



WESTERN SYDNEY
UNIVERSITY

OPTIMISING THE FUTURE:

STEM DECADAL PLAN 2022-2031

“ Rather than providing the answer, Science, Technology, Engineering, and Mathematics are the start of problem-solving and providing options, a path forward.

We need engineering, social licence, a good business model, appropriate end user design. We need the right people with the right skills at each stage of the process. ”

DR CATHY FOLEY, AO, AUSTRALIA'S CHIEF SCIENTIST
CareerswithSTEM.com, February 2021

With respect for Indigenous cultural protocol and out of recognition that its campuses occupy their traditional lands, Western Sydney University acknowledges the Darug, Eora, Dharawal (also referred to as Tharawal) and Wiradjuri peoples and thanks them for their support of its work on their lands (Greater Western Sydney and beyond).

Message from Vice Chancellor and President, Professor Barney Glover

Deputy Vice Chancellor and Vice President, Research, Enterprise and International, Professor Deborah Sweeney

Western Sydney is undergoing a period of significant growth and opportunity.

We have a booming population, a new greenfields airport, the revolution that is industry 4.0, major investment in health and medical research as well as education precincts, an agribusiness precinct, and the STEM-focused cultural space and collection at the Powerhouse Parramatta underway.

All three tiers of government are investing heavily in jobs, transport infrastructure, growth and regional renewal within Western Sydney. Significant projects such as the Western Parkland City, Western Sydney Aerotropolis, Bradfield City Centre and Metro Airport West rail line will drive new opportunities for growth.

The region's growth and opportunities are happening in a context of rapid change – change in technologies, climate and weather, the natural landscape and urban green spaces. Vulnerable species and ecological communities are facing more frequent climate and weather extremes including drought, heat waves and bushfires, habitat reduction and fragmentation. At the same time, we will see changing post-COVID-19 education, communications and business models, and the mushrooming use, availability and security of data.

STEM education, research and development are critical for Australia to realise its full potential in this rapidly changing context. Industry and business will need to work together with all levels of government, communities and educational and research institutions to create the workforce and communities that can engage, lead, inspire and deliver solutions.

Western Sydney University can play a pivotal role by supporting the STEM aspirations of students in Western Sydney, and working with industry and government to find sustainable solutions.

This decadal plan envisions a transformational STEM future for Western Sydney and beyond. We present an integrated vision, wherein STEM fields work with health and humanities and social sciences disciplines to provide quality STEM education and fruitful pathways into the STEM workforce for the people of Western Sydney.

Optimising the Future presents the unique features of STEM research and teaching at Western Sydney University, with the aim of nurturing partnerships between education, community and industry over the next ten years to create the future.



Professor Barney Glover AO
Vice-Chancellor and President



Professor Deborah Sweeney
Deputy Vice Chancellor and Vice President



STEM AT WESTERN SYDNEY UNIVERSITY



3 SCHOOLS



2 INSTITUTES



14 DISCIPLINE AREAS



3 CLUSTERS
(STEM, Humanities, Arts & Social Sciences - HASS, Health)



>7500

STEM students rising to >8000 in 2023



>490

STEM academics and 60 technical and support staff



250

primary teachers trained pa with 100 specialising in Science, Technology, or Mathematics



150

secondary teachers trained pa in Science/Technology and/or Maths



By May 2023, the Department of Jobs and Small Business projects that STEM occupations will grow by **10.8%** (ABS, 2018).

WESTERN SYDNEY UNIVERSITY RESEARCH THEMES



HEALTH AND WELLBEING



EDUCATION AND WORK



ENVIRONMENT AND SUSTAINABILITY



URBAN LIVING FUTURES AND SOCIETY



85% of the University's assessed research ranked at world standard or above in the 2018 Excellence in Research for Australia (ERA) national report

WELL ABOVE OR ABOVE WORLD STANDARD RESEARCH (EXCELLENCE IN RESEARCH FOR AUSTRALIA 2018)

- Agricultural Sciences
- Applied Mathematics
- Biochemistry and Cell Biology
- Biological Sciences
- Ecology; Ecological Applications
- Electrical and Electronic Engineering
- Environmental Science and Management

- Environmental Sciences
- Evolutionary Biology
- Forestry Sciences
- Human Movement and Sports Science
- Macromolecular and Materials Chemistry
- Materials Engineering
- Mathematical Sciences

- Medical and Health Sciences
- Microbiology
- Plant Biology
- Psychology and Cognitive Sciences
- Pure Mathematics
- Soil Sciences
- Statistics
- Zoology

GLOBAL RANKINGS



TOP 2%

IN THE WORLD
OVERALL¹

TOP
100



IN THE WORLD
for 16 out of the
17 UN Sustainable
Development Goals²

RANKED
61-70



IN THE WORLD
among universities
under 50 years old³

1. Times Higher Education World University Rankings
2. Times Higher Education Impact Rankings
3. QS World University Rankings Top 50 under 50
4. US News Best Global Universities 2020

