



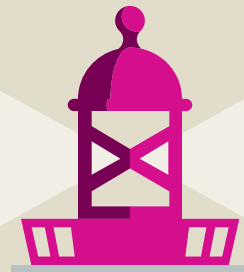
Research Strategy 2035

WORLD-LEADING RESEARCH; WORLD-CHANGING IMPACT

ABRIDGED VERSION

2025
World-leading
research

2035
World-changing
impact



ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the Traditional Custodians of the land on which Macquarie University is situated, the Wallumattagal People of the Dharug Nation, whose cultures and customs have nurtured, and continue to nurture, this land since time immemorial. We also acknowledge the Elders, past and present, and pay our respects to them.

We further honour and pay our respects to the spirits of this land and its waterways. We humbly ask that all members of the Macquarie University community are granted the capacity to wingaru (think), to learn and to walk safely upon this ngurra (land).

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Message from the Vice-Chancellor

It is with great pride that I present our new *Research Strategy 2035: World-Leading Research; World-Changing Impact*. A decade after the launch of the initial strategic research framework in 2015, I extend my congratulations to our esteemed academics and dedicated research support staff for their remarkable achievements in advancing our research outputs and quality.

I commend the Deputy Vice-Chancellor (Research) and his team for their agility and proactive approach to ensuring that Macquarie's research continues to thrive in an ever-evolving landscape. Their efforts have positioned us to leverage both internal strengths and external opportunities to reach new heights in the future.

The original strategic research framework set forth ambitious goals, many of which we have not only met, but exceeded. Building on this success, *Research Strategy 2035* aligns seamlessly with Macquarie University's overarching strategy, *Our University: A Framing of Dynamic Futures*, which envisions Macquarie as a continuously accelerating powerhouse of impactful research.

The realisation of our aspirations, as outlined in the University's *Operating Plan 2025–2030* and this new research framework, will undoubtedly elevate Macquarie's global reputation as a dynamic institution that transforms lives and advances knowledge. We stand poised to amplify our positive impact worldwide, with *Research Strategy 2035* serving as our compass for sustained excellence in research.

As we embark on the next decade of discovery and innovation, I look forward with great anticipation to our continued pursuit of groundbreaking ideas and transformative solutions. Together, we will push the boundaries of knowledge, foster interdisciplinary collaboration and address the most pressing challenges of our time.

Let us embrace this new chapter in Macquarie's research journey with determination and vision, knowing that our collective efforts will shape a brighter, more sustainable future for generations to come.

Professor S Bruce Dowton

MBBS MD FACMG FRACP FAICD FRSN
VICE-CHANCELLOR AND PRESIDENT



Our University

A FRAMING OF DYNAMIC FUTURES

PURPOSE

Macquarie University is a university of service, engagement and empowerment.

We serve, engage and empower our people, nurturing a culture of innovation in education, research and healthcare as a thriving academic community that transforms and improves lives.

We serve our communities, Australia and around the globe, working with partners who share our values and passion for positive impact to create a better world.

VISION

We aspire to be a transformative power. We will be renowned for the exceptional quality of our education and the experiences of our students, our world-class research with far-reaching impact, and the highest standards in Australia in our progressive academic health system. Macquarie University will respond to the needs of a rapidly changing world and shape its future, becoming:

- a destination of choice for students
- a continuously accelerating powerhouse of impactful research
- an employer of choice for our staff
- a provider of choice for people engaged with our health enterprise
- a community where everyone is valued, included and respected
- more deeply aligned with First Nations peoples
- a nexus for partnership and innovation in Australia and around the world
- a place of pride for graduates and alumni
- agile in response to the rapidly changing national and global landscape
- enduring and sustainable.

VALUES

As the current custodians of Macquarie University and all that it stands for, we deeply value and commit to:

COLLECTIVE AMBITION

We harness the diversity of individual talent and the power of the collective to excel in everything we do, creating positive impact.

PURPOSEFUL COLLABORATION

We are results-focused and actively collaborate to achieve our shared mission and our mutual objectives. We thrive on the open exchange of ideas, sharing expertise and resources within and far beyond the University.

BOLD INNOVATION

We are courageous in our pursuit of groundbreaking ideas and transformative solutions. We go beyond the ordinary through creative enquiry and unceasing curiosity.

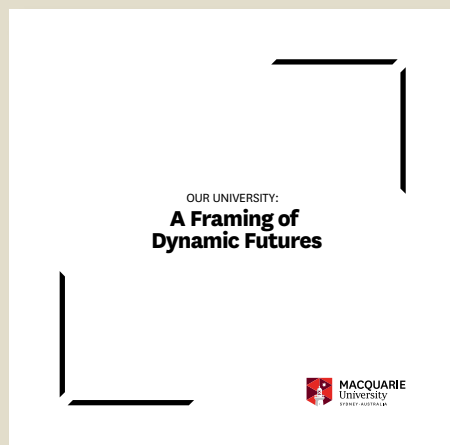
GENUINE CARE

We demonstrate care, empathy and concern for the wellbeing of individuals across our community and act with integrity and inclusion to foster the reputation and success of the University.

KEY AREAS OF FOCUS

- Our community
- Our endeavour
- Our place

Our University: A Framing of Dynamic Futures



Strategy implementation

UNIVERSITY OPERATING PLAN 2025–2030

CORE STRATEGIES

The Operating Plan recognises the University's commitment to three core strategies:

EDUCATION

With a relentless drive for quality, we are committed to excellent pedagogy, student experience and outcomes.

