), Information Sciences (CORE A), Information Systems (CORE A\*), Knowledge and Information Systems, and Expert Systems with Applications] and conferences such as PAKDD (CORE A) and IJCNN (CORE A).

# Speakers



**Ganna Pogrebna**  
Professor, Executive  
Director of AI and  
Cyber Futures Institute,  
Charles Sturt  
University

Ganna Pogrebna is the Executive Director of the Artificial Intelligence and Cyber Futures Institute at Charles Sturt University (Australia). Ganna published many articles in high-quality peer-refereed journals. She also currently serves as a methods editor at the Leadership Quarterly and an associate editor of Judgement and Decision Making journal.

Blending behavioral science, AI, computer science, data analytics, engineering, and business model innovation, Ganna helps cities, businesses, charities, and individuals to better understand why they make decisions they make and how they can optimize their behavior to achieve higher profit, better social outcomes, as well as flourish and bolster their wellbeing. Her recent projects focus on smart technological and social systems, cybersecurity, human-computer and human-data interactions and business models. Her recent most impactful projects concentrated on applications of behavioral data science to media industry as well as on cybersecurity as a behavioral science. She also works on behavioral data science applications to consumer choice, health, advertising, sustainability, Formula 1, and smart cities.

Ganna's work on risk analytics and modelling was recognized by the Leverhulme Research Fellowship award. In January 2020, she was also named as the winner of TechWomen100—the prize awarded to leading female experts in Science, Technology, Engineering and Mathematics in the UK. She is also named as one of 20+ Inspiring Data Scientists by the AI Time Journal. Ganna runs the Data Driven blog on YouTube as well as Inclusion AI. blog. She is also an occasional contributor to the VOXEU blog, BBC blog, and the Alan Turing Institute blog. Her work is regularly covered by the traditional as well as social media. For example, her recent research on COVID19 was covered by the National Geographic. Ganna is one of the contributors to the Oxford Handbook of AI Ethics. She is also currently co-editing the Cambridge Handbook of Behavioral Data Science, which is due to be published in 2022.

# Speakers



**Jonathan Medway**  
Director of the Global  
Digital Farm,  
Charles Sturt  
University

Jon Medway grew up on a family farm on the Liverpool Plains in Northern NSW attending Farrer Ag High before completing an agricultural science degree at Charles Sturt University in the mid 80s.

After a few years in corporate farming he returned to Charles Sturt as a Research Officer at the Farrer Centre working with a local farmer group (FM500) comparing farming systems and demonstrating the role of objective monitoring for improved crop management.

This work evolved to include the investigation of spatial variability through the use of remote sensing, soil surveying and yield mapping. In 2000 he established a spatial data consultancy.

Over its 19 years of operation Jon worked on over 2500 projects across Australia and Internationally providing services to family and corporate farms, industry, research organisations and government agencies.

Jon currently serves as the director of the Global Digital Farm initiative at Charles

# Speakers



**Manoranjan Paul**  
Professor in Computer  
Science,  
Charles Sturt  
University

Manoranjan Paul received the BSc Engineering (honors) degree in Computer Science and Engineering from Bangladesh University of Engineering and Technology (BUET) and the PhD degree from Monash University, Australia. He has also completed Graduate Certificate in University Leadership and Graduate Certificate in Learning & Teaching in Higher Education from Charles Sturt University (CSU).

Currently, Manoranjan Paul is a Professor in Computer Science, Director of Computer Vision Lab and the Head of Machine Vision and Digital Health (MAVIDH) Research Group at CSU.

Prof Paul is the recipient of the ICT Researcher of the Year 2017 and a Golden Disruptor Award from the Australian Computer Society (ACS). Currently, he is an Associate Editor of international journals: IEEE Transactions on Multimedia (JCR Q1 and Rank 1 in Multimedia), IEEE Transactions on Circuits and Systems for Video Technology (JCR Q1 and Rank 2 in Multimedia), and Eurasip Journal on Advances in Signal Processing (JCR Q2).

His major research interests are in the fields: video coding; image processing; artificial intelligence; machine learning; digital health; eye tracking; computer vision.

Prof Paul has published around 200 fully refereed international publications including 70+ journals. He has successfully supervised 16 PhD in completion including 6 as a principal supervisor. He obtained \$3.6 million competitive external grant money including Australian Research Council (ARC) Discovery Project (DP19 & DP13), Australia-China, Soil CRC, NSW Government, Wine Australia, and NSW DPI grants.

# Speakers



**Patrick Walsh**  
Associate Professor  
Intelligence and  
Security Studies,  
Charles Sturt  
University

Dr. Walsh is Associate Professor, Intelligence and Security Studies. He is a former intelligence analyst with experience working in national security and law enforcement agencies in Australia.