WESTMEAD INNOVATION QUARTER:

A \$350M HEALTH RESEARCH
AND COMMERCIAL ECOSYSTEM
IN THE HEART OF WESTMEAD





NOVATION

MULTIVERSITY

A NEW EDUCATION, TRAINING AND RESEARCH APPROACH CENTRED ON
THE WESTERN SYDNEY AEROTROPOLIS AND WESTERN PARKLAND CITY



WESTERN SYDNEY
UNIVERSITY



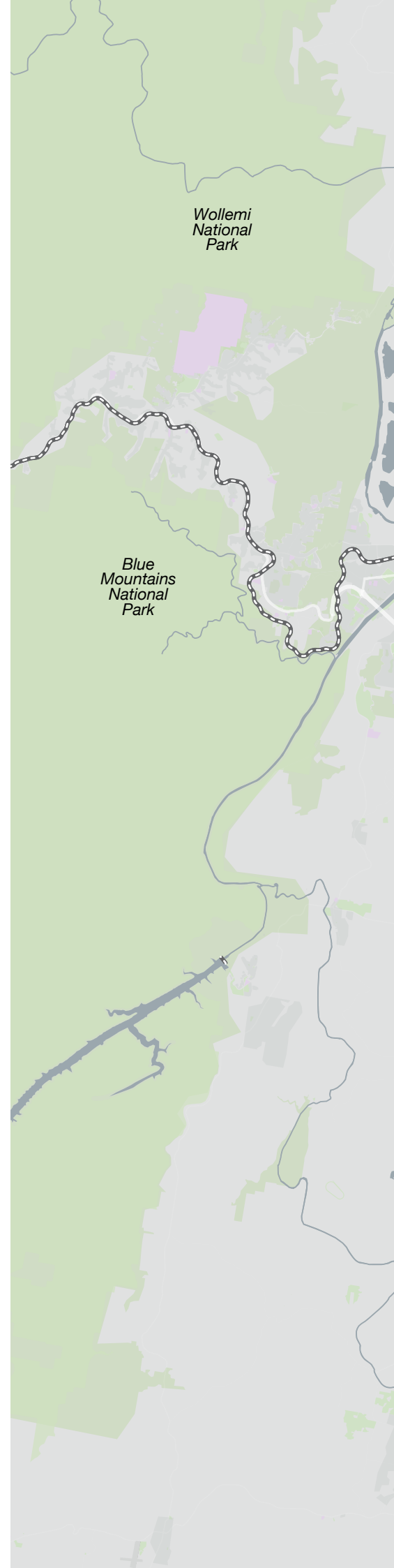
THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