RESEARCH

Through accelerating areas of strength among our research staff and students, and by judiciously seizing new opportunities, we will contribute to solving local, national and global challenges.

HEALTH

Using our unique position of academically based healthcare integrated with education and research, we will create healthier futures for all.

OUR PRIORITY AREAS

The University Operating Plan sets out four priority areas of focus that underpin the University's core strategies:

PEOPLE AND ORGANISATIONAL CULTURE

Our people and culture are key to the University's success.

DIGITAL AND PHYSICAL ENVIRONMENTS

Our digital and physical environments make the University a destination for study, work and engagement.

PARTNERSHIPS AND GLOBAL NETWORKS

Connection with those near and far who share our ambition, values and interests strengthen Macquarie as an international university.

SUSTAINABILITY AND PERFORMANCE

Increasing the resilience of the University will enhance our success and secure the future.

**We will be renowned for
our world-class research
with far-reaching impact.**

University Operating Plan 2025–2030

STRATEGY IMPLEMENTATION:
**University
Operating Plan**
2025–2030

Foreword

DEPUTY VICE-CHANCELLOR (RESEARCH)

Macquarie University has long been synonymous with research excellence, innovation, application and impact. Our researchers, collaborating across disciplines and faculties, continue to spearhead world-leading research with world-changing impact. Since the inception of our original *Strategic Research Framework: 2015–2024*, we have achieved remarkable progress:

- 62 per cent increase in graduate research completions
- 42 per cent increase in peer-reviewed publications
- 174 per cent increase in Higher Education Research Data Collection (HERDC) research income
- 64 per cent increase in research block grants
- Elevation to 178 and 133 in the *Times Higher Education* World University Rankings 2025 and QS World University Rankings 2025, respectively

MACQUARIE UNIVERSITY'S COMMITMENT TO RESEARCH EXCELLENCE: CHARTING OUR COURSE TO 2035

As we commence 2025, the Australian higher education sector faces significant changes and challenges: the potential introduction of a sector 'steward' via the establishment of the Australian Tertiary Education Commission (ATEC), a shift to needs-based funding and the proposed doubling of university places by 2050. The *Australian Universities Accord* has seeded the potential for a pathway to fully funding university research, developing a new national research evaluation and impact framework, and raising the stipend rate for graduate researchers. However, the implementation of these research-related recommendations remains uncertain. These uncertainties present the sector with extremely challenging risks to be mitigated and, at the same time, tremendous opportunities to seize.

The crucial role of research and higher education in Australia's future economic prosperity has never been more profound, even as we navigate challenges such as restrictions on international student enrolment and consequent funding constraints. In this dynamic environment, our *Research Strategy 2035* is designed to be both robust and adaptable. Our commitment to research excellence and impact, and to collaborating to bring about meaningful change remains steadfast.

Building on the strengths of our previous 10-year framework and *Research Strategy 2025*, its mid-term refresh, *Research Strategy 2035* draws on tried-and-true elements and introduces new strategies and concepts designed to ensure our success over the next decade. *Research Strategy 2035* remains structured around three core elements, all aimed at supporting excellent research at scale to maximise benefits for Australia: five future-shaping research priorities, four key research objectives and aspirational targets that are measurable and achievable.

FIVE FUTURE-SHAPING RESEARCH PRIORITIES

1. Healthy People
2. Resilient Societies
3. Prosperous Economies
4. Secure Planet
5. Innovative Technologies

FOUR KEY RESEARCH OBJECTIVES

1. Accelerate world-leading research performance
2. Develop the world-ready research leaders and thinkers of tomorrow
3. Engage as a world-recognised research collaborator of choice
4. Deliver research with world-changing impact

MEASURABLE AND ACHIEVABLE ASPIRATIONAL RESEARCH TARGETS

We aim to improve productivity through strategic alignment of competitive capabilities with a laser-sharp focus on excellence, professionalism, agility and the significance of our research.

At Macquarie, we embrace our responsibility to enrich society through rigorous research, driven by a quest for deep understanding of disciplinary fundamentals and the application of our research for the betterment of our world. We are committed to fostering a positive research culture that promotes quality, ensures responsible conduct, and manages risks and sensitivities effectively. Collaboration with industry, government, communities, professions and academic colleagues worldwide remains central to our success and we welcome new collaborations while strengthening and valuing those we already have.

At the heart of the University's research endeavours are our graduate research students. The University's vision to be renowned for the exceptional quality of our education and the experiences of our students applies emphatically to the graduate research students who play such a vital role in the University's culture: contributing to the generation of new knowledge, operating at the core of collaborations, and developing into our academic and industry leaders of the future. Our collaboration with leading universities worldwide is essential to this vision – to enable collective problem-solving that addresses the world's most pressing issues but also to offer alternative perspectives and experiences that ensure our research graduates are truly world-ready.

As we continue to attract and nurture the brightest minds, and develop the next generation of talented researchers and world-ready leaders, Macquarie will seize focused opportunities in 'nation-building' cross-disciplinary and applied research to achieve outcomes of significance. These efforts will align with government priorities while building upon our foundational strengths in fundamental research and disciplinary expertise.

Our unique approach, embodied in our 'You to the Power of Us' brand, is rooted in the principle of consilience – the convergence of evidence from diverse, independent sources to form robust conclusions. This approach integrates research from science, technology, engineering, mathematics and medicine (STEMM) and humanities, arts and social sciences (HASS), leveraging multiple knowledge domains to develop comprehensive solutions to global challenges. Consilience is at the heart of our strategy for our University Research Centres and serves as a key differentiator for Macquarie.

