SUSTAINABLE DEVELOPMENT GOALS

UNIVERSITY OF NEWCASTLE

PROGRESS REPORT 2025

UNIVERSITY OF NEWCASTLE

50 YEARS OF LOOKING AHEAD

ACKNOWLEDGMENT OF COUNTRY

The University of Newcastle acknowledges the traditional custodians of the lands within our footprint areas: Awabakal Nation, Darkinjung Nation, Biripai Nation, Worimi Nation, Wonnarua Nation and Eora Nation. We also pay respect to the wisdom of our Elders past and present.

ABOUT THE REPORT

FEATURED STATISTICS AND FACTS HAVE BEEN DRAWN FROM THE FOLLOWING SOURCES:

- Times Higher Education Impact Rankings 2025
- QS World University Rankings 2025
- The University of Newcastle Data Warehouse
- 2025 THE Impact submission
- Elsevier
- Performance and Completions Power BI
- Infrastructure and Facilities Services for metrics on Waste Diversion, Energy & Water usage and Composting
- Strategy, Planning and Performance who collected Student, Staff and Expenditure data
- Research Performance, Excellence and Impact (RPEI) from Office of Pro Vice Chancellor Research, for identifying relevant articles and bibliometric data

REPORT PREPARED BY

CIFAL Newcastle, with the support of Future Students (Academic Division) and Communications and Engagement (Equity and Engagement Division).

sdgs@newcastle.edu.au

This document is printed on Sovereign. Sovereign is produced with a carbon neutral manufacturing process and is FSC® certified. The paper production and printing process were carried out under ISO 14001 certified systems.

2026 1027 SDG Report 2025

CONTENTS

As Chancellor, I am proud to see the University of Newcastle continue to strengthen its leadership in sustainability.

This year, we were ranked second in the world for Climate Action in the Times Higher Education Impact Rankings—an outstanding achievement that reflects our deep commitment to addressing global challenges.

We also placed in the global top 100 across seven additional SDGs, including 9th for Good Health and Wellbeing and 35th for Clean Water and Sanitation. These results highlight the dedication of our staff, students, researchers, and partners who work every day to create positive, lasting change. The University remains focused on advancing impactful, collaborative, and community-centred sustainability initiatives. Together, we are building a stronger, more resilient future for our regions and the world.

The Hon Patricia Forsythe AM
Chancellor

As I reflect on this year's Sustainable Development Goals Report, I am proud of how our university has strengthened its commitment to the Sustainable Development Goals (SDGs) through innovative teaching, impactful research, and meaningful partnerships.

Working in partnership with industry, government and community, we continue to generate high-impact initiatives, to support our region's transition to a net zero economy. Our Future Industries Facility, announced earlier this year, will provide a hub for training and innovation, while our Trailblazer for Recycling and Clean Energy program, now entering its third year, is fast-tracking the commercialisation of recycling and clean energy technologies by bringing industry and science closer together.

CIFAL Newcastle is a partnership between the United Nations Institute for Training and Research (UNITAR) and our University and is the only CIFAL training centre in Australia. It plays an important role in advancing our SDGs. This year, we expanded our suite of CIFAL-certified programs to equip learners across disciplines with the skills to tackle global challenges. These programs include sustainable built-environment design, environmental science, clean energy infrastructure, cybersecurity, disaster resilience, cultural capability, and sustainable tourism. We also launched our newest e-course, Enough for Everyone, Forever, which enhances access to sustainability education.

We are deepening our engagement with our local and global regions through research and training partnerships. The City of Newcastle Climate Champions UNITAR-accredited program has provided vital training for local government and community members. This training certified by CIFAL Newcastle provides participants with internationally recognised accreditation to lead climate action in their communities. In addition, our international initiatives such as the Graduate Certificate in Nutrition program for Papua New Guinean health professionals have furthered our commitment to global collaboration, health and wellbeing.

In 2025, our leadership in climate action was recognised globally, with the University ranking second in the world for Climate Action in the Times Higher Education Impact Rankings. This achievement reflects the collective efforts of our staff, students, and partners to embed sustainability across all aspects of our university.

As we look to the future, the SDGs remain a guiding framework for our work, shaping decisions and strengthening our commitment to a more just and sustainable world.

Professor Alex Zelinsky AO
Vice-Chancellor and President

Sustainability is the ultimate ‘us’ problem; no one person, gadget or discipline can address it alone. This year’s University of Newcastle Sustainable Development Goals report shows the ways in which we have taken this to heart, as a university and as a community. We remain steadfast in our belief that a sustainable future is one we will build together, and the report that follows shows the myriad of ways we are making tangible progress in areas of critical significance locally, regionally and internationally.

This year the University of Newcastle and CIFAL Newcastle further strengthened our collective commitment to the UN’s 2030 Agenda across all 17 of the goals. At CIFAL this has seen us participate in the inaugural cohort of the LEAP-FAST UNITAR and UNESCO joint initiative to refocus education on sustainability competencies. This program drew on work conducted at the UN Thought Leadership Summit we attended in 2024, and highlights our ongoing commitment to work at both global and local levels to ensure sustainability is recognised as a core driver for everything we teach, research and engage on.

Additional CIFAL Newcastle highlights for this year have been many and varied as we continue to develop new partnerships and involve new audiences to build capacity to support and enable sustainable development. Our courses and outreach activities have engaged more than 1,900 participants and we have worked with the City of Newcastle, Newcastle Business School, CIFAL Philippines, CIFAL Bangkok, CIFAL Singapore and the UN office of Disaster Risk Reduction.

We look forward to building on these foundations in the years to come.

Dr Brodie Beales
Executive Director CIFAL Newcastle

CIFAL NEWCASTLE

CIFAL Newcastle, a partnership between UNITAR (United Nations Institute for Training and Research) and the University of Newcastle, is the first and only CIFAL training centre in Australia. This collaboration underscores a shared commitment to fostering global leadership and sustainable development through education, training, and capacity building.

Our mission is to empower communities, organisations, and individuals to contribute to the United Nations 2030 Agenda and the Sustainable Development Goals (SDGs). Through comprehensive training programs, we provide practical skills and knowledge to government officials, private sector professionals, and civil society. By sharing best practices, we enable our participants to tackle development challenges effectively. Our offerings include short courses, postgraduate programs, and self-paced micro-learning opportunities, all certified by CIFAL Newcastle and UNITAR. We cover topics like the SDGs, global citizenship, and sustainable business practices. For more information on courses and to find out more about micro-learning self-paced courses, scan the QR code below.

In 2025, CIFAL Newcastle engaged a wide range of participants through capacity-building, research collaboration, and knowledge-sharing initiatives focused on sustainability, disaster resilience, equity, and inclusive development. A total of 1,949 beneficiaries participated across 46 learning, non-learning, and knowledge service activities, held in Australia, the Pacific, and internationally. Approximately 55% of activities were learning programs, 40% non-learning engagements, and 5% knowledge services, collectively advancing competencies in sustainability leadership, governance, and evidence-based decision-making. Programs targeted participants from diverse backgrounds, including university students, government officials, researchers, and civil society leaders, across Newcastle, Callaghan, Ourimbah, Sydney, Singapore, the Solomon Islands, the Papua New Guinean Highlands, and Saudi Arabia.