Prof Walsh is currently a senior researcher at the Australian Graduate School of Policing and Security (AGSPS). He is co-theme leader (emerging threats) for the \$140 million government and private sector funded Cooperative Research Centre Cyber Security. He is also Chief Investigator on an ARC Discovery grant (\$277, 551) Intelligence and National Security Ethics, Efficacy and Accountability with Professor Seamus Miller (CSU) and ANU.

Prof Walsh has 30 books, book chapters and peer-reviewed articles on intelligence reform/capability, leadership, bio-terrorism, strategic intelligence and intelligence education issues. He has been widely consulted on intelligence capability and training matters in the corrections, policing and national security sectors in Australia and internationally.

He is on the editorial board of the premier international peer-reviewed Intelligence and National Security Journal and Honorary Visiting Fellow in the Department of History, Politics and International Relations at the University of Leicester (UK).

He has taught widely in Australia and internationally and held leadership roles within Charles Sturt University, including Acting Associate Dean (Research), Faculty of Arts in 2016 and currently co-leader of the Faculty Research Area Public Safety and Security.

# Event Agenda



11:50-12:00	<b>Arrival and Registration</b> Please, arrive on time as we would like to start at 12:00 (noon) sharp
12:00-12:05	<b>Welcome</b> Mark Evans, Charles Sturt University.
12:05-12:20	<b>Order of the Sandpit</b> Ganna Pogrebna, Charles Sturt University, Sandpit Moderator.
12:20-12:30	<b>Research Area Introductions: Data Science and Cyber Security</b> Zahid Islam and Ganna Pogrebna, Charles Sturt University
12:30-12:40	<b>Research Area Introductions: Agriculture, Water, and Environment</b> Jonathan Medway, Charles Sturt University
12:40-12:50	<b>Research Area Introductions: AI and Imaging</b> Manoranjan Paul, Charles Sturt University
12:50-13:00	<b>Research Area Introductions: Intelligence and Security Studies</b> Patrick Walsh, Charles Sturt University

# Event Agenda

13:00-13:30	<b>Group Task 1</b>
13:30-14:00	<b>Working Lunch</b>
14:00-14:20	<b>Group Task 2</b>
14:20-14:45	<b>Group Presentations</b>
14:45-14:50	<b>Sandpit Wrap-up and Further Steps</b> Ganna Pogrebna
14:50-14:55	<b>Closing Remarks, IBM</b> Steve Davies, IBM
14:55-15:00	<b>Closing Remarks, Charles Sturt University</b> Mark Evans, Charles Sturt University

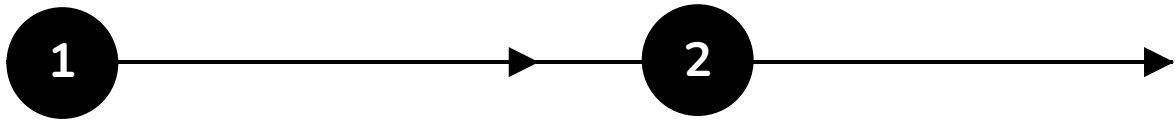
# Group Task 1

Within the following (broadly defined) areas, brainstorm concrete projects, which will be of interest to both academia and industry. These areas (listed below) were identified during the preliminary consultations between IBM and Charles Sturt University. You may pick one area or generate ideas across two or three areas. You have 30 min to complete this task.

- **Regionalisation of the cyber security workforce**  
Cyber security is an important challenge in regions: individual households, farms, SMEs, regional health organisations, regional businesses – all use digital technology and data across multiple ecosystems. This creates a number of vulnerabilities related to critical infrastructure risks, data loss risks, etc. The recent ASD's REDSPICE program aims to create 1,900 additional cyber security roles in regional Australia. What can be learned from IBM and Charles Sturt University experience in regional development? What specific projects in this broadly defined area can you think of?
- **Driving diversity and inclusion at scale**  
There is a significant gap in opportunities to engage in STEM, data-driven, and cyber opportunities between the majority groups and underrepresented groups of Australian population (especially in regions). What can be learned from IBM and Charles Sturt University research and experience in capacity building amongst underrepresented and/or marginalised communities including First Nations, neuro-diverse, and gender-diverse groups? What specific projects in this broadly defined area can you think of?
- **Integrating academic learning and on the job training**  
IBM is doing a lot of work with (i) the Digital Skills Organisation to reform the vocational education system for STEM and cyber security education in Australia as well as (ii) with the US Government on credentialling and accessibility of digital careers. What can be learned from IBM and Charles Sturt University experience in making digital careers more accessible to various audiences? What specific projects in this broadly defined area can you think of?

Please, write down as many ideas on the poster (provided) as you can think of.

# Group Task 2

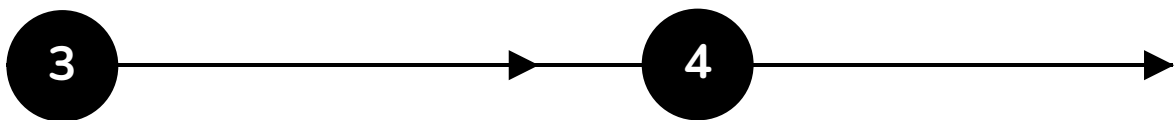


## 1 Brainstorm

For a selection of your project ideas (as instructed by the Sandpit Moderator), think of concrete pathways to achieve the delivery of the project(s).