Research Strategy 2035 upholds the fundamental principles of academic freedom and scholarship. It provides a clear, enduring strategic direction without constraining the creative and dynamic nature of cutting-edge research, development, innovation and impact in our ever-changing world.

I eagerly anticipate engaging with each member of our community: the dedicated staff in the University's portfolios who make university research possible, and our faculty members – our esteemed researchers, graduate researchers and research support staff – who work tirelessly at the forefront of research excellence. I also look forward to collaborating with our exceptional Research Portfolio team, whose expertise, dedication, productivity and passion for supporting our researchers' success drive our daily efforts. Together, we will elevate Macquarie University to new heights as a global leader in research. Beyond Macquarie, I am excited about what we can achieve in collaboration with our partners in industry, government and the community to solve problems and add value to all aspects of life and the world we live in.

Let us embark on this exciting journey together, shaping the future of research and reaffirming Macquarie University's position as a beacon of innovation and excellence on the global stage.



Professor Sakkie Pretorius
DEPUTY VICE-CHANCELLOR (RESEARCH)

Research Strategy 2035

AT A GLANCE

FOUR KEY RESEARCH OBJECTIVES WITH 16 GOALS AND 128 SUPPORTING STRATEGIES

1 Accelerate world-leading research performance

High-performing staff in an enabling culture:

Enhance the capacity and performance of researchers through a supportive culture.

A fit-for-purpose research architecture with world-leading research concentrations of excellence:

Optimise the University’s research architecture to support researchers, foster leadership and augment research strengths via consilient research collectives and agile research initiatives.

Optimise research investment and expand research income from diverse sources:

Accelerate growth and diversification of external research income to facilitate world-leading research.

2 Develop the world-ready research leaders and thinkers of tomorrow

Attract high-potential graduate researchers: Attract diverse talent from Australia and around the world through innovative pathway programs, global partnerships and targeted scholarship schemes.

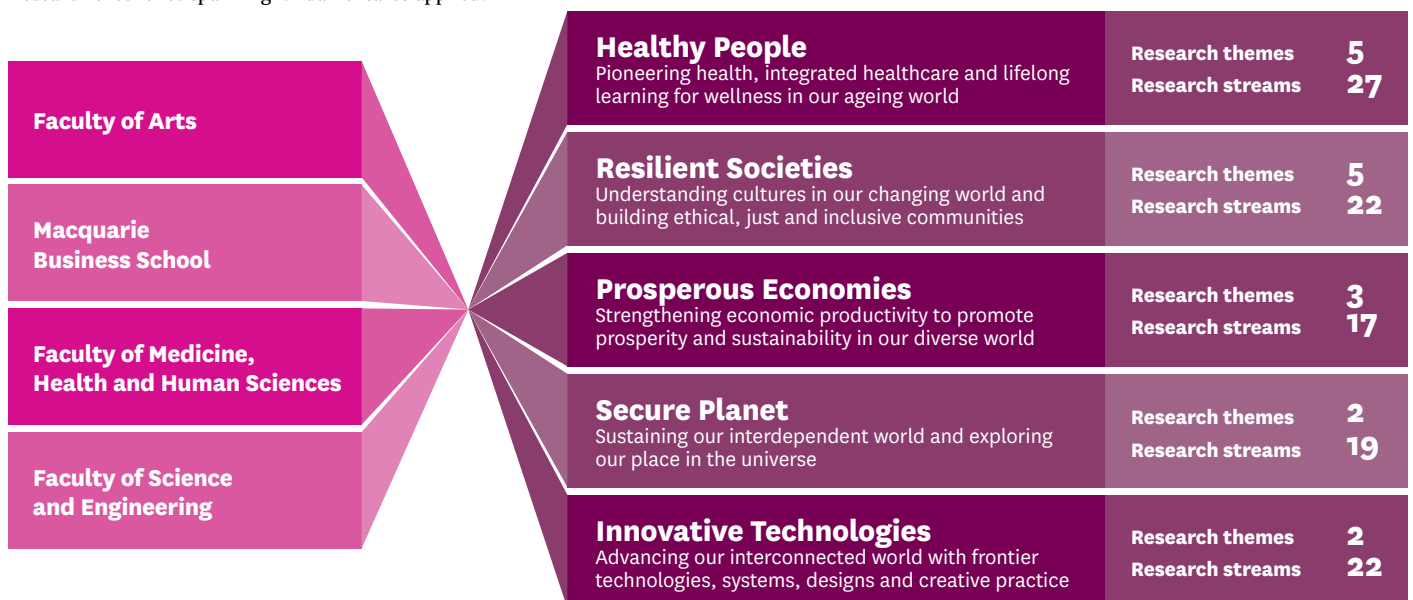
Develop world-ready graduate researchers: Prepare graduate researchers for a diverse range of research careers in academia, industry or entrepreneurship.

Provide an exceptional graduate researcher experience: Deliver an exceptional experience for graduate researchers through access to world-class research environments, high-quality supervision, responsive support programs and enriching learning opportunities.

Engage externally through graduate research for mutual benefit: Leverage the graduate research program to drive research outcomes and innovation through connection to strategically aligned partners locally, nationally and globally.

FIVE FUTURE-SHAPING RESEARCH PRIORITIES WITH 17 RESEARCH THEMES AND 107 RESEARCH STREAMS

Research excellence spanning fundamental to applied.