As part of the CIFAL Global Network, which (as of 2025) consists of 32 International Training Centres worldwide, CIFAL Newcastle is connected to a robust platform for sharing knowledge and expertise. Our local region network partners include CIFAL Honolulu, CIFAL Singapore, CIFAL Philippines, CIFAL Japan, and CIFAL Jeju.

Discover how partnering with CIFAL Newcastle can enhance your sustainability initiatives and explore our certified courses. For more information, reach out to us at UNITAR-CIFAL@newcastle.edu.au or scan the QR code to learn more.

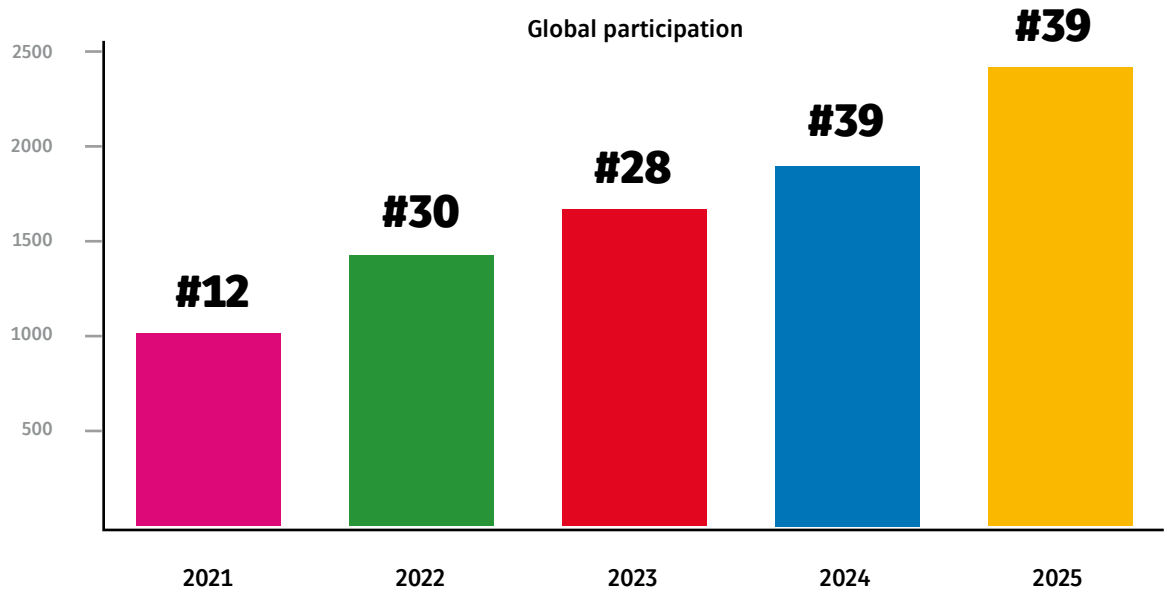
Together, we are building a sustainable future.

OUR GOALS

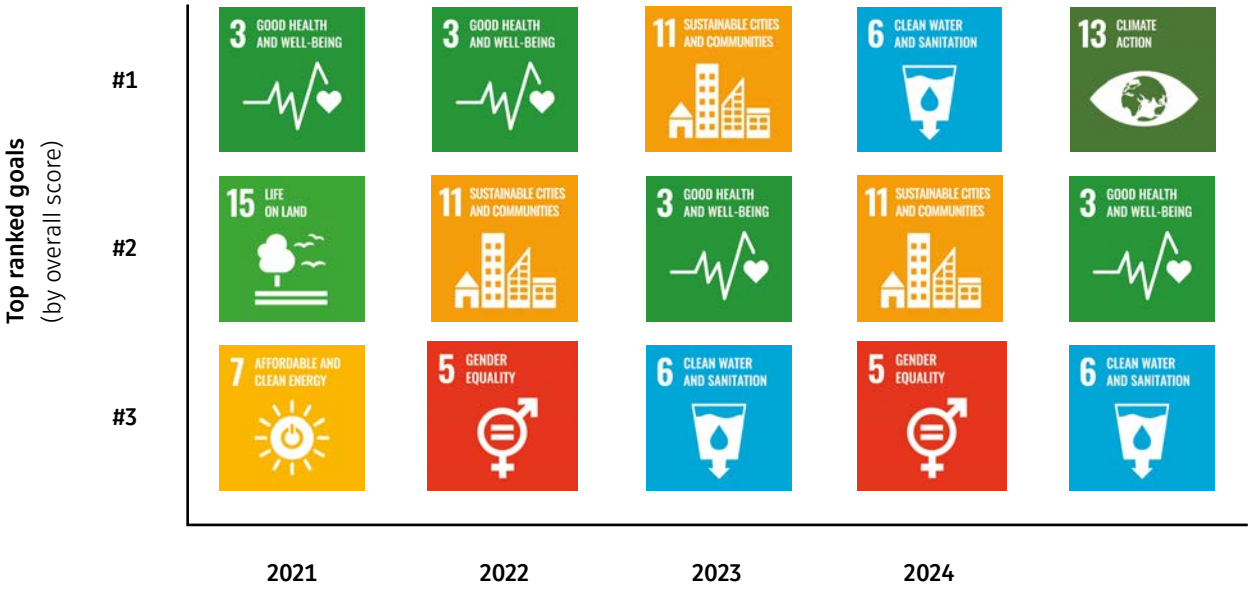
The University of Newcastle is continuing to align our strategic priorities to the United Nations Sustainable Development Goals (SDGs). Our University's values of Excellence, Equity, Engagement and Sustainability reflect these SDGs and set the standards that we expect, encourage, and nurture in our staff and students.

5-year review

OUR OVERALL THE IMPACT RANKING PERFORMANCE



OUR TOP THREE PERFORMING INDIVIDUAL SDGS



2025 at a glance

In 2025, CIFAL Newcastle continued to strengthen the economic and environmental sustainability of its operations, programs, education, research, and development activities, reinforcing its commitment to advancing the UN Sustainable Development Goals at the local and regional level.

A key initiative aligned with this commitment was The University of Newcastle's Grand Challenge, an annual program designed to foster multidisciplinary collaboration and innovation in addressing complex, real-world challenges. The initiative encourages teams from across disciplines to develop practical, scalable solutions, with up to $30,000 in funding available to support the most compelling proposals.

In 2025, the Grand Challenge addressed an issue of both local and global importance: achieving Net Zero, with a targeted focus on Scope 3 emissions. This focus closely aligns with CIFAL Newcastle's mission to support sustainable governance, climate action, and responsible supply chains.