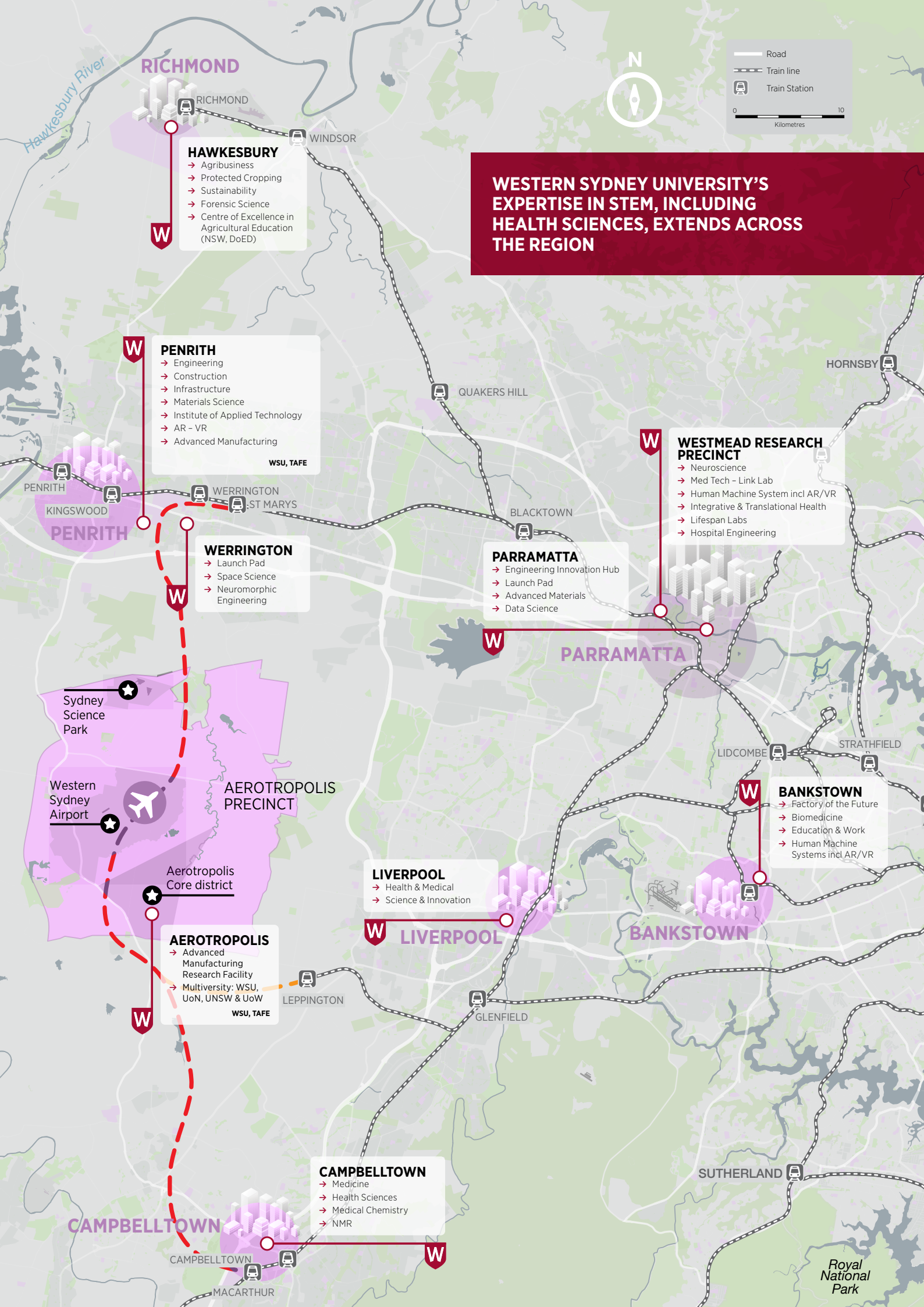


UNSW
SYDNEY



UNIVERSITY
OF WOLLONGONG
AUSTRALIA





RICHMOND

HAWKESBURY

- Agribusiness
- Protected Cropping
- Sustainability
- Forensic Science
- Centre of Excellence in Agricultural Education (NSW, DoED)



PENRITH

- Engineering
- Construction
- Infrastructure
- Materials Science
- Institute of Applied Technology
- AR - VR
- Advanced Manufacturing

WSU, TAFE



WERRINGTON

- Launch Pad
- Space Science
- Neuromorphic Engineering



**WESTERN SYDNEY UNIVERSITY'S
EXPERTISE IN STEM, INCLUDING
HEALTH SCIENCES, EXTENDS ACROSS
THE REGION**

WESTMEAD RESEARCH PRECINCT

- Neuroscience
- Med Tech - Link Lab
- Human Machine System incl AR/VR
- Integrative & Translational Health
- Lifespan Labs
- Hospital Engineering



PARRAMATTA

- Engineering Innovation Hub
- Launch Pad
- Advanced Materials
- Data Science



PARRAMATTA



BANKSTOWN

- Factory of the Future
- Biomedicine
- Education & Work
- Human Machine Systems incl AR/VR

LIVERPOOL

- Health & Medical
- Science & Innovation



LIVERPOOL



AEROTROPOLIS

- Advanced Manufacturing Research Facility
- Multiversity: WSU, UoN, UNSW & UoW

WSU, TAFE

CAMPBELLTOWN

- Medicine
- Health Sciences
- Medical Chemistry
- NMR



CAMPBELLTOWN

STEM CHALLENGES AND NEEDS OVER THE NEXT DECADE

Like the rest of Australia and the world, over the coming decade Western Sydney will be faced with wicked problems such as global warming, extreme weather, threats to cybersecurity, and the need for person-centred health and aged care.

Over the next 20 years, Western Sydney's population is expected to grow by another million, contributing to more than half of Sydney's overall expected population growth. Western Sydney is already the third largest economy in Australia behind the Sydney CBD and Melbourne.

Investments, including the \$5 billion by the NSW government to deliver new facilities and infrastructure to the region; the \$740m into the Liverpool Health, and Academic Precinct and the development of the new Nancy Bird Walton Airport, are all crucial to realising the industry, employment and economic outcomes of Western Sydney and NSW. In addition, the Western Sydney City Deal will create 200,000 knowledge jobs throughout the Western Parkland City by 2038.

This unique period of growth and investment will see a focus on, and need for, a highly skilled STEM workforce. Western Sydney will experience a rise in jobs focused on aviation services; advanced manufacturing; smart logistics and supply chain; allied health; engineering; VR and AR, and technology-supported peri-urban agriculture.

Optimising the Future will enable people, industries and government in the region to access fruitful partnerships that leverage cutting-edge knowledge and expertise, underpinning innovation, competitive strength, embracing future opportunities and securing sustainable growth and development in the face of existing and emerging grand challenges.

WORKFORCE

By 2030, it is estimated that we will spend 77% more time using STEM skills than we do today (Foundation for Young Australians, 2017). STEM knowledge and skills are vital from early childhood education, through school and to post-education, not just to meet the demands of core STEM study and careers, but across all subject areas, for a wide range of careers. Persistent challenges remain in attracting young people towards STEM subjects in school, leading to lack of interest and preparedness for tertiary STEM study.

