Co-Designing a National Advanced Analytics and AI Resource Hub

eResearch Australasia 2025

Brisbane Australia

Kerrie Mengersen
Distinguished Professor of Statistics,
Centre for Data Science, QUT

k.mengersen@qut.edu.au

Bernadette Hyland-Wood, Ph.D.
Research Fellow, Centre for Data Science, QUT

b.hylandwood@qut.edu.au
https://www.linkedin.com/in/bhyland/

Acknowledgment of Traditional Owners

We acknowledge the Turrbal & Yugara, as the First Nations owners of the lands where we are meeting.

We pay respect to their Elders, lore, customs & creation spirits. I recognise that these lands have always been places of teaching, research & learning.

QUT acknowledges the important role Aboriginal & Torres Strait Islander people play within our community.

QUT Centre for Data Science

Australian Research Data Commons

AUSTRALIAN DATA SCIENCE NETWORK

Reference Architecture for advanced analytics for health research & translation

Co-investment

- ARDC - committed to a national-scale digital research infrastructure
- QUT
- Curtin University
- UTS

Beneficiaries

- Australian-based health researchers transitioning to advanced analytics.
- Computational researchers and epidemiologists
- Infrastructure managers

Architecture Overview

- Infrastructure lens: leveraging NeCTAR Cloud
- Integration of tools, platforms, data assets, and socio-technical resources
- Designed for scalability and responsible AI/ML deployment

- Centralised access to compute, tools, models, and data
- Will support virtual labs and contextual learning

Stage 2 Objectives

- Identify and integrate data assets, tools, and socio-technical resources
- Validate architecture through workshops and consultations
- Align with national and community needs

Outputs & Deliverables (2026)

Data Assets & Resources

- Specification of data resources
- Focus on high-value healthcare datasets
- Includes synthetic data generation tools
- Ensures FAIR compliance and privacy/security alignment

Tools and Platforms

- Non-AI advanced analytics tools
- AI-focused tools and models
- Aligned with healthcare use cases
- Ready for deployment in VREs

Ethics & Governance

- Development of ethical frameworks
- Governance templates and compliance tools
- Supports responsible AI/ML use in healthcare

Resources & Training

- Curated training materials
- Supports skill development across experience levels

QUT Centre for Data Science

Collaboration & Sustainability

- Emphasis on integrating existing tools
- Deployment into NeCTAR-backed VREs
- Support for international data standards and pipelines
- Best practices for sharing digital assets
- Collaboration with ARDC for deployment
- Sustainability mechanisms for ongoing resource management

What is next for the Reference Architecture for advanced analytics for health research & translation

- ❑ Community co-design and feedback loops -- **Your input is essential**
- ❑ Preparing for national-scale implementation
- ❑ Continuing community co-design and preparing for broader national-scale implementation.

Please participate in our survey!

Australian Research Data Commons

AUSTRALIAN DATA SCIENCE NETWORK

QUT Centre for Data Science

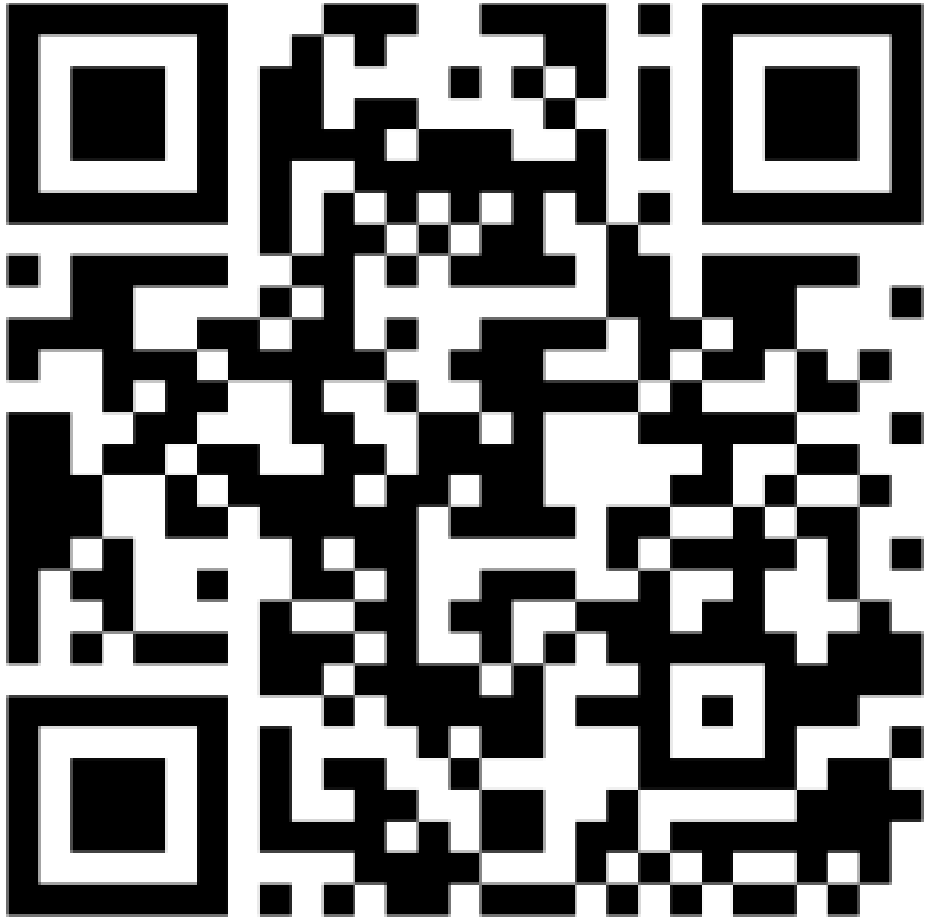
Please participate in our survey!

Any questions, please get in touch with D/Prof Kerrie Mengersen,

k.mengersen@qut.edu.au

Dr Bernadette Hyland-Wood

b.hylandwood@qut.edu.au



bit.ly/4odzsdm