

WESTERN SYDNEY
UNIVERSITY



SCIENCE, TECHNOLOGY,
ENGINEERING, AND MATHEMATICS
(STEM) CLUSTER



Indigenous Strategy

2022-2025

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.

COVER IMAGE:
CHRIS EDWARDS
SWIMMY CREEK
MIXED MEDIA ON LATVIAN LINEN
100 CM X 145 CM
2010

WESTERN SYDNEY UNIVERSITY ART COLLECTION
IMAGE REPRODUCED BY PERMISSION OF ARTIST

CONTENTS

ACKNOWLEDGEMENT OF COUNTRY	2
INTRODUCTION.....	4
STRATEGIC OBJECTIVE ONE: INDIGENOUS STUDENTS	5
Strategic Actions.....	5
Key Success Measures	5
STRATEGIC OBJECTIVE TWO: INDIGENOUS EMPLOYMENT	6
Strategic Actions.....	6
Key Success Measures	6
STRATEGIC OBJECTIVE THREE: INDIGENOUS RESEARCH.....	7
Strategic Actions.....	7
Key Success Measures	7
STRATEGIC OBJECTIVE FOUR: INDIGENOUS LEARNING AND TEACHING	8
Strategic Actions.....	8
Key Success Measures	8
STRATEGIC OBJECTIVE: COMMUNITY ENGAGEMENT	9
Strategic Actions.....	9
Key Success Measures	9
STRATEGIC OBJECTIVE SIX: INDIGENOUS LEADERSHIP	10
Strategic Actions.....	10
Key Success Measures	10
STRATEGIC OBJECTIVE SEVEN: CULTURAL VIABILITY AND KNOWLEDGE	11
Strategic Actions.....	11
Key Success Measures	11

INTRODUCTION

It is a privilege to introduce the Science, Technology, Engineering, and Mathematics (STEM) Cluster Indigenous Strategy 2022 to 2025. Our Cluster-level Strategy brings together and builds on objectives, actions, and measures from Western Sydney University's three STEM School Strategies – the School of Computer, Data, and Mathematical Sciences, School of Engineering, Design, and Built Environment, and School of Science. Additionally, actions and measures have been developed with our Cluster's two Research Institutes – The Hawkesbury Institute for the Environment and MARCS Institute for Brain, Behaviour and Development.

Our STEM Cluster Indigenous Strategy draws from the Western Sydney University Indigenous Strategy 2020 to 2025, the Universities Australia Indigenous Strategy 2022 to 2025, and intersects with Western's Strategic and Decadal Plans, including the STEM Decadal Plan 2022-2031.

First Nations people – the First Scientists – bring to the STEM Cluster Indigenous Knowledge developed and passed on over tens of thousands of years. Current Indigenous engagement with STEM programs at Western is between 1 and 2%. The STEM Indigenous Strategy sets goals for significantly increased Indigenous participation by 2025. For example, we will develop pathways to build participation by at least 5%, establish internships and Work Integrated Learning (WIL) opportunities for Indigenous students with industry, build the proportion of Indigenous staff and leadership in STEM, and deepen relationships with communities and organisations for Indigenous-led research projects and engagement.

Opportunities in STEM abound in Western Sydney. Improved infrastructure, enriched cultural precincts, refreshed health and medical education and research precincts, a new International Airport with its surrounding Aerotropolis, will thrive and meet the region's needs with ideation, planning, and actions informed by Indigenous knowledge from First Nations workforces and leadership.

Western Sydney University plays a vital role in contributing to teaching, research, and engagement that build STEM thinking, skills, and credentials in our region.

An overarching goal of the STEM Cluster Indigenous Strategy is to develop the breadth and depth of Indigenous research and teaching that empowers Indigenous Australians through STEM themes such as Environment and Ecology, Health, Engineering, Artificial Intelligence, Data Science, and Language Science.

Language and identity are inextricably linked in all human societies and particularly so in

Australia, where indigenous language is often related directly to the land¹. Our Strategy deliberately builds on decades of collaborative research into Indigenous language in the MARCS Institute for Brain, Behaviour and Development and through the Australian Research Council Centre of Excellence for the Dynamics of Language (CoEDL) of which MARCS Institute at Western has been a node. Across and beyond the Cluster we will explore opportunities for Arts-STEM collaborations with Indigenous artists, scholars, and scientists.

We are grateful to colleagues who have motivated and guided our STEM Cluster Indigenous Strategy. We are also excited to work with the University and broader community to see the ambitions set out in this Strategy realised.

Professor Kate Stevens
Pro Vice-Chancellor STEM

Professor Michelle Trudgett
Deputy Vice-Chancellor
Indigenous Leadership

October 2022

1. Koch, H., and Nordlinger, R. (2014). The languages of Australia in linguistics research: context and issues. In H. Koch and R. Nordlinger (Eds.) *The Languages and Linguistics of Australia: A Comprehensive Guide*. De Gruyter.

STRATEGIC OBJECTIVE ONE

INDIGENOUS STUDENTS

To support Cluster-wide opportunities for Indigenous Australian students to learn and succeed in an environment that promotes Indigenous excellence.

STRATEGIC ACTIONS

- 01** Work with Schools and Institutes to develop school outreach and pathways to build to the proportion of enrolled domestic Indigenous students reflecting population parity.
- 02** With STEM Schools and Institutes, support an Indigenous Student Network.
- 03** Assist Schools to embed Indigenous student employability into degrees through internship and work integrated learning (WIL) opportunities for Indigenous students and pathways to industry-linked postgraduate research degrees.

KEY SUCCESS MEASURES

The STEM Cluster increases Indigenous participation by 5% by 2025.

3% of all enrolled domestic students are Indigenous by 2025.

Indigenous students in STEM graduate at the same rate as non-Indigenous students by 2025.

Establish internship and WIL opportunities for Indigenous students with industry at undergraduate and postgraduate levels.

STRATEGIC OBJECTIVE TWO

INDIGENOUS EMPLOYMENT

Position Western Sydney University as a place of choice for Indigenous Australians to work in an environment that supports and nurtures their careers.

STRATEGIC ACTIONS

- 01** Encourage Schools and Institutes to deepen cultural awareness training in conjunction with the office of the DVC Indigenous Leadership.
- 02** Offer Traineeships in the Cluster's professional workforce for Indigenous Australians.
- 03** Work with Schools and Institutes to build the proportion of Indigenous staff, eg identifying positions when a position becomes vacant.
- 04** Develop and implement a recruitment strategy to support promotion of and emerging as well as senior leadership from Indigenous staff.
- 05** Promote professional development and mentorship with Indigenous staff.

KEY SUCCESS MEASURES

Completion of cultural awareness training by Cluster staff.

At least 2 traineeship positions created for professional staff in the STEM Cluster.

Create Indigenous and/or industry positions within the Cluster by 2025.

Percentage for Indigenous staff (academic and professional) in the Cluster is 3% by 2025.

STEM Indigenous Academic Level D/E by 2025.

Where appropriate, appoint trainees to a position in the Cluster beyond the traineeship.

STRATEGIC OBJECTIVE THREE

INDIGENOUS RESEARCH

Develop the breadth and depth of Indigenous Research promoting research that empowers Indigenous Australians through STEM themes such as Environment, Health, Engineering, AI, Data Science, and Language Science.

STRATEGIC ACTIONS

- 01** Cluster-wide support for initiatives to increase quality and impactful Indigenous research. Support Indigenous applicants for HDR research through internal and industry scholarships.
- 02** Create Cluster opportunities to learn from Indigenous research conducted in MARCS Institute and in other parts of STEM and the HASS and Health clusters.
- 03** Form a Cluster Advisory Committee for STEM research especially reflecting themes such as Environment, Astronomy, Health, Engineering and the Dynamics of Language. Work plan to include steps toward threshold in a 45 STEM FoR code and a STEM Impact and Engagement case study.
- 04** Build and deepen relationships and trust with communities and organisations for Indigenous-led projects and research challenges. Create real positions for Indigenous emerging staff and leading STEM.

KEY SUCCESS MEASURES

Increase the number of Indigenous HDR students to at least 3 in each School and Institute by 2025.

Establish at least 3 new industry partnerships by 2025. At least 3 new Indigenous HDR student scholarships funded per year with the Graduate Research School by 2025.

In collaboration with Director Indigenous Research, HASS and Health clusters, establish a program of Indigenous research symposia. At least 1 ARC Indigenous-led grant and/or fellowship in the Cluster by 2025. Centre of Regional Expertise for capacity in language science and revitalisation by 2025.

Indigenous HDR students and/or postdocs included in Indigenous-themed research projects.

Increase the number of Indigenous-led research and develop projects in the Cluster by at least five from 2022 numbers by 2025.

STRATEGIC OBJECTIVE FOUR

INDIGENOUS LEARNING AND TEACHING

Supporting all students to develop understanding and knowledge about Indigenous Australians through the Graduate Attribute.

STRATEGIC ACTIONS

- 01** With MARCS Institute for Brain, Behaviour and Development, build on the new undergrad certificate in Indigenous Language (ILA).
- 02** A firm commitment ensuring that all units have strong Indigenous content and that this extends to program level.
- 03** Support Indigenous Learning and Teaching workshops in the Cluster to build capacity of academic staff.
- 04** Promote Indigenous Science subject across the cluster.

KEY SUCCESS MEASURES

Indigenous language learning opportunities available to anyone studying at Western by 2025.

All students have the opportunity to engage with, and learn from, Indigenous knowledges.

All academics have the opportunity to develop their understanding of Indigenous Knowledges and apply it to their teaching practice.

STRATEGIC OBJECTIVE FIVE

COMMUNITY ENGAGEMENT

The Cluster promotes Western Sydney University as a place that works with Indigenous Australian communities.

STRATEGIC ACTIONS

- 01** Connect with high schools to encourage and assist with attractive pathways to STEM courses for Indigenous students.
- 02** Engage with Indigenous suppliers for teaching and research activities.
- 03** Increase linguistic and cultural knowledge of Australia in our region.

KEY SUCCESS MEASURES

Schools outreach program
Optimise! attracting Indigenous teachers in STEM thematic areas such as Environment, Engineering, Data, Health and Science.

Support active engagement with Indigenous Alumni.

For Cluster events, procure goods and services from recognized First Nations organisations and businesses.

Partner with media and industry together with ICS, HASS and IACAC.

Opportunities with MARCS and HASS for adult language learning community classes and “artsience” collaborations.

STRATEGIC OBJECTIVE SIX

INDIGENOUS LEADERSHIP

The Cluster supports STEM Schools and Institutes to provide leadership opportunities for Indigenous Australians across staff, students, and community throughout Western Sydney University.

STRATEGIC ACTIONS

- 01** Work with communities and Elders to build the needs and interests of Indigenous Australians into relevant current and future programs and initiatives.
- 02** Motivate or create opportunities for Indigenous students to undertake leadership roles within the Cluster.
- 03** Embed Indigenous leadership in the Cluster.

KEY SUCCESS MEASURES

By 2025, resource and work with an Elder who champions Indigenous Knowledges through STEM.

At least 3 Indigenous students in Cluster leadership activities and roles by 2025.

Search and appoint an Assistant PVC Indigenous in STEM by 2024.

STRATEGIC OBJECTIVE SEVEN

CULTURAL VIABILITY AND KNOWLEDGE

The Cluster supports STEM Schools and Institutes to build Indigenous cultural viability and knowledge across Western Sydney University.

STRATEGIC ACTIONS

- 01** Work with MARCS Institute experts on incorporating Indigenous language in Cluster events.
- 02** Explore opportunities for Arts-STEM (artscience) collaborations with Indigenous artists, linguists, and/or scientists.
- 03** Ensure Acknowledgement of Country is performed at the start of each formal meeting and gathering within the Cluster.

KEY SUCCESS MEASURES

Indigenous country and language are represented in STEM events and materials.

Cluster events to include Indigenous artworks and multimedia projections relevant to students, staff, and community in high traffic areas.

Acknowledge Country at the beginning of STEM meetings, gatherings, and teaching sessions.

Western Sydney University
Locked Bag 1797
Penrith NSW 2751 Australia



WESTERNSYDNEY.EDU.AU