## 2 Success definition

For a selection of your project ideas (as instructed by the Sandpit Moderator), identify 3 major outcomes/KPIs for each project. What does success look like?



## 3 Resourcing

For a selection of your project ideas (as instructed by the Sandpit Moderator), identify resources you need for each project and how would you go about securing these resources (e.g., grant funding, etc.)

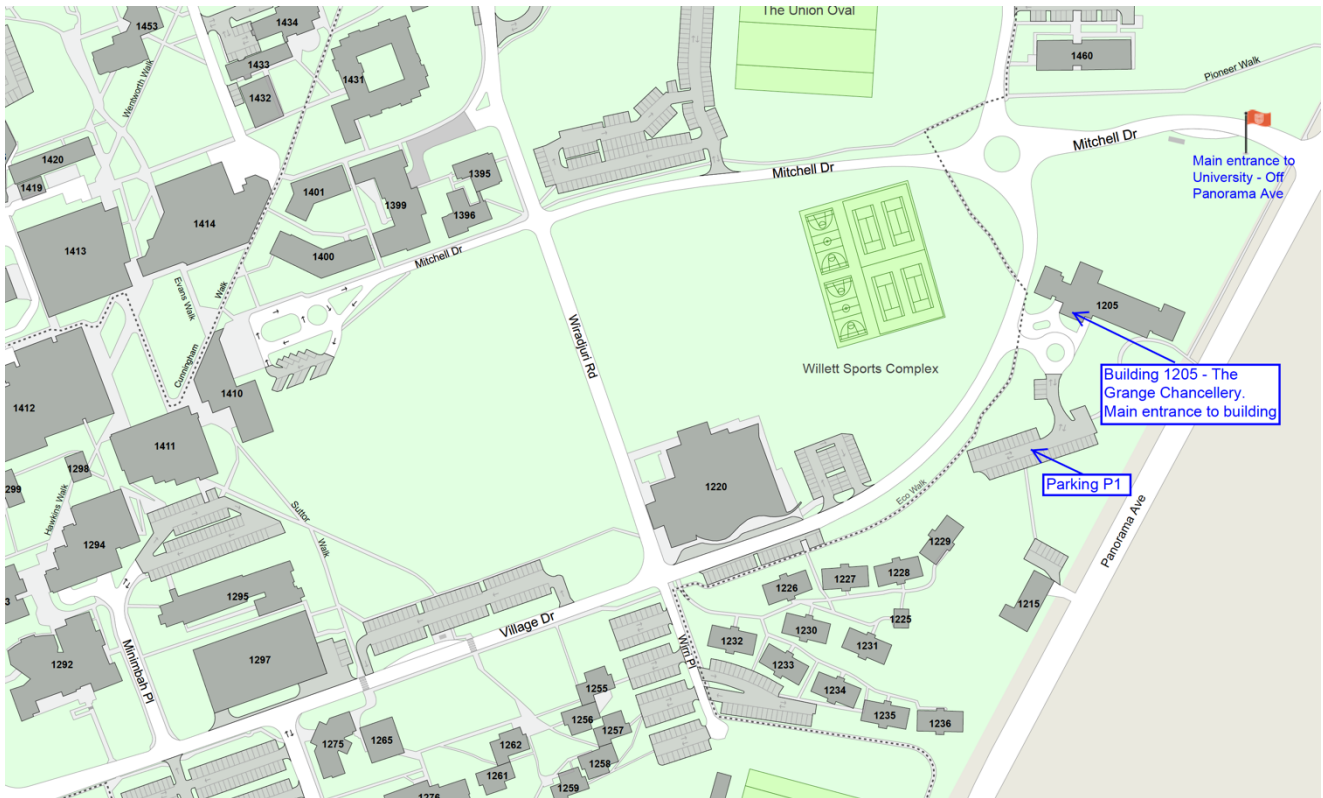
## 4 Write your ideas down

Don't forget to write your ideas down on your group poster (provided).



# Event Map

The Council Room Grange Chancellery, Bathurst Campus,  
Building 1205, Charles Sturt University



The Council Room Grange Chancellery is shown in grey:





Charles Sturt  
University

—  
AI and Cyber  
Futures Institute

# Thank you

If you have any questions, please get in touch.

## Contact Us

DVCRE Office and  
AI and Cyber Futures Institute  
Bathurst Campus  
Charles Sturt University  
gpogrebna@csu.edu.au

## Social Media

You are welcome to post photos  
from this event on social media.  
Please, use the following  
hashtag: #ibmcsusandpit22  
**Twitter** : @CharlesSturtUni