TOP 50 GLOBALLY

13 CLIMATE ACTION	**Ranked #2**
3 GOOD HEALTH AND WELL-BEING	**Ranked #9**
6 CLEAN WATER AND SANITATION	**Ranked #35**
17 PARTNERSHIPS FOR THE GOALS	**Ranked #47**

TOP 10 IN AUSTRALIA

1 NO POVERTY	**Ranked #4**
2 ZERO HUNGER	**Ranked #7**
3 GOOD HEALTH AND WELL-BEING	**Ranked #2**
6 CLEAN WATER AND SANITATION	**Ranked #8**
7 AFFORDABLE AND CLEAN ENERGY	**Ranked #10**
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	**Ranked #4**
11 SUSTAINABLE CITIES AND COMMUNITIES	**Ranked #8**
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	**Ranked #8**
13 CLIMATE ACTION	**Ranked #2**
14 LIFE BELOW WATER	**Ranked #10**
17 PARTNERSHIPS FOR THE GOALS	**Ranked #7**

NO POVERTY

TEACHING AND LEARNING

UNI STEPS CONTINUES TO DIRECT YOUNG PEOPLE TO TERTIARY EDUCATION

Education is a powerful tool for reducing inequality and ending poverty. Since 2022, UNI STEPS has reached more than 1,000 high school students each year, encouraging them to stay in school and consider tertiary study through direct community outreach.

Created through a collaboration between the Wollotuka Institute, the University's three colleges, the Marketing and Communications Future Students team, and the Pathways and Academic Learning Support Centre, UNI STEPS supports students from Years 7 to 12 in local, rural, and remote schools. Through on-campus workshops and online programs, the initiative removes barriers caused by distance or background and helps students access learning wherever they live.

UNI STEPS also connects students with industry professionals and works closely with communities to support young people as they study. For Years 11 and 12, the program provides guidance on pathways such as VET or Open Foundation. Coordinator Selina Darney notes that university is not the only option promoted; students are encouraged to explore their own interests and build confidence. This program equips them with the skills to succeed at the University of Newcastle and elsewhere.

OPEN FOUNDATION, THE FREE PATHWAY INTO HIGHER EDUCATION

Not everybody's journey to university is planned from the outset, and at the University of Newcastle, we recognise that reality with our groundbreaking university entry pathways program: Open Foundation. Open Foundation is free, structured and tailor-made to bring participants up to university entry level upon successful completion – with admission to many degree programs ensured upon success. It's been changing lives and lifting communities in Newcastle, the Hunter and beyond for over 50 years. The flexible nature of Open Foundation allows participants to work on their study program as and when suits them, and the results speak for themselves. Participants graduate in everything from education to medicine, taking advantage of improved employment outcomes and remuneration available upon tertiary degree graduation. Improving access to higher education and supporting students to succeed is just one practical step we are taking to improve lives and end poverty for all. To learn more about Open Foundation – or the Pathways initiative – see: newcastle.edu.au/study/pathways

COMMUNITY OUTREACH

BOOSTING FINANCIAL LITERACY IN THE HUNTER TO REDUCE FUTURE INEQUALITY

Research from the University of Newcastle's Institute for Regional Futures (IRF) and Newcastle Greater Mutual Group (NGM) shows that Newcastle residents, especially young adults, are developing stronger financial confidence than those in Sydney. The study found that nearly 40% of Sydneysiders lived only for today financially, compared with 26% of Novocastrians. This improvement aligns with the creation of the Greater Bank Finance Academy, a joint program by NGM and the IRF that builds financial literacy in young people.

The academy offers budgeting courses and long-term financial independence workshops tailored to high school students across the Hunter and Central Coast. Delivered by University of Newcastle student ambassadors and Greater Bank staff, the program supports Year 9 and 10 students through both online and in-person classes.

Since 2019, more than 2,000 students have taken part, with 30% coming from the lowest 10% of socioeconomic areas in Australia. The Greater Bank Finance Academy ensures young people have the knowledge and confidence to build long-term financial security.

The Greater Bank Finance Lab is located on Level 1 of Newcastle City campus (NUspace).

124

Scholarly outputs in 2025

4th in Australia[1]

OPERATIONS

LAPTOPS FOR LESS PROVIDES STUDENTS WITH NEW OPPORTUNITIES

Access to reliable technology is essential for students to engage in online learning. To support this, the University of Newcastle Students' Association (UNSA) has launched Laptops for Less, a program that sells refurbished computers to students at reduced prices. Many devices are sourced from WV Technologies, a First Nations software refurbishing company, and were previously used by government and defence organisations. By redirecting this equipment instead of sending it to waste, UNSA supports both environmental sustainability and equitable access to education.

During its pilot, UNSA sold 10 refurbished computers and used this trial to plan future program expansion. UNSA also created how-to guides for students with limited digital experience, ensuring meaningful participation in coursework.

Alongside standard laptops, the program offers higher-capacity models suitable for architecture and engineering students, which normally retail for hundreds of dollars. UNSA sells these at lower cost, making only a small profit to cover acquisition. This approach ensures all students can access the technology required for their studies, reducing financial barriers and strengthening equitable online participation.

Laptops for Less can be a life-changing initiative for those in need.

RESEARCH AND INNOVATION

IMPROVING CUSTOMER EQUITY IN COMPLAINTS MANAGEMENT

Lower socioeconomic groups continue to face higher rates of financial harm and commercial exploitation. To address this, Dr Christine Armstrong from the University of Newcastle's Business School is leading national research into how customer complaints shape equity and consumer access. Her work focuses on reducing vulnerable groups' exposure to exploitative practices, strengthening consumer confidence, and informing advocacy policy to prevent scams and financial loss.

Working alongside Dr Alicia Kulczynski, Dr Margurite Hook, Dr Moji Barari, and Dr Bin Li, Dr Armstrong is developing an artificial intelligence model that proactively edits and improves customer complaints before they are submitted. The tool supports EALD consumers by clarifying and legitimising concerns about product quality or price, helping translate genuine complaints into practical policy outcomes. By reframing complaint processes, the program empowers vulnerable groups to spend with confidence, protected by more accessible and accountable mechanisms.

The model also enhances how corporations receive and respond to complaints, ensuring vulnerable consumers are heard and taken seriously. The insights generated will guide major industry partners in improving complaint-handling practices and strengthening equity across the commercial landscape.

The University of Newcastle is proud to support research that advances fairness, protection, and inclusive participation in Australia's commercial systems.

Dr Christine Armstrong, University of Newcastle.

ZERO HUNGER

RESEARCH AND INNOVATION

EXPANDING ACCESS TO LIFE-SAVING NUTRITION ADVICE

The University of Newcastle and the nib foundation have partnered to provide an open-source nutrition program for 18–24-year-olds. Established in 2018 with an $893,000 donation, No Money No Time combines research on chronic disease and diabetes with a user-friendly app and website to deliver practical, accessible advice.

The program offers personalised, easy-to-prepare meal plans, recipes, podcasts, and resources in multiple languages. Work Integrated Placement students contribute to its development, ensuring relevance for young people.

In partnership with the Diabetes Alliance Program, No Money No Time has reached over one million users. Led by Professor Clare Collins, it teaches budgeting and meal planning to support healthier eating and reduce reliance on fast or processed foods.