Research Strategy 2035 refreshes and builds on the achievements of the *Strategic Research Framework: 2015–2024* and its mid-term refresh – *Research Strategy 2025*. The foundations of the framework (the future-shaping research priorities and key research objectives) remain stable as intended, and other elements (research themes, research streams, goals and supporting strategies) have been updated to reflect internal and external changes. The University’s research targets remain ambitious while reflecting the challenges and opportunities that may impact Macquarie and the broader higher education sector in the coming decade.

Internally, the University’s new strategic framework, *Our University: A Framing of Dynamic Futures*, has served as the lodestar for the development of *Research Strategy 2035*. The research themes and streams in *Research Strategy 2035* reflect the evolution of our current and emerging research strengths, while the supporting strategies springboard from the advances made in the University’s systems, processes and structures over the past 10 years.

Externally, the Australian higher education sector is in a state of flux. *Research Strategy 2035* has been crafted to guide our path towards our north stars of quality and excellence, and to ensure flexibility and adaptability as changes in coming years – possibly arising from the *Australian Universities Accord*, the proposed strategic examination of Australia’s research and development (R&D) system, and the introduction of Ministerial Direction 111 – take shape and impact the research landscape. The goals encompass the fundamental building blocks towards success, while the 2035 targets reflect the current uncertainty in the sector and are a balance between achievability and ambition.

3

Engage as a world-recognised research collaborator of choice

Engage strategically in a more purposeful way:

Pursue local, national and international partnerships to complement and enhance current and emerging research strengths.

Pursue deep and authentic academic collaborations nationally and internationally:

Build mutually beneficial, long-term engagement with national and international colleagues.

Forge local and global synergistic end-user partnerships:

Build expertise and pursue shared objectives with end users to maximise delivery of solutions and value for investment.

Streamlined support: Facilitate efficient and effective partnerships through streamlined support processes.

4

Deliver research with world-changing impact

Fundamental research for discovery and impact in academia:

Strengthen basic research capability to drive excellence and innovation in discovery.

Challenge-focused research for real-world, sustainable impact:

Conduct cross-disciplinary research that addresses local, national and global challenges and delivers benefits of significance.

Sustain an ecosystem of pervasive best practice for research excellence and impact:

Foster a culture and support structures that prioritise continuous improvement in the pursuit of research excellence and impact.

Create, capture, convey and celebrate diverse forms of impact:

Foster an environment that facilitates, values and communicates diverse forms of impact achieved through knowledge creation, application and creative practice.

Affirm Macquarie’s reputation for world-leading research with world-changing impact:

Ensure Macquarie’s systems and practices enable us to effectively share the value of our research with collaborators, communities and assessors.

2035 RESEARCH TARGETS



\$180M
HERDC
research
income



680
graduate
research
completions



5000
research
publications



100%
research at or
above world
standard



10
impactful
innovations or
breakthroughs



TOP 100
global
ranking



The Macquarie University context

AN OVERVIEW

Since its establishment in 1964, Macquarie University has maintained its commitment to innovation and distinctiveness. From 2013, the University's strategic direction has been guided by *Our University: A Framing of Futures*. This vision now evolves through its successor, *Our University: A Framing of Dynamic Futures*, which establishes three key areas of focus: Our community, Our endeavour and Our place.

Under the banner of Our endeavour, the University pledges “a tireless energy and commitment to excellence in education, discovery and healthcare through innovation and partnership, with a determination to embrace the challenges and opportunities of a rapidly changing world.” This commitment encompasses Macquarie's three core domains: Education, Research and Health. Within this overarching framework, the University's research purpose is clearly defined: “through accelerating areas of strength among our research staff and students, and by judiciously seizing new opportunities, we will contribute to solving local, national and global challenges.”

Research Strategy 2035 derives its foundational principles from *Our University: A Framing of Dynamic Futures* and aligns with several key institutional frameworks:

- *Diversity, Inclusion and Belonging Framework 2024–2028*
- *Heal. Learn. Discover. MQ Health Strategic Plan 2022–2026*
- *Indigenous Research Plan 2020–2025*
- *Macquarie Advantage*
- *Macquarie University Sustainability Strategy 2024–2030*
- *University Operating Plan 2025–2030*

While many of the key institutional frameworks, plans and strategies have end dates earlier than *Research Strategy 2035*, the research strategy will continue to support future iterations of each in addition to new strategies that may arise over the course of the next decade.

THE SYMBIOSIS OF EDUCATION AND RESEARCH

The intrinsic connection between education and research is central to Macquarie's identity as an Australian university. Within the *Macquarie Advantage* education framework, the Succeed priority area emphasises “A transformational curriculum: Ensuring our curriculum is modern and agile, research-connected and industry-informed, and developed in partnership with key stakeholders”. By refining the curriculum, innovating assessment, and supporting staff to provide students with exceptional teaching and real-world education, the *Macquarie Advantage* enables Macquarie's academics to rediscover the time to invest in the research that is so vital to our reputation and the continued attraction of students.

In an increasingly competitive sector, one of Macquarie's greatest strengths lies in its research-enriched educational environment. By immersing undergraduates in research principles – critical thinking, analytical inquiry and effective communication – we prepare them for successful careers, whether as industry professionals, future Master of Research or PhD candidates, postdoctoral research fellows or research leaders.

Building on an exceptional foundation

In 2013, the Festival of Ideas was held to kickstart University-wide engagement to inform the development of the *Strategic Research Framework: 2015–2024*. Since that time, Macquarie achieved remarkable progress in accelerating its world-leading research with world-changing impact. Some of our many advances include:

- Macquarie’s Higher Education Research Data Collection (HERDC) research income increased by 174 per cent, or more than \$84 million, from \$48.6 million in 2013 to \$133 million in 2024. Using the most current national data (2023), research income achieved by the Australian higher education sector increased by 74 per cent over the period 2013–2023 with Macquarie’s increase for the same period being 155 per cent. This is an exceptional trajectory, reflecting the dedication and excellence of Macquarie’s researchers.
- The University’s goal to continue to grow its Category 1 income, vital for high-reputation, discovery research, while simultaneously increasing its other sources of research income was achieved over the 10 years of the Research Framework. Category 1 funding increased from \$31 million in 2013 to \$60 million in 2024: It comprised 63 per cent of total research income in 2013, but only 45 per cent of the total in 2024. This reduced proportion of Category 1 funding reflects the University’s trajectory of success in attaining alternatives to Category 1 funding, in particular Category 2 and Category 3 funding. Between 2013 and 2023 Macquarie achieved a 59 per cent increase in Category 1 research income while the sector increased by only 47 per cent across the same period.
- Between 2014 and 2024, Macquarie increased its Category 2 income by 139 per cent. Using the 2013 to 2023 data, the Category 2 research income achieved by the Australian higher education sector increased by 78 per cent while Macquarie achieved growth of 224 per cent.
- Between 2013 and 2024, Macquarie increased its Category 3 income by 406 per cent. During the period 2013 to 2023, the sector increased its Category 3 income by 124 per cent with Macquarie’s Category 3 income increasing by 384 per cent over the same period.
- Macquarie’s graduate research completions increased by 62 per cent, from 297 completions per year in 2013 to 480 in 2024. Since 2013, Macquarie has led the sector in graduate research completions per academic full-time equivalent (FTE) when compared to universities completing 100 or more research graduates per year.
- Macquarie’s research publications increased by 42 per cent, from 2798 in 2013 to 3980 in 2023 (with highs of 4409 and 4400 in 2021 and 2022 respectively), while maintaining a focus on quality. Demonstrating the importance of our graduate researchers, between 2018 and 2023 almost one-third of all Macquarie-affiliated research publications were authored or co-authored by graduate research students with the average number of citations per paper being slightly higher for papers co-authored with graduate research students than for staff-authored research publications (20.06 compared with 20.04).
- Macquarie pursued innovation in research training, as the first university in Australia to establish the Master of Research (MRes) program: a two-year research degree as the standard pathway to a PhD. Beginning in 2025, the MRes is now even more flexible and offers broader market appeal with the introduction of new, stackable research training courses, including a Graduate Diploma of Research, with a nested Graduate Certificate, followed by a one-year MRes.
- In 2013, the University was ranked in the 251–275 band in the *Times Higher Education* (THE) World University Rankings with the sub-category of Research being allocated a score of 29.6. In the 2025 THE World University Rankings Macquarie is ranked at 178 and has a Research Quality score of 89.4.
- QS World University Rankings ranked Macquarie at 263 in 2013 with citations per faculty scored at 30.5. In the 2025 QS World University Rankings, Macquarie moved to 133 in the world with citations per faculty scoring 79.6.
- Macquarie has more than 35 years of experience in cotutelle and joint PhD study, and hosts the largest cotutelle program in Australia, adding an international dimension to our graduate research experience. In 2024 the University implemented its *Global Research Training Strategy*, which builds on this robust history by refocusing resources towards strategically aligned partners.

Breakthroughs and innovations

In terms of academic and real-world impact, over the 10 years of the Research Framework, Macquarie has achieved many outcomes of significance, including:

- enhancing the safety of Indigenous digital lives
- impacting the judiciary's perceptions of remorse
- helping to counter violent extremism
- providing thousands of children with online mental healthcare
- improving the sustainability and procurement practices of major chocolate multinationals around the world
- developing two of the five technologies that run global securities markets
- pushing back the accepted date of modern human dispersal through Southeast Asia by 40,000 years
- reducing the negative ecological impact of human-made coastal structures
- using bioclimatic modelling and environmental tolerance testing to reduce the threat of climate change in urban green spaces
- reducing insecticide use, increasing prosperity in rural communities, and supporting food security in developing nations through the development and application of sterile insect techniques
- creating a better health system and reduced error rates in the prescription of medicine to children in Australian hospitals
- developing new tools to identify surgical innovation and making surgical interventions safer for patients
- undertaking clinical trials that contributed to 20 listings on the Pharmaceutical Benefits Scheme, resulting in about 100,000 Australians receiving subsidised access to new treatments
- developing and delivering new gene therapies to motor neuron disease (MND) patients and enabling three children to be born MND-free due to IVF pre-implantation screening
- conducting first-of-kind and first-in-human studies against terminal MND and untreatable metastatic cancer
- developing world-leading microsimulation capabilities that enabled the Medicare-listing of genomic tests for mitochondrial disease
- developing synthetic biology products that mitigate emissions for industry sectors that currently generate more than 3 per cent of global greenhouse gas emissions
- developing a foundational glass chip technology that will underpin next-generation optical communications
- designing semiconductor chips for terrestrial and space applications with more than 20,000 units manufactured
- building one-of-a-kind instruments that enable unique telescopes to collect vast quantities of data spanning billions of years of the universe.

By all these measures, Macquarie is well established as one of Australia's leading research universities.