EQUITY

There remains relatively little diversity in many STEM areas.

HEALTH AND WELLBEING

New health and medical research and education precincts will need large scale, data-informed integration of engineering and technology infrastructure, systems, workforce planning, and patient and community care.

INDUSTRY AND WORK

Industry will need manufacturing that is agile, scalable, innovative, commercially successful and sector leading. It will need access to major relevant datasets and networks that can be integrated, visualised and augmented to drive digitisation, automation and human-centred design.

ENVIRONMENT AND SUSTAINABILITY

Communities will need a sustainable, safe and secure water supply; renewable energy and infrastructure; food security; and materials designed for Australian conditions that withstand extreme weather, and are environmentally sustainable and affordable.

URBAN LIVING FUTURES AND SOCIETY

We will need cities that are liveable, walkable and heat-resistant, with sustainable, accessible and affordable smart housing and transport that is fast, environmentally clean, reliable, within reach and flexible. We will need to anticipate and prevent cybersecurity risks and breaches.

THE STEM DECADAL PLAN

With three, five and ten year horizons, our STEM decadal plan will support Western Sydney and Australia to meet the challenges by:

- enabling access to the people of Western Sydney to quality STEM education and skills,
- widening participation of students and championing gender equity, diversity, and inclusion,
- forging strong partnerships between STEM education providers, researchers and the businesses, government and communities locally and globally to utilise our impactful research outcomes and solutions,
- providing multiple pathways from school to workforce through vocational education and training (VET) and higher education and creating alternative credentials, training, and upskilling throughout the life course, and
- building Western Sydney University's international profile and reputation in STEM education and research to address the challenges that matter most for fairness, prosperity, and wellbeing.

Our priorities for the coming decade are underpinned by four key principles:

Sustainability: In ten years Western will be recognised as a leading institution for facilitating teacher professional learning across a diverse range of STEM areas and we will have sustained success in STEM+ research across existing and emerging research challenges linked to the UN's Sustainable Development Goals

Equity: We will address intersectionality and work to dispel and challenge stereotypes that reduce female and Indigenous Australian's participation in STEM. We will improve the confidence of our community to undertake and excel in STEM study across their lifespan with Western Sydney University.

Transformation: Western Sydney University will lead internationally recognised centres of excellence in agritech, neuromorphic engineering, environmental health, advanced manufacturing, structural health and, through its 21C curriculum transformation, be recognised for excellence in STEM education with visible pathways towards STEM careers.

Connectedness: We will engage in co-design and collaboration through constant dialogue with the community, early childhood centres, schools, TAFE, universities and industry. Our graduates and communities will upskill for professional learning via a range of sector leading alternate and micro-credentials, and we will be known as a sector leader for work-integrated learning and co-located industry labs and facilities.

THE POWERHOUSE MUSEUM

In 2024 the Powerhouse Museum will move to the banks of the Parramatta River, in an iconic purpose-built building.

A significant investment in the cultural and social infrastructure of Western Sydney, the new Museum's close proximity to the University's Parramatta Engineering and Innovation Hub will realise exciting opportunities for collaboration across research and teaching.

Western Sydney University has committed \$10 million to Powerhouse Parramatta confirming its place as the museum's Foundation University Partner and reflecting the University's ongoing commitment to developing the next generation of Australian innovators, scientists and entrepreneurs. The University will embed researchers in the museum including an annual Scholar in Residence, and utilise museum spaces for STEM-related education opportunities.

Partnering with Walker Family Foundation, the Powerhouse Museum will be home to the Lang Walker Family Academy and associated programs. The Powerhouse, the Walker Family Foundation and Western Sydney University, will deliver world-class immersive STEM education experiences at the museum for over 10,000 high school students from Western Sydney and regional NSW every year – including overnight stays at the museum.

SUSTAINABILITY

Western is deeply committed to sustainability and working to ensure a better quality of life for all, now and in the future, in a just and equitable manner, while living within the limits of supporting ecosystems. STEM has a vital role in contributing to this work through multiple channels from evidence based STEM research, to broadening access and equity to diverse groups for STEM opportunities.

The MARVI project embodies these principles. The MARVI system (Managing Aquifer Recharge and Sustaining Groundwater Use through Village-level Intervention) engages village communities in Africa and India to monitor, use and manage groundwater at the village level. MARVI developed the MyWell app enabling the collection and sharing of monitored data of well water levels, rainfall, water quality and dam water levels to help local communities manage scarce groundwater reserves.

DEVELOPING THE NEXT GENERATION STEM WORKFORCE

Western Sydney University plays a pivotal role in supporting the STEM aspirations of students in Western Sydney. We will ensure they are well placed to take advantage of the growing demand for STEM skills across a broad range of industries, from new industries emerging within the Aerotropolis to advanced manufacturing, hi-tech agriculture and health science.

We will create sustainability through prioritising learning and research that promotes the UN Sustainable Development Goals, the sustainability of the environment, and ensuring our graduates are highly employable in industries that will achieve a better quality of life for all.

BY 2031, WE WILL:

- **Lead a Tech Job Accelerator for Western Sydney to drive innovation, enterprise and startups.**
- **Increase work-integrated learning across STEM disciplines.**
- **Host industry-university co-locations across Western Sydney.**
- **Be a provider and partner of choice for entrepreneurship training, micro-credentials, and industry internships to meet the region changing industry needs.**
- **Lead in MedTech, responding to clinical need, designing sustainable solutions and supporting local enterprise through commercialisation, education and training.**

ENRICHING CURRICULUM WITH LOCAL CONTEXT

We will educate students about STEM through a focus on the Western Sydney region. We will continue work with local teachers, councils, government agencies and industry partners to bring STEM in Western Sydney to life through the production of curriculum resources, linked to NSW syllabus documents.

For example, our curriculum project funded by Transport for NSW aims to design, implement and evaluate inquiry-based units of work based upon the Parramatta Light Rail project. The project will include a professional development course and a formal research evaluation of the design and implementation of the units of work that will be produced by the participating teachers.

Our STEM outreach, developed in consultation with school partners, will provide accredited programs tailored for the professional learning needs of early childhood, primary and secondary teachers. At the same time, our academics will deliver cutting-edge engagement programs for students.

A man with dark hair, wearing a red plaid shirt and a dark jacket, stands in a workshop. Behind him is a large industrial machine with a prominent orange and blue frame and a large, silver, circular metal wheel. The background shows a workshop environment with various tools and equipment.

21C PROJECT

THE 21ST CENTURY CURRICULUM (21C) PROJECT – GRADUATES WHO ARE STEM+ CAPABLE

21C STEM+ recognises that STEM capabilities cross disciplines, professions and different spheres of life.

The 21C STEM+ curriculum will develop the STEM capabilities required by all students to succeed in a technologically advanced future and to be leaders who use their STEM capabilities to drive positive change. Through curiosity pods, we address cross-cutting topics addressing industry industry workforce gaps.

STEM+ capabilities such as non-routine problem-solving, complex communication, adaptability and systems thinking have been identified as key to employability. The 21C STEM+ Curriculum Challenge will develop sub-majors through the renewal of units drawn from both traditional STEM disciplines such as Science and Engineering, but also from disciplines including Humanities, Health and Business.

The STEM+ curriculum will be co-created with game-changing industry partners and Western Sydney University students, working in collaboration to ensure that the learning outcomes are exciting to students, and authentic and relevant to the future needs of work and society.

Venture Makers – Western's Entrepreneurship Training and Development Program – will ensure any student from any degree an opportunity to engage with entrepreneurship training.

EQUITY

EMBEDDING DIVERSITY

IN EVERY ASPECT OF THE STEM WORK LIFE CYCLE



Western Sydney University will act as a leader in promoting equity in STEM through innovative STEM education research, active advancement of gender equity in STEM areas, and by partnering with others in the STEM education ecosystem to remove barriers and facilitate effective pathways towards further education and the STEM workforce.

We are committed to enhancing the lives of our students, staff and the community by promoting fairness, social justice and opportunities for success.

STEM FOR EVERYONE

We will help industry to meet their equity and diversity targets, for example through initiating industry partnership agreements to attract, develop and retain a cohort of strong talented female learners in higher education, initiating scholarships for female students, and encouraging female staff to lead and participate in industry, research and community activities.

The SAGE Action Plan (2019-2024) will dismantle entrenched barriers to achievement, bolster opportunity, and support career success for STEM women and trans and gender diverse staff across the academic work life cycle by structurally supporting and advancing achievement.

This work aims to disempower gender bias and stereotypes that reduce and diminish engagement in STEM disciplines for women, trans and gender diverse peoples, celebrate and raise the profile of our early career STEM women, recognise and elevate our female STEM leaders, better understand the intersectional experiences of STEM women of marginalised identity backgrounds, and promote flexible and culturally safe work environments that are responsive to the needs of our increasingly diverse STEM cohort.

INCREASING STEM PARTICIPATION BY INDIGENOUS STUDENTS

The STEM cluster aims to increase Indigenous participation by 5% by 2026.

The STEM Cluster's Indigenous Strategy 2022-2026, in accordance with the Western Sydney University Indigenous Strategy 2020-2025, will support positive learning experiences; prioritise early years literacy and numeracy, engagement and support in STEM learning in Indigenous communities; and provide support for alumni who aspire to connect with their community and to promote STEM education.

Internship programs will focus on providing Indigenous students the opportunity to continue to learn both at University and in the workforce.

BY 2031 WE WILL:


- Address intersectionality and increase enrolment in STEM by Indigenous students and by female students.
- Be recognised as a Regional Centre of Excellence in STEM education.

INTERNATIONAL CENTRE FOR NEUROMORPHIC SYSTEMS:

HARNESSING THE LOW-ENERGY PRECISION OF BIOLOGY, SUCH AS INSECT VISION AND
MOVEMENT, IN NEXT GENERATION COMPUTING AND VISION SYSTEMS

An abstract graphic featuring a translucent blue brain on the right side, with a complex network of white dots and thin blue lines representing neural connections extending across the entire image. The background is dark blue.

INNOC



INNOVATION

CONDUCTING HIGH QUALITY SCIENCE THAT WILL CHANGE THE WORLD

Universities are a key to innovation. Western Sydney University is transforming our local communities, Australia and the world through impactful research in partnership with industry and end-users.

Our high-quality STEM research collaboratively addresses global challenges and informs our innovative and flexible curriculum. We are creating future leaders who are highly employable and inspired to transform their communities and themselves.

NEUROMORPHIC ENGINEERING – NEW HARDWARE AND ALGORITHMS INSPIRED BY BIOLOGY

The human brain processes information faster than even the most advanced technology, and uses very little energy. Our neuromorphic engineering research will apply similar principles to electronics devices to achieve the same level of robustness and efficiency.

Neuromorphic solutions will provide sensors and algorithms that efficiently alert us to important changes in the earth and space environment so we can take action, rather than just capturing massive amounts of irrelevant data. Our solutions can be applied to space data and technologies, defence, driverless cars, mining, agriculture, IoT and speech and image recognition.

Western Sydney University has the only dedicated neuromorphic laboratory in Australia and is on track to become the leading academic neuromorphic engineering research concentration in the world. With a new Masters co-designed with industry, in the next decade we will be an Asia Pacific hub for training in this revolutionary technology.

BIOMEDICAL ENGINEERING TECHNOLOGIES THAT IMPROVE AND SAVE LIVES

Western Sydney University's biomedical engineers will work with health professionals to identify clinical needs and collaborate with entrepreneurs and startups to create new, scalable solutions. This incorporates the development of novel sensors, control systems, algorithms and physical devices, while leveraging the latest state-of-the-art technologies from other industries and repurposing them for new applications.

We provide training opportunities and commercialisation support, and have developed advanced solutions including:

- Braincubator, an incubation system for acute tissue samples – commercialised by PAYO Scientific
- HEXAS, a wearable arbitrary waveform stimulator that restores the sense of touch and balance. This device is in further development with an industry partner for astronaut training.
- Morphic sensors, a platform of electrodeless, non-optical sensors that allow precise physiological monitoring in a highly wearable fashion. In commercial development (saiiv.com) and trials for sleep disorder diagnosis, post-COVID infection monitoring and in-hospital use.

FORECAST AND PREDICTIVE MODELLING FOR THE FUTURE

Data is the decade's greatest asset for business, government and communities. Informed and expert-guided data collection, quality, governance, analytics and integration are driving foresight, decision making, strategy, enterprise, innovation and success.

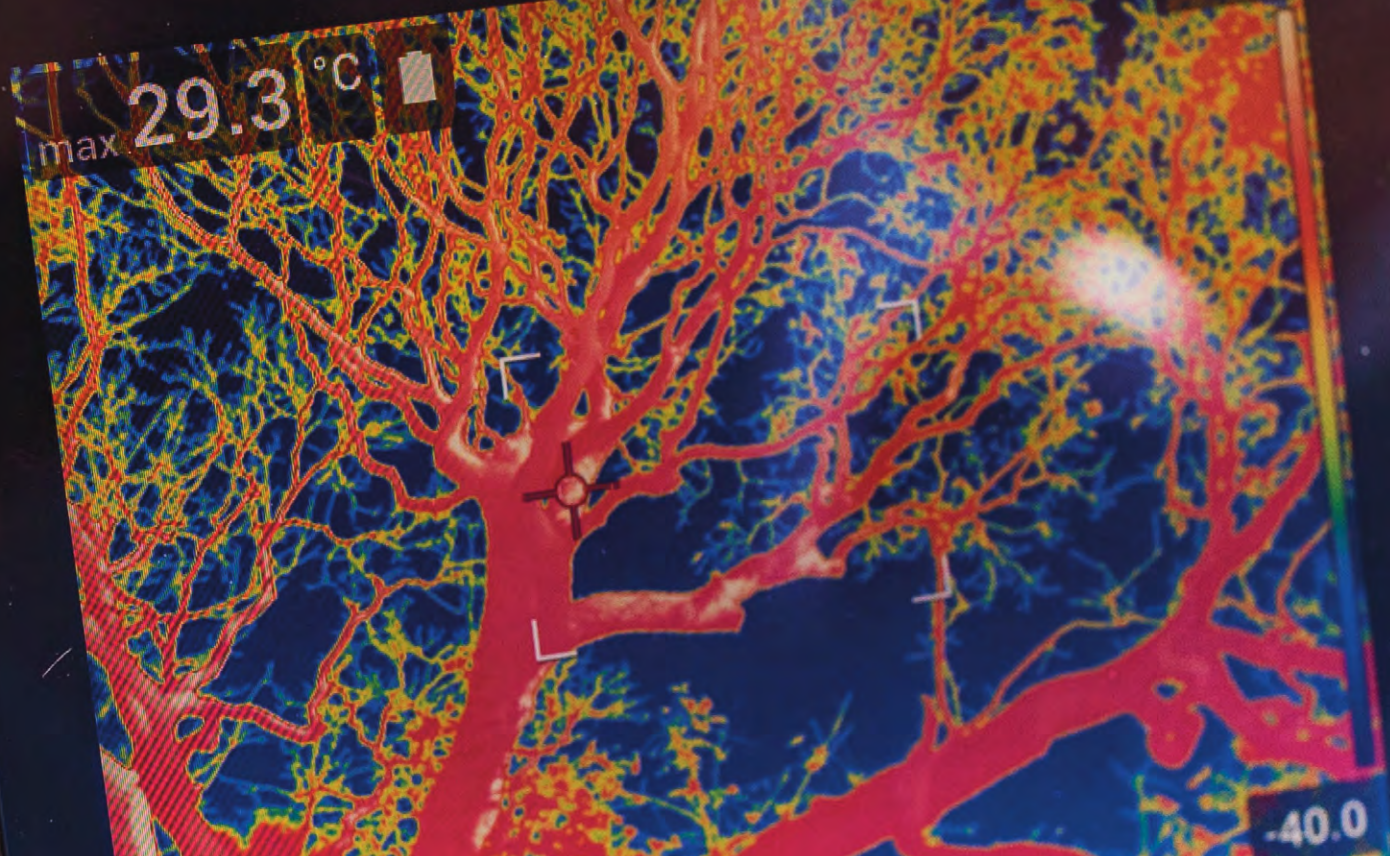
Industry, government, not for profit and community organisations co-design with Western Sydney University to find the problem and collaboratively determine impactful solutions. These range from products, services and recommender systems to data transformation, workflows, and algorithms.

With a Masters of Data Science, micro-credentialling opportunities for our partners and support for STEM education in schools, we are developing excellence in Western Sydney to address the data needs of the future.

AGRITECH – A \$100 BILLION OPPORTUNITY

With more than 1300 hectares of world-class agricultural facilities and a Masters in Sustainable Ecosystems, Western Sydney University is embracing AgriTech solutions, education and skills development.

We will integrate science, technology, engineering, mathematics, business and social science into agricultural systems research pathways. This work will help to mitigate the impact of climate change and international trade on food production, and support the agricultural industry to better manage our scarce natural resources.



Our plan is to develop frameworks for AgriTech implementations that showcase the potential of next-generation production systems at field scale through horticulture, protected cropping and within urbanised environments. These technologies will capture data through sensor networks, and provide advanced analysis and visualisation platforms that blend sensors, data capture and automation, robotics and cloud computing.

CLEAN DRINKING WATER FOR WESTERN SYDNEY

Based on our research, Sydney Water has built a pilot of the first system in the world to quantitatively predict the chemical and microbiological behavior in a chloraminated water system.

Chloraminated water is water cleaned with chloramine disinfectant, and is drunk by approximately 90% of Sydney Water customers. More utilities in Australia are switching to chloraminated system as a result of climate change.

Our research assesses the risk and provides an opportunity to evaluate impacts of various operational interventions. We hope the system will make an important contribution towards ensuring clean drinking water to public on chloraminated systems in a changing climate in Australia and around the world.

BUSHFIRE RESILIENCE

The unprecedented longevity, extent and character of the megafires of the 2019–20 fire season in eastern Australia highlighted the pressing need for new solutions for fire

detection, prevention and management of impacts on landscapes, the environment and property as well as businesses and people.

Our research into bushfire resilience will drive community awareness of and participation in bushfire mitigation programs. We will offer specialised short-course programs in disciplines such as building for fire resistance, remote and in-the-field fire behaviour analysis and response, incident management, and bushfire meteorology for practitioners such as the Rural Fire Service and other relevant agencies.

We will also conduct world-class research leading to industry commercialisation of new simulation methods, technology, forecasting and monitoring systems and ways of optimising long-term landscape management and mitigating health, property and economic impacts.

ADVANCED MANUFACTURING RESEARCH FACILITY

Western Sydney University as part of the NUW Alliance, and in partnership with the University of Technology Sydney, will deliver a shared research vision through the Advanced Manufacturing Research Facility (AMRF). The AMRF will be a collaborative, research intensive and industry engaged ecosystem.

Drawing on a network of specialist facilities, institutes, and expertise, the AMRF will drive in-excess of \$1.4 billion in industry and community partnered research. It will be supported by nearly 18,000 staff, and over 240,000 students across technology-infused teaching and research infrastructure and precincts.

Realising innovations from composites and fabrication, through to breakthroughs in neuromorphic science and quantum, the AMRF will catalyse leaps in Australia's advanced manufacturing capability. Located in the new city adjacent to the Western Sydney Airport, the AMRF will provide platform for collaboration and innovation that enables prototype development and rapid scale of new products and processes. A site that offers the genuine collaborative opportunity for government and research, the AMRF will service business providing both infrastructure and services.

With initial building commencing in 2023 with full operations by 2026, through the AMRF Western Sydney University will support the growth of future facing industries in areas from defence, space, and aerospace to construction technologies; new energies; and the circular economy.

BY 2031, WE WILL:

- Collaborate to lead nationally in Agritech to ensure sustainability, food security and cutting-edge food production solutions for the Indopacific region.
- Develop international leadership in neuromorphic engineering, especially advanced sensing capabilities, for Australia.
- Work with local health districts to design integrated health infrastructure and care.
- Establish a Centre of Excellence in Human-Machine Systems.
- Lead in Environmental Health and Stewardship, integrating our strengths in forecasting, predictive modelling, AgriTech and STEM education.

LAUNCH PAD:

A ONE-STOP SHOP BUSINESS AND INNOVATION
SUPPORT PROGRAM FOR STARTUP AND
HIGH GROWTH TECHNOLOGY BASED BUSINESSES
IN WESTERN SYDNEY

INNO

TRANSFORMATION

SUPPORTING THE PEOPLE & BUSINESSES OF WESTERN SYDNEY

Western Sydney University is embedded in the economic, cultural and social growth of the Western Sydney region. We work with communities to co-produce solutions and produce graduates who can contribute both locally and globally.

We find answers to the issues facing Western Sydney at a time of unprecedented development and change. Our education and research will be pivotal in driving a post-COVID economic return for the region. We provide a catalyst for facilitating commercialisation through integrating industry with education, training, research and development, and attracting and retaining talent.

LINKLAB - CREATING A SOLUTION FOR A PROBLEM, NOT A SOLUTION LOOKING FOR A PROBLEM

Linklab aims to address the reasons technology fails to translate to practice. With nodes in South Western Sydney, Western Sydney and Nepean Blue Mountains Local Health Districts, it brings together clinical, STEM and industry leaders into teams to identify addressable clinical needs, assess market need, and create the right partnerships to provide a realisable commercial solution. It then feeds back unaddressed clinical needs to Schools and Institutes for potential use as student projects or fundamental research.

PENRITH SUSTAINABLE INNOVATION COMMUNITY – A KNOWLEDGE NETWORK FOR WESTERN SYDNEY

The Penrith Sustainable Innovation Community will be an urban scale precinct, where people live, work and learn in a community with high amenity and connectivity. It will link with Western Sydney University's other campuses and provide a gateway to the Aerotropolis.

Located on our existing Penrith campus (Werrington North, Werrington South and Kingswood), this initiative will become an exemplar of transdisciplinary learning and a community for education, research, innovation and commercialisation.

BY 2031, WE WILL:

- Integrate STEM innovation and enterprise in Health and Medical Research precincts beginning with Westmead then Campbelltown, Liverpool, and Bankstown.
- Lead the region in forecast and predictive modelling in numerous domains.
- Support transformational regional developments such as the Nancy Bird Walton Airport through education and training.
- Partner to be leaders in advanced manufacturing, bringing together human machine systems, neuromorphic engineering and our tech jobs accelerator.





LAUNCH PAD

Technology Business Incubator

Launch Pad is a Tech Startup Incubator established to enable the growth of a startup community in Western Sydney. It provides a one-stop shop business and innovation support program that provides facilities, assistance and resources for startup and high growth technology based businesses in Western Sydney.

It supports business by providing modern but low-cost serviced office and co-working space, specialist business advice, mentoring, events, networking, training and education. Clients work within a highly collaborative environment with other technology-focused entrepreneurs, leading to problem solving, sharing of expertise and experience.

For entrepreneurs, Launch Pad promotes a model based on an end-to-end innovation experience, with the opportunity to work within a collaborative, technology-focused community, augmented by direct engagement with the applied research and expertise of one of Australia's largest and fastest growing universities.

Since its inception in 2016, Launch Pad has directly generated more than 430 jobs and has added more than \$100 million in value to the regional economy.



A woman with brown hair in a ponytail, wearing a light blue lab coat and white gloves, is working in a laboratory. She is looking down at something in her hands. In the foreground, there is a large potted plant with green leaves and small purple flowers. In the background, there are industrial-looking cabinets with red buttons and a window showing a building outside.

OPTIMISING THE FUTURE

Now and over the coming decade, there will be extraordinary challenges and opportunities for Western Sydney and Australia.

STEM at Western Sydney University, together with industry partners, communities and government, will lead bold solutions in health, food security, cybersecurity, environmental health, advanced manufacturing, aerospace, and urban transformation.

JOIN US TO

OPTIMISE THE FUTURE.

For more information, please contact:

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WESTERNSYDNEY.EDU.AU