FOOD PRODUCT DEVELOPMENT EXPO

Each year, final-year Food Science and Human Nutrition students showcase their innovative creations at the Food Product Development Expo. Working in teams, students design a new food product, develop packaging and nutritional profiles, and create marketing and business strategies aligned with a project brief. This event marks the culmination of their degree, offering a hands-on experience unique to Food Science programs. For the past three years, the academic team has partnered with Sanitarium Health Foods, who provide financial support, technical expertise, and select their top product.

In 2025, three standout products were launched: Curry Buddy (instant chickpea and lentil curry), Nobol (high-protein frozen yogurt bar), and Savoury Squares (toaster waffles with hidden vegetables). Over 130 attendees, including industry partners, voted for the People's Choice Award—won by Savoury Squares. Congratulations to Freya Snowden, Will Spinks, and Jayson Lawrence Te, presented their certificates by Head of School, Professor Clovia Holdstein.

OPERATIONS

ECOLOGICAL ANALYSIS AND BIODIVERSITY PROPELLED BY THE DON MCNAIR HERBARIUM

The late Dr Don McNair (1920–2014) dedicated seventy years to collecting 14,500 plant specimens, generously gifting them to the University of Newcastle. His collection forms the foundation of The Don McNair Herbarium, an open-access resource supporting research on the Hunter's changing biodiversity and human–environment interactions. Launched in 2023, the Herbarium provides students and researchers with critical information to inform programs in agriculture, food production, and sustainable environmental management.

Researchers have digitally catalogued Dr McNair's specimens, and the University's School of Environment and Life Sciences is 3D-modelling the collection for online access. These models offer an internationally recognised tool for teaching and research, illustrating the impact of agriculture and urban development on natural landscapes. By making ecological data widely accessible, the Herbarium contributes to evidence-based environmental policies and the long-term preservation of regional biodiversity.

Don McNair sits at a desk, looking at specimens.

> " This collection is critical for understanding how plants adapt to their environment and for training the next generation of scientists."
>
> **– Dr Ben Long, Herbarium Director**

7th in Australia[1]

TEACHING AND LEARNING

EXTRACTION OF FIBRE FROM PLANT-BASED FOOD WASTE: IMPROVING NUTRITIONAL QUALITY

Researchers from the Centre for Sustainable Development at Newcastle Australia Institute of Higher Education (Singapore), in collaboration with the University of Newcastle's School of Environment and Life Sciences, and Republic Polytechnic's School of Applied Sciences, have developed a method to extract fibre from plant-based food waste. High-volume waste, such as okara (soy pulp), is processed into a freeze-dried powdered prebiotic, which can be incorporated into supplementary foods after taste-testing.

This innovation supports Singapore's "30 by 30" goal to sustainably source 30% of nutritional needs by 2030. Positioned within a circular economy framework, the project reduces food waste while producing a scalable, sustainable dietary supplement. By turning food scraps into nutritious, market-ready products, the research advances both environmental sustainability and nutritional quality, demonstrating the potential of food waste as a valuable resource.

GRADUATE CERTIFICATES IN NUTRITION, PAPUA NEW GUINEA

In February 2025, the University of Newcastle welcomed a cohort of Papua New Guinean health professionals from each of the 22 provinces for the Australian Government-funded Graduate Certificate of Nutrition course: Sociology of Food and Nutrition: Pacific Perspectives, led by Professor Lesley Macdonald-Wicks.

This innovative, immersive program dived deep into the social, cultural, economic, and political dynamics of food systems and nutritional health in the Pacific region, equipping participants with critical skills to address the realities faced by Papua New Guinean communities. The 12-week program provided insights into the Australian nutrition environment and included a 1-week immersion in Indigenous Health in partnership with the Department of Rural Health, Tamworth.

The initial program, held in Newcastle February and March of 2025, was a significant success. A second iteration of the same initiative was offered to a new cohort of health professionals from Papua New Guinea in late 2025, with the new group of graduates to receive their CIFAL certificates upon successful program completion in January 2026 at a ceremony in Papua New Guinea.

COMMUNITY OUTREACH

UNIVERSITY OF NEWCASTLE STUDENTS' ASSOCIATION TACKLES FOOD INSECURITY

As cost-of-living pressures rise, the University of Newcastle Students' Association (UNSA) has strengthened two key programs to address student food insecurity.

Grocery Hub

UNSA operates stocked pantries at the Ourimbah, NuSpace, and Callaghan campuses. Students can book appointments to access groceries, with the program focused not only on reducing hunger but also on supporting emotional wellbeing and financial resilience. After six yearly visits, UNSA checks in via email to offer support and financial counselling; after twelve visits, students are approached in person to ensure they receive the assistance they need. No student is turned away, and over 220 students were supported in early 2025.

Free Food Friday

Each week, UNSA receives imperfect produce from OzHarvest – around sixty kilograms of bread, fruit, vegetables, and meat – which staff sort into packages. Registered students are randomly selected to collect the free produce on Friday mornings. The program has fostered a strong sense of community, with 110 students accessing the pantry weekly and 1,573 students supported in 2025.

Free Food Friday also provides weekly free lunches at Callaghan and Ourimbah, and regular sessions across Gosford, NuSpace, Sydney, and HMRI, offering both nourishment and connection for more than 1,000 students.

GOOD HEALTH AND WELL-BEING

RESEARCH AND INNOVATION

$20.7 MILLION IN FUNDING ACCELERATES BREAKTHROUGH FOR CHILDHOOD BRAIN CANCER

University of Newcastle Professor Matt Dun and his team have received $20.7 million in combined Australian Government and philanthropic funding, including $18.7 million through the Frontier Health and Medical Research initiative and a $2 million NHMRC Medical Research Future Fund grant. The funding supports the development of life-saving treatments for high-grade gliomas (HGG) and diffuse midline glioma (DMG), the most lethal childhood brain cancers.

Over the past seven years, Professor Dun's team has identified key genetic vulnerabilities in these tumours and developed novel, brain-penetrant therapies. Their research includes the DMG-ADvanced mAchine-learning Precision Treatment Strategy (ADAPTS), which uses tumour, blood, and cerebrospinal fluid profiling to personalise sequential and adaptive treatments. By combining cutting-edge technologies in biomedical science, AI, and immunology with early-stage clinical trials, the team aims to extend survival and deliver meaningful, life-sustaining outcomes for children and young adults. This project exemplifies collaborative "team science," offering renewed hope to patients, families, and the broader community facing these devastating cancers.

Professor Dun was recognised with the Emerging Leadership Award at the Australian Financial Review Higher Education Awards. This recognises Professor Dun's transformational impact on childhood cancer research in Australia.

Professor Matt Dun

FUNDING SUCCESS

$1.27m ARC Linkage funding to improve animal health and grow Australia's biomanufacturing capability

Three University of Newcastle researchers have secured over $1.27 million in Australian Research Council (ARC) Linkage Project funding, supporting collaborations across government, industry, research, and education to deliver practical health solutions.

Professor Adam McCluskey (University of Newcastle) and Associate Professor Danny Wilson (University of Adelaide) received $556,235 to combat Eimeria in commercial chicken flocks and Toxoplasma gondii, a parasite affecting both animals and immunocompromised humans. Their work with NEOCULI aims to develop treatments capable of eradicating these diseases.