Macquarie's strategic advantages

Our location on 126 hectares of park-like land is protected by award-winning sustainability practices. Our campus is situated within the Macquarie Park Innovation District, a nationally significant research and business precinct specialising in the communications, medical research, pharmaceutical and information technology and telecommunications sectors. This allows us to build effective, long-term collaborations with business and industry, including some of the world's leading multinationals. Our proven ability to build unique research concentrations that bring together end users, suppliers, policymakers and basic and applied researchers is a competitive advantage we seek to maintain and build on. Effective collaboration and innovation are facilitated by more than 180 large international and 200 small-to-medium businesses with easy access to the campus, the Macquarie University Hospital and the Macquarie University incubators.

We are the only Australian university with its own hospital. The Macquarie University Hospital and Clinics and the Faculty of Medicine, Health and Human Sciences bring together best-practice clinical care, education and research to create an integrated approach to patient care, discovery and health workforce preparation, under Australia's first fully integrated healthcare enterprise: MQ Health. MQ Health brings together medical and allied health researchers and offers them access to the world-leading clinical resources and research facilities found on the University's campus.

Such is the importance the University places on this drive to improve lives, that health has been elevated to be one of the three core, mission-critical endeavours of the University: Education, Research and Health. As such, Macquarie has in place the *Heal. Learn. Discover. MQ Health Strategic Plan 2022–2026*. Pillar 5 of the plan – impactful research – states: “We will grow and align our research activities to deliver the greatest possible impact for our patients and our community.” The strategies by which we will achieve this – increasing translational research in areas of clinical strength, providing opportunities for clinicians to be embedded in the clinical operations of MQ Health, and expanding the activities of the Clinical Trials Unit (CTU) – would not be possible without the advantage of owning our own Hospital.

The CTU aspires to be a clinical research centre of excellence, renowned for pioneering and transforming the health of patients and society. The trials run at the CTU deliver timely access to novel therapies for patients across a wide range of conditions including cardiovascular, respiratory, gastrointestinal, ophthalmological and neurological diseases and cancer. The CTU draws on the world-class facilities at the Macquarie University Hospital and the clinical expertise within the Faculty of Medicine, Health and Human Sciences to use innovative research to shape the future of healthcare.

Macquarie University is a global hub of hearing and hearing-related research, education and engagement. We combine world-leading discovery, clinical expertise and connective capacity to create knowledge and transform hearing health policy and practice. A fundamental facility underpinning this endeavour is the Australian Hearing Hub, hosted on Macquarie's Wallumattagal campus. The Australian Hearing Hub unites researchers, educators, clinicians and innovators with expertise in audiology, speech pathology, cognitive and language sciences, psychology, nano-fabrication and engineering sciences. It is a unique facility, purpose-designed to optimise hearing health and transform life outcomes for people with hearing loss, by collaboration among a community of organisations dedicated to hearing research,

innovation, education and practice. Anchored by world-leading company Cochlear, and leaders in hearing such as Hearing Australia, National Acoustic Laboratories, The Shepherd Centre and NextSense located on campus, the Australian Hearing Hub is a global leader in hearing-related research.

In 2023, Macquarie became affiliated with a not-for-profit medical research institute – The Woolcock Institute – that aims to improve quality of life for people affected by sleep and breathing disorders. Located on campus, the Woolcock Institute is ranked as the top sleep and respiratory research organisation in the world, and the Macquarie–Woolcock affiliation opens up new collaborative opportunities in fields of research including respiratory and sleep medicine, neurosciences and neurophysiology, dementia and neurodegenerative disorders, cancer and cardiology, including a number of clinical trials.

Macquarie University is home to the Australian Genome Foundry (AGF), a high-throughput biofoundry that enables large-scale, high-throughput genetic modifications. The AGF partners with academics to address fundamental biological questions, and with industry to engineer superior industrial microbes and proteins. The work of the AGF will complement the research planned for Australia's first-of-its-kind RNA Research and Pilot Manufacturing Facility that is being built on campus. The facility will produce a wide range of RNA therapeutics and potential delivery technologies, providing New South Wales and the Australian Capital Territory with scalable manufacturing opportunities that bolster sovereign capability.

Finally, Macquarie offers significant internal funding to support research and research training through a wide variety of funding schemes and investment in strategic opportunities. The University invests substantially in supporting its graduate research students and stimulates research excellence via a range of internal funding schemes that support early career researchers to laureate professors, infrastructure to fellowships, and cutting-edge research to technology transfer. Given the increasingly competitive environment and the scarcity of hard-won resources, it is important that the University's internal research funds are allocated to achieve maximum return in terms of external research income or impact. Decisions about the allocation of internal funds are guided by principles such as excellence, significance, alignment, consilience, competitive advantage, developing our researchers and equity, and take into account the availability of external funding, performance, proposed collaborators and end user engagement, and the potential for impact.

Macquarie University expects all staff, students and those conducting research under its auspices to employ the highest standards of ethics, responsibility and integrity in the conduct of their research.

RESEARCH INTEGRITY

Macquarie University is committed to the highest standards of research integrity. As set out in the Macquarie University Code for the Responsible Conduct of Research (Macquarie Research Code) (2019, updated 2023) and associated policies and guidelines, the University expects all staff, students and those conducting research under its auspices to employ the highest standards of ethics, responsibility and integrity in the conduct of their research.

Macquarie's research integrity policies, procedures and guidelines constructively promote the responsible conduct of research and, moreover, researchers are supported by a network of Research Integrity Advisors and Research Integrity Champions. This integrity network, in collaboration with the Research Integrity Office, provides advice and guidance on research best practice and offers discipline-specific education, awareness and capacity building, resources and mentoring.

The University's commitment to research integrity and quality research is evident in its adoption of:

- targeted online research integrity modules for staff and research students
- research data management training and the implementation of FAIR (Findable, Accessible, Interoperable, Reusable) and CARE (Collective benefit, Authority to control, Responsibility, Ethics) data principles
- the requirement for data management plans to ensure responsible data handling and promote transparency and accountability throughout the research lifecycle
 - the development of guidance on the use of Generative AI in Research
 - the use of trust markers to indicate best-quality research practices
 - continuing professional development workshops on current global integrity issues such as paper mills, authorship standards, publication integrity, trustworthy research, predatory research practices and reproducibility in research.

The Macquarie University Research Code Complaints, Breaches and Investigation Procedure (2019) is used to assess complaints about breaches of the Macquarie Research Code. The increasingly complex matters under review by the Research Integrity Office, due to, inter alia, the global nature of research, the growth of interdisciplinary research, researcher mobility, and opportunities for bad faith actors using paper mills and publication syndicates, has led to greater reliance on the trust markers of good research practice. The Macquarie University Research Integrity Office works closely with national and international leaders in the field, funders and governments, to monitor these developments and to embed research integrity as a core component of quality research. The University, via the Research Integrity Office and in collaboration with its integrity network, will continue to develop strategies to meet global integrity challenges and to assist researchers in conducting their research responsibly and reporting it transparently.

The changing research environment

Since the launch of the *Strategic Research Framework: 2015–2024* and the refreshed *Research Strategy 2025*, much has changed that has impacted, or has the potential to impact, our research enterprise at Macquarie. There are many challenges but also opportunities in the recommendations of the *Australian Universities Accord (2024)*; in the proposed repurposing and re-visioning of governance and funding bodies (including the Tertiary Education Quality and Standards Agency (TEQSA), the Australian Research Council (ARC) and the potential Australian Tertiary Education Commission (ATEC)); in the next generation of national research assessment; in countering foreign interference (CFI) mandates; and in strategic examination and finessing of Australia's broader R&D system. The Australian higher education sector will continue to experience significant transformation over the period of *Research Strategy 2035*, driven by intersecting forces of policy reform, economic pressures and evolving student demographics.

The Australian Government's National Science and Research Priorities (2024) position science and research as pivotal to Australia's capacity to address global challenges, disruptions and opportunities. These new priorities, established with a 10-year outlook, align closely with Macquarie's five future-shaping research priorities and their supporting research themes and streams.

THE NATIONAL SCIENCE AND RESEARCH PRIORITIES

1. Transitioning to a net zero future
2. Supporting healthy and thriving communities
3. Elevating Aboriginal and Torres Strait Islander knowledge systems
4. Protecting and restoring Australia's environment
5. Building a secure and resilient nation

These priorities also underscore the significance of social science and humanities research and expertise in addressing societal challenges, emphasising the need for a holistic approach to the complex interactions between people, technology and society. Notably, priority 3 closely aligns with Macquarie's *Indigenous Research Plan 2020 – 2025*.

The Australian Government's challenge-based, overlapping and cross-disciplinary approach to these priorities resonates with Macquarie's ethos of consilience, collaborative research ('hunting in packs'), and the mission-based focus of our Macquarie University Research Centres.

Australia's National Science Statement A Future Made in Australia (2024) outlines five imperatives that will guide Australian investment over the next decade:

1. Australian scientists, science institutions and infrastructure shaping Australia's scientific future
2. Science at the centre of Australian industry
3. A diverse, skilled workforce to underpin the translation of science into new industries
4. Embracing science to drive Australia's regional and global interests
5. A science system prepared for future challenges.

These imperatives, and the underlying strategies that support recognition and flexibility of movement for researchers and entrepreneurs across industry, research and government, align closely with Macquarie's goals and the supporting strategies outlined in this document. While the National Science Statement is, necessarily, very 'science'-focused, for the purpose of Macquarie's research ambitions, the word 'research' could be used interchangeably with the word 'science' in any of the five imperatives and their underlying strategies. By all measures, Macquarie is well positioned to play a leading role in the achievement of the national science and research priorities over the coming decade.

More broadly, the *Australian Universities Accord (2024)* and other consultations have recognised that our future research workforce depends on our capacity to invest in graduate researchers, early career researchers and longer-term research careers. These aspirations are challenged by significant economic pressures, such as cost of living relative to stipends and precarity in academic roles. International research students and academics face additional barriers to participation in Australia's higher education sector, including visa approval delays and immigration costs, potentially losing important talent and capability.

In addition, the University must navigate a path to empowering our research community to build meaningful international collaborations while acknowledging and being sensitive to the changing global environment.

THE CHANGING NATIONAL SECURITY AND DEFENCE REGULATORY LANDSCAPE

Following the Australian Government's release of the University Foreign Interference Taskforce (UFIT) *Guidelines to Counter Foreign Interference in the Australian University Sector*, the *Australia's Foreign Relations (State and Territory Arrangements) Act 2020* was enacted in 2021. This Act regulates Macquarie's written arrangements with foreign entities, enabling the Foreign Minister to cease those arrangements by public declaration if they are determined to be counter to the national interest. Macquarie University responded by establishing a Countering Foreign Interference (CFI) Working Group chaired by the Deputy Vice-Chancellor (Research), who is the designated Accountable Authority for the University on countering foreign interference, and a Research Risk Review Committee chaired by the Pro Vice-Chancellor (Research Services).

In 2021, the Australian Government announced AUKUS, refreshed the UFIT guidelines and released the Critical Technology Policy Framework. The refreshed guidelines had an increased focus on social cohesion and campus culture. In 2022, the Australian Security Intelligence Organisation (ASIO) released a publication for the university sector titled *Collaborate with Care*. This publication sought to raise awareness of the risks of research collaboration with individuals and entities that may operate counter to Australia's national interests.

In 2023, the Australian Department of Defence began consulting with the university sector on changes to the *Defence Trade Controls Act 2012* in support of the AUKUS agenda. The changes were enacted in 2024 in parallel with the implementation of the Safeguarding Australia's Military Secrets legislation. Also in 2024, critical technology visa screening measures were enacted within the Department of Home Affairs, and legislative reviews undertaken of *Australia's Foreign Relations Act 2020*, the Foreign Influence Transparency Scheme, and Australia's sanctions regime. Significant legislative change is anticipated in 2025 based on the outcome of these reviews.

Criminal penalties associated with national security and defence legislation range from eight to 25 years imprisonment, to over \$700,000 in fines for individual offences. These offences can apply to a university's responsible officers or a university itself, in addition to academics undertaking a specific activity. In response, Macquarie has focused on enhancing due diligence procedures and enabling an academic culture of reasonable precaution. Macquarie's policy library, as it relates to national security and defence (Macquarie's Research Risk Review Procedure and Countering Foreign Interference Due Diligence Framework), is based on Australian Government requirements, information and advice and is regarded as an example of leading practice nationally.

Over the period 2025–2035, it is anticipated that national security and defence regulations will continue to tighten, with the intention of decreasing the transfer of sensitive knowledge and critical technologies to nations identified as operating counter to Australia's. The University is well placed to respond to this tightening legislative and regulatory environment as it look to continue meaningful international collaborations.

Future-shaping research priorities

AN OVERVIEW

Contemporary global challenges are complex, interconnected and dynamic, necessitating innovative thinking and the discovery, synthesis and application of new knowledge. The intricacy of these issues demands sophisticated, holistic solutions that can only be achieved through the combined expertise of diverse, cross-disciplinary teams.

Our five future-shaping research priorities serve as focal points for the University's cross-disciplinary research, aligning with the national research agenda, significant global challenges, and our areas of current and emerging research strength. They articulate Macquarie's research strengths and the impact we aspire to have on the world. They are designed to provide long-term stability and reflect the overarching cross-disciplinary nature of our research and the global issues we face.

The broad and inclusive future-shaping research priorities, supported and nuanced by research themes, offer scope for faculties and individual researchers to pursue their areas of expertise within the context of opportunities to contribute to national and global challenges of significance.

Our mission is to concentrate our cross-disciplinary research efforts, lead the nation in select areas, build excellence at scale and establish a reputation that will further attract world-class researchers, graduate research students, collaborators and funding support.

The University's commitment to these research priorities is a commitment to impact, to making a difference and to measuring that effect.

Macquarie will support and grow the areas articulated in our research themes and streams while maintaining an agile and opportunistic approach to new areas of growth potential. A description of each priority and its supporting research themes is found on the following page.

1



Healthy People

Pioneering health, integrated healthcare and lifelong learning for wellness in our ageing world

THEMES

- Pedagogies for health and lifelong learning
- Health and resilience
- Translational health and medical research
- Sensory and cognitive processing
- Hearing, language and literacy

2



Resilient Societies

Understanding cultures in our changing world and building ethical, just and inclusive communities

THEMES

- Societal transformation
- Culture and communication
- Ethics, governance and justice
- Transformational education experiences
- Indigenous knowledges, contemporary challenges and opportunities

3



Prosperous Economies

Strengthening economic productivity to promote prosperity and sustainability in our diverse world

THEMES

- Role, operation, risks and transformation in global financial and economic systems
- Nature-positive economies
- Organisational sustainability, productivity and competitiveness

4



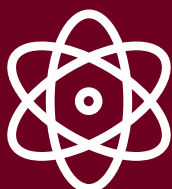
Secure Planet

Sustaining our interdependent world and exploring our place in the universe

THEMES

- Nature and the environment
- Exploring planet earth and beyond

5



Innovative Technologies

Advancing our interconnected world with frontier technologies, systems, designs and creative practice

THEMES

- Future science and engineering technologies
- Data science and artificial intelligence

Research targets 2035

Macquarie's 2035 research targets strike a balance between ambitious and achievable and span quantitative and qualitative assessment. They allow measures of performance that can be benchmarked within and across disciplines and peers while ensuring that quality remains paramount as we pursue research excellence with world-changing impact.

HERDC RESEARCH INCOME

	TARGET
INDICATOR	2035
HERDC research income	\$180 million

GRADUATE RESEARCH COMPLETIONS

	TARGET
INDICATOR	2035
Graduate research completions	680

RESEARCH PUBLICATIONS

	TARGET
INDICATOR	2035
Research publications	5000



RESEARCH QUALITY

Macquarie will achieve results that place its research at or above world standard, and our results will improve with each successive assessment.



BREAKTHROUGHS AND INNOVATIONS

Macquarie will achieve at least five research breakthroughs recognised nationally or globally for their contribution to knowledge.



BREAKTHROUGHS AND INNOVATIONS

Macquarie will achieve at least five major impacts of national or global significance (eg patents, products, services, legislative or policy changes and creative works).



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