Laureate Professor Brett Neilan and Dr Leanne Pearson (University of Newcastle) were awarded $718,476 to produce painkilling, metal-binding, and UV-blocking compounds via a carbon-neutral process using blue-green algae. In partnership with Diagnostic Technology Pty Ltd, this research advances industrial-scale biochemical manufacturing, with applications in health care, food, and water security.

These projects demonstrate the University of Newcastle's commitment to innovative research that improves animal and human health, strengthens healthcare solutions, and positions Australia as a leader in sustainable biomanufacturing.

9th in the world

COMMUNITY OUTREACH

PROMOTING INCLUSIVE SPORT PARTICIPATION – NATIONAL RESEARCH UNIT ESTABLISHED

The University of Newcastle has joined the Play Well Research Unit, a three-year initiative led by the Australian Sport Commission in partnership with the University of Sydney and Deakin University. Supported by $1.6 million from the Australian Government and $2.7 million from the participating universities, the unit will develop a coordinated framework to analyse barriers and benefits of sports participation.

Associate Professor Narelle Eather leads the University of Newcastle's contribution, focusing on inclusive and lifelong participation, including disability access. The research aims to address longstanding gaps in sport delivery and accessibility, with findings informing future sports and educational policy. Initial results are expected in 2026, providing evidence-based strategies to increase participation and promote the health and wellbeing of communities across Australia.

$1.6m
From the Australian Government

$2.7m
From participating universities

Play Well Research Unit

OPERATIONS

STRENGTHENING HEALTH OUTCOMES IN PAPUA NEW GUINEA

Since 2013, Field Epidemiology in Action (FEiA), a collaboration between the University of Newcastle and Hunter New England Health, has improved public health and disease prevention in Papua New Guinea. As part of the Partnerships for a Healthy Region, FEiA received $7.5 million in 2024 and an additional $500,000 in 2025 to expand its delivery of health services and epidemiology training.

Led by James Flint, the FEiA team of epidemiologists, physicians, researchers, and advisors has trained 24 frontline mentors in Papua New Guinea, enhancing emergency coordination and disease surveillance. The program strengthens regional resilience and contributes to improved health outcomes for communities across the Pacific. FEiA demonstrates clearly the University of Newcastle's commitment to supporting international public health initiatives and fostering sustainable, community-focused improvements in wellbeing.

TEACHING AND LEARNING

INNOVATIVE, WELLBEING-CENTRED SOCIAL WORK EDUCATION

The University of Newcastle has launched a flexible, postgraduate Master of Social Work (Qualifying) program designed to support students' wellbeing while balancing study, work, and care responsibilities. The program allows students without a psychology or sociology background to enter via a bridging qualification starting in 2026, completing a Graduate Certificate in Human and Social Services before progressing to the Master's degree.

Through a "night school" model and flexible industry placements, students gain practical experience while accommodating personal commitments. The industry-led program connects students with social work professionals, ensuring education translates directly into professional practice.

By prioritising flexibility and student wellbeing, the program equips graduates to promote fair access to health and social resources. This innovative approach prepares social work professionals who are resilient, skilled, and ready to respond to evolving community needs.

QUALITY EDUCATION

RESEARCH AND INNOVATION

SCIENCE AND ENGINEERING CHALLENGE BREAKS DOWN STEM BARRIERS

Celebrating its 25th year, the University of Newcastle's Science and Engineering Challenge was awarded a Eureka Prize by the Australian Museum for promoting inclusive STEM education. Since 2000, the program has engaged over 480,000 regional, rural, and remote students; teaching physics, maths, technology, and engineering. Half of participants are female, 5% identify as Aboriginal or Torres Strait Islander, and 5% come from non-English-speaking households. The Challenge fosters curiosity, inspires careers in STEM, and helps remove barriers for students from diverse backgrounds.

The University of Newcastle's Science and Engineering Challenge Team.

CIFAL CERTIFICATIONS FOR QUALITY EDUCATION

Throughout 2025, CIFAL Newcastle engaged a wide range of participants through capacity-building, research collaboration, and knowledge-sharing initiatives focused on sustainability, disaster resilience, equity, and inclusive development. A total of 1,949 beneficiaries participated across 46 learning, non-learning, and knowledge service activities, held in Australia, the Pacific, and internationally.

Approximately 55% of activities were learning programs, 40% non-learning engagements, and 5% knowledge services, collectively advancing competencies in sustainability leadership, governance, and evidence-based decision-making. Programs targeted participants from diverse backgrounds, including university students, government officials, researchers, and civil society leaders, across Newcastle, Callaghan, Ourimbah, Sydney, Singapore, the Solomon Islands, the Papua New Guinean Highlands, and Saudi Arabia.

TEACHING AND LEARNING

COMMONWEALTH SUPPORTED PLACE INITIATIVE EMPOWERS INDIGENOUS POSTGRADUATE STUDENTS

Kieran Cubby, a proud Wiradjuri/Murrawarri man from Dubbo, is pursuing his dream of becoming an orthopaedic surgeon with the support of the University of Newcastle's Commonwealth Supported Places (CSP) postgraduate initiative for Indigenous students. The program provides Australian Government-subsidised financial support, ensuring equitable access to postgraduate study and helping students overcome financial barriers.

Kieran credits the CSP initiative, alongside the Yapug and Miroma Bunbilla programs, and Wollotuka Institute support, with enabling his medical studies and progression toward one of Australia's few Indigenous orthopaedic surgeons.

> " CSP has helped me carry out the studies I need to become a surgeon."
>
> **– Kieran Cubby.**

11th in Australia[1]

OPERATIONS

200,000 LIVES TRANSFORMED IN 60 YEARS OF IMPACT

In 2025, the University of Newcastle celebrated its 60th anniversary by reaching a milestone of 200,000 graduates. Over 1,300 students participated in nine ceremonies at Newcastle City Hall, marking six decades of life-changing education, opportunity, and regional impact.

Among the cohort, Bachelor of Aerospace Engineering graduate Aleria Dunlop represented the University's 200,000th alum. Growing up near Williamtown, Aleria combined her passion for aviation technology with hands-on industry experience, including an internship with BAE Systems. Her story reflects a legacy of multi-generational achievement, with her grandfather graduating from the University 59 years ago.

Vice-Chancellor Professor Alex Zelinsky AO highlighted that the milestone reflects the transformative power of education, from the University's first graduating class of 138 to a global community of over 37,000 students today. The celebrations emphasised the University's enduring connection to its regions and commitment to fostering inclusive, empowering education for generations to come.

Graduate Aleria and her grandfather, Philip.

COMMUNITY OUTREACH

CELEBRATING 50 YEARS OF OPEN FOUNDATION TRANSFORMING LIVES

For 50 years, Open Foundation has provided a pathway to higher education for people across the Hunter and Central Coast regions, helping students without direct entry qualifications develop skills, achieve goals, and realise their potential. The program has enabled tens of thousands of students to begin their university journey, embodying the University of Newcastle's commitment to equity and access.

Associate Professor Anna Bennett, Director of Pathways and Academic Learning Support, emphasises that Open Foundation supports not only education but also community engagement, ensuring students are equipped to thrive. Generous scholarships from donors and partners like Joblink Plus further expand access, supporting students from regional areas, Aboriginal and Torres Strait Islander communities, and those overcoming personal challenges.

The program's impact was celebrated through initiatives like the "50 Years, Fifty Stories" exhibition, which highlighted the achievements and resilience of past students. Open Foundation continues to open doors, empower individuals, and strengthen communities through inclusive education.

Students and collaborators from the 50 Years Fifty Stories exhibition at the University Gallery.

485

Scholarly outputs in 2025

GENDER EQUALITY

RESEARCH AND INNOVATION

ADVANCING EQUITY THROUGH PHYSICAL ACTIVITY RESEARCH

Australia's longest-running women's health survey, jointly delivered by the University of Newcastle and the University of Queensland since 1996, has now engaged more than 57,000 women aged 30 to 104. Its extensive data continues to guide state and national policy on women's health and wellbeing.

Professor Deb Loxton, Director of the study, highlights its ongoing role in addressing the diverse and intersectional health challenges faced by women across Australia. Laureate Professor Clare Collins links gendered expectations – such as women's responsibility for food preparation – to poorer diet quality, calling for renewed government support for healthier eating.

This year, several research publications on hospitalisation, diet, and exercise patterns among women have stemmed from the survey. The University of Newcastle is proud of its near 30-year contribution to this landmark initiative.

TEACHING AND LEARNING

I2N'S FLIP PROGRAM BOOSTS FEMALE ENTREPRENEURSHIP IN THE HUNTER

University of Newcastle alum Belinda Macdougall and her husband, Adam, have partnered with the University's Integrated Innovation Network (I2N) to launch FLiP – a new initiative supporting female entrepreneurs, innovators and leaders across Newcastle and the Central Coast. The program responds to a stark national challenge: in 2024, only 2% of venture capital funding in Australia went to female-led companies.

FLiP is delivered over nine weeks and combines online learning with practical, hands-on experience, making it accessible for women balancing work and care responsibilities. The program builds commercial confidence, helps validate business ideas, develops leadership skills and accelerates business creation through expert industry mentoring. Participants also benefit from specialised support, including patent guidance and practical, real-world advice to bring their innovations to life.

12th in Australia[1]

OPERATIONS

CSIRO WOMEN IN ENERGY SCHOLARSHIP EMPOWERING FUTURE ENGINEERS

The CSIRO Women in Energy Scholarship supports greater female participation in engineering, offering $40,000 for students at the University of Newcastle. Linked with the CSIRO's Newcastle Energy Centre, the scholarship provides opportunities for innovation, mentorship, and hands-on industry experience. Through this initiative, women in STEM are empowered to contribute to clean energy and technological advancement.

INDUSTRY LEADERS UNITE TO ADDRESS GENDER INEQUALITY IN THE WORKPLACE

In response to the Workplace Gender Equality Agency's 2023–24 report on Australia's gender pay gap, the University of Newcastle's HunterWiSE program convened industry leaders to examine the risks and remedies of gender inequality across Australian workplaces.

The discussion centred on the alarming finding that two-thirds of Australian organisations have a gender pay gap greater than 5%. Participants explored the complexities behind these disparities, highlighting persistent barriers to women's full workforce participation and a widespread sentiment that women remain undervalued across many sectors.

The University of Newcastle continues to prioritise pay equity, reducing its own gender pay gap from 9.9% in 2023 to 3.2% in 2025 – well below the national average disparity of 21.8%.

Guest speaker Alix Lasance (Hunter Water), event host Kate Ramsay (AnD Consulting), and HunterWiSE coordinator Leah Kiem.

COMMUNITY OUTREACH

AUSTRALIA'S LONGEST-RUNNING WOMEN'S HEALTH SURVEY

Dr Alyce Barnes, a post-doctoral researcher with the University of Newcastle and the National Centre of Implementation Science, has been recognised as a Lake Macquarie City Council Ambassador and named Lake Macquarie Sports Leader of the Year for her contributions to community health and gender equity.

Her research focuses on improving physical activity outcomes for women and girls, with her PhD highlighting the lifelong benefits of mother–daughter role-modelling and shared physical activity. Dr Barnes also co-facilitates the internationally recognised Daughters and Dads Active and Empowered (DADAE) program, which strengthens young girls' confidence, physical activity levels and sports skills.

Driven by a commitment to gender equality, Dr Barnes works to address barriers that limit girls' participation in sport, including restrictive uniform policies, outdated gender norms and a lack of visible role models. Her work underscores the importance of early engagement in physical activity as a pathway to healthier, more empowered communities.

Dr Barnes received the Lake Macquarie Sports Leader of the Year award and recognition as a Lake Macquarie City Council Ambassador.

> " Being nominated for these awards is a powerful recognition of my commitment to advocating for girls and women in physical activity and breaking down the barriers that limit their participation."
>
> **– Dr Barnes**

THE WOMEN'S RESEARCH ENGINEERS NETWORK

The Women's Research Engineers Network (WREN) empowers women who are early-career academics in engineering through career development, international collaboration, and role modelling. Run by culturally and linguistically diverse (CALD) staff and Higher Degree by Research (HDR) volunteers, WREN has grown into a global initiative with four regional subcommittees, 3,499 members, and more than 20 impactful events. Open to all, WREN fosters inclusion, supports diverse genders and identities, and advances the UN Sustainable Development Goals, driving cultural change across the University of Newcastle and reaching beyond.

CLEAN WATER AND SANITATION

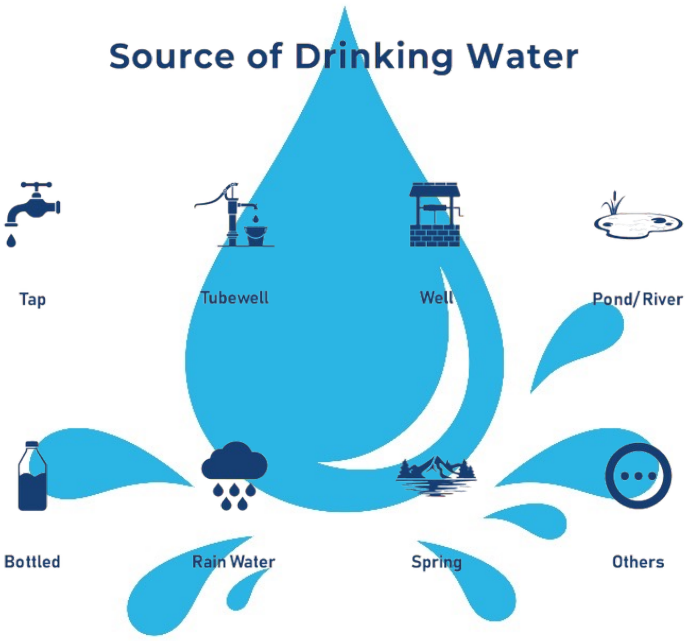
RESEARCH AND INNOVATION

RESEARCHERS UNDERTAKE GROUNDBREAKING ANALYSIS OF GROUNDWATER IN BANGLADESH

Dr Rafiquel Islam and Sazal Kumar from the University of Newcastle's School of Environmental and Life Sciences have led research analysing the impact of iron and arsenic in Bangladeshi tubewells, focusing on the health of school children. Their study found that deeper bores are essential to reduce the risk of arsenic-related illnesses.

The analysis revealed that 68% of water samples exceeded safe iron levels, and 48% exceeded arsenic limits set by the World Health Organization, with national standards also frequently breached. Contamination arises from rock erosion, sewage, and industrial waste, posing serious health risks including respiratory issues, digestive illnesses, anaemia, kidney stones, and prenatal complications.

The research highlights the need for region-specific strategies for safe tubewell construction and management, supporting Sustainable Development Goal 6 by ensuring equitable access to safe, clean drinking water for vulnerable communities in Bangladesh.



TEACHING AND LEARNING

AMMONIAC PRODUCES AMMONIA WITH LESS CARBON RELEASE

The Laureate Professor Behdad Moghtaderi and his team at the University of Newcastle's Centre for Innovative Energy Technologies have partnered with Element One to develop AMMONIAC, an innovative technology designed to significantly reduce emissions from ammonia production.

Ammonia – an essential component of agricultural fertiliser – is projected to see a 40% increase in demand by 2050. Yet traditional production methods account for 2% of global emissions worldwide, releasing over 450 million tonnes of carbon dioxide each year. AMMONIAC offers a more sustainable alternative by using a simplified process that "breathes in" hydrogen and, under shifting but ambient conditions, "breathes out" ammonia.

Not only does this method reduce production costs from roughly USD $800 to about USD $200, but it also generates pure, clean water as a by-product instead of carbon dioxide. Professor Moghtaderi anticipates that AMMONIAC could eventually be used directly by farmers, requiring only air and water, transforming the future of sustainable ammonia production.

(L-R) University of Newcastle Vice Chancellor Alex Zelinsky, Laureate Professor Behdad Moghtaderi, and Element One founder and Managing Director Phil Matthews

390

Scholarly outputs in 2025

35th in the world

OPERATIONS

SMARTER WATER USE HELPING THE UNIVERSITY SAVE WATER

Every Australian knows it is part of our national responsibility to save water, and to use the little we have wisely. In 2025, we achieved a 15% reduction in water use on campus (on our benchmark 2015 levels) through careful planning that included the installation of large-scale, on-site tanks and stormwater retention dams that prioritise the use of captured rainwater for irrigation. The systems are designed to automatically draw from stored rainwater, switching to potable water only when necessary. This dramatically reduces reliance on drinking water for outdoor use.

Currently, the University captures and stores approximately 2.7 million litres of water in rainwater tanks, much of which irrigates the playing fields.

The University is also rolling out Hunter Hydrawise smart irrigation controllers across sporting fields. These advanced systems offer live weather integration and leak detection, allowing us to monitor use and prevent waste.

By avoiding unnecessary watering, these smart irrigation systems are expected to save up to 50,000 litres of water*, contributing significantly to the University's conservation efforts.

These upgrades are part of a broader commitment to sustainable campus operations and delivering better environmental outcomes for the University and wider community.

15%

Total water reduction

Smart Water Usage at the University of Newcastle

COMMUNITY OUTREACH

RESTORING INDONESIA'S PEATLANDS TO PROTECT CLEAN WATER

Associate Professor Dr Charles Lee, from the Newcastle Australia Institute of Higher Education and the Centre for Sustainable Development in Singapore, is leading a pioneering initiative to restore parts of Indonesia's 15 million hectares of degraded peatlands. These ancient carbon-rich ecosystems naturally filter drinking water and reduce flood risk, yet widespread land clearing and fires across South-East Asia now contribute 6% of global annual emissions and heighten water and food insecurity for billions.

Charles Lee delivering a speech at the cocktail launch of the Centre for Sustainable Development (CSD).

Dr Lee's research demonstrates that Peatland restoration directly improves waterway health, water quality, and access to clean water. The team's method involves rewetting drained peatlands through a series of artificial dams, followed by revegetation to stabilise the landscape and revive ecosystem functions. Once restored, these landscapes can again support local livelihoods and long-term community stewardship.

A successful pilot in Sungai Tohor, Sumatra, has already shown promising results, with rewetted and replanted peatlands fostering the return of wildlife and the natural filtration of clean water. With ongoing monitoring and evaluation, Dr Lee believes this scalable model can be expanded across Indonesia, offering a transformative pathway for environmental recovery and water security.

*Every time a cycle is cancelled due to rain or wind in the forecast.

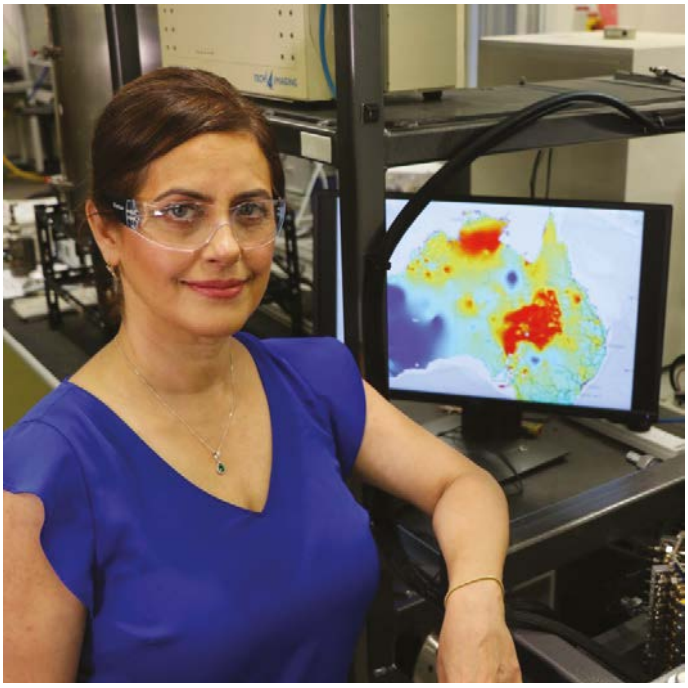
AFFORDABLE AND CLEAN ENERGY

RESEARCH AND INNOVATION

UNIVERSITY OF NEWCASTLE PARTNERS WITH GOOGLE TO ADVANCE CLEAN ENERGY IN AUSTRALIA

The University of Newcastle, in collaboration with Google and the Newcastle Institute for Energy and Resources (NIER), is pioneering geothermal energy development in Australia. As part of Google's $1 billion carbon-free by 2030 initiative, the project explores the feasibility, costs, and potential sites for geothermal energy production, a largely untapped clean energy source in Australia.

Led by Associate Professor Dr Elham Doroodchi, and supported by partners Solution Energy and Program Innerspace, the research aims to provide innovative, reliable, and sustainable energy solutions. Professor Alan Broadfoot of NIER emphasises that the partnership reflects the University's commitment to clean, affordable, and sustainable energy futures.



Associate Professor Elham Doroodchi is leading the project.

TEACHING AND LEARNING

NATIONAL TRACE SHOWCASE HIGHLIGHTS HUNTER CLEAN ENERGY INNOVATIONS

The University of Newcastle, in partnership with the University of New South Wales, showcased sustainable inventions from the Trailblazer for Recycling and Clean Energy (TRaCE) program to 150 government, business, and research representatives.

Federal MP Sharon Claydon unveiled the Modern Manufacturing Workshop and the Advanced Prototyping Facility at the University's Callaghan campus, designed to accelerate clean energy and circular economy technologies. These facilities aim to create jobs, reduce emissions, and support commercialisation of student- and industry-led innovations, cementing the University's legacy in advancing sustainable energy in the Hunter region.

(L-R) Director of NIER, Professor Alan Broadfoot; Federal Member for Newcastle Ms Sharon Claydon MP; Deputy Vice Chancellor Research and Enterprise at the UNSW Professor Bronwyn Fox; University of Newcastle Vice-Chancellor Professor Alex Zelinsky AO.

544

Scholarly outputs in 2025

10th in Australia[1]

OPERATIONS

FUTURE INDUSTRIES FACILITY TO DRIVE CLEAN ENERGY INNOVATION

Prime Minister Anthony Albanese announced a $20.7 million investment in the University of Newcastle's Future Industries Facility, creating a hub for clean energy innovation.

Bringing together businesses, students, researchers, and the community, the facility is expected to generate up to 140 jobs and $160 million in annual investment.

Vice Chancellor Alex Zelinsky highlighted the Facility's role in advancing innovation, decarbonised energy, and scalable skills. With 1,250 and 1,500 square metre spaces, up to 16 industry partners can simultaneously test and demonstrate clean energy solutions, turning theoretical science into practical impact.

COMMUNITY OUTREACH

CITY OF NEWCASTLE'S EMPOWERING CLIMATE CHAMPIONS PROGRAM

In 2025, CIFAL Newcastle collaborated with the City of Newcastle to support the Empowering Climate Champions (ECC) program, a community-led training initiative advancing affordable and clean energy adoption across the Newcastle Local Government Area. The program aligns with the City of Newcastle's Climate Action Plan 2021–2025 and its commitment to achieving net zero emissions by 2040.

Delivered as part of the Empowering Newcastle community climate action framework, the ECC program built local capacity by equipping residents with practical knowledge and skills in renewable energy, electrification, energy efficiency, solar and battery systems, and behaviour change. A strong focus on energy equity ensured participants could design inclusive projects that address barriers to accessing clean, affordable energy.

CIFAL Newcastle's involvement strengthened alignment with global sustainability frameworks and supported leadership development, while collaboration with local government enabled place-based delivery and policy integration. The program fostered a network of Climate Champions delivering community-led emissions reduction projects that contribute directly to SDG 7 outcomes at the local level.

COMMUNITY OUTREACH

NAIHE SINGAPORE CLEAN ENERGY SYMPOSIUM UNITES ASIA-PACIFIC INNOVATORS

In September 2025, the Newcastle Australia Institute of Higher Education (NAIHE) hosted the Clean Energy Symposium, bringing together academics and researchers to explore low-carbon energy solutions. The event included the Joint Energy Symposium, co-hosted with the Newcastle Institute for Energy and Resources (NIER), TRaCE, and Singapore's A*Star, where researchers exchanged ideas on cutting-edge clean energy developments.

It also featured the Clean Energy Symposium, part of the University's 60th anniversary, in partnership with Singapore's Centre for Hydrogen University, with expert panels discussing clean fuels in hard-to-abate sectors and integrating renewable energy at scale. The symposium underscores the University of Newcastle's commitment to renewable energy innovation and shaping a sustainable Asia-Pacific energy future.

(L-R) Dr Jessica Allen [moderator], Prof Behdad Moghtaderi, University of Newcastle's Chancellor Patricia Forsythe, Dr Haoxin Xu, A/Prof Salim Shaik, Prof Zhao

DECENT WORK AND ECONOMIC GROWTH

RESEARCH AND INNOVATION

LYNGO AI: TRANSFORMING PATIENT COMMUNICATION

From repairing iPhones at 16 to co-founding Lyngo AI, University of Newcastle alumnus Cameron Moore is reshaping healthcare communication with a virtual AI receptionist.

Unanswered calls are a major issue in healthcare, with more than 50% going unanswered. Lyngo AI solves this by offering 24/7 phone support that integrates directly with Practice Management Systems. Lyngo AI can answer general questions, create patient records, book new appointments, and reschedule or cancel bookings in real time all while following clinic policies. By providing reliable, round-the-clock communication, Lyngo AI is helping practices strengthen patient trust, reduce missed opportunities, and ensure more seamless access to care. Developed through the University's entrepreneurial and innovation programs, Lyngo AI showcases how Newcastle graduates like Cameron Moore are driving economic growth through digital innovation.

Lyngo AI's mission is to become the world's leading AI receptionist for healthcare.

Lyngo. (2025) Photo of Tanmay Patel (left), Co-Founder & CEO, and Cameron Moore (right), Co-Founder & CEO/CTO.

TEACHING AND LEARNING

FILLING THE GAP – UNIVERSITY'S VISION FOR DENTAL AND ORAL HEALTH ON THE COAST

To reduce waiting times and increase dental services for the region of the Central Coast, the University of Newcastle has shared its vision for a dentistry school and 50-chair public dental clinic and training facility. To meet these urgent demands for public dental services, the University of Newcastle's proposal for the Central Coast School of Dentistry and Central Coast Public Dental Clinic would offer a fast-tracked pathway for students studying Oral Health Therapy to become dentists.

The opportunity for up to 30 students supervised by fully accredited dentists could see upwards of 40,000 appointments per year for the public dental clinic in just the first year. This initiative represents a transformative step towards improving direct health outcomes, building workforce capability, and strengthening long-term community wellbeing. Importantly, there is a direct relationship between oral health and overall health, meaning the benefits of this vision will extend beyond dentistry to reduce broader health burdens across the Central Coast community.

13th in Australia[1]

OPERATIONS

UNIVERSITY RECEIVES KEYS TO THE CITY IN ITS 60TH YEAR

In a milestone celebration, the University of Newcastle has received the Keys to the City in recognition of six decades of transforming lives, driving innovation, and fostering economic growth across the Hunter region.

The honour was presented by Lord Mayor Dr Ross Kerridge during a graduation ceremony at Newcastle City Hall, acknowledging the University's deep and enduring partnership with the city it calls home. Chancellor, the Hon. Patricia Forsythe AM, accepted the Keys on behalf of the University, joined by Vice-Chancellor Professor Alex Zelinsky AO, Wollotuka Elders in Residence Aunty Cheryl Newton and Aunty Amanda Kelly, students, and alumni spanning the University's history.

Professor Zelinsky said the award symbolises the collective achievement of the entire University community and its role in Newcastle's progress. From educating 1,700 students in the 1960s to more than 37,000 today, the University has created pathways to education, jobs, and innovation that have reshaped the region. Lord Mayor Dr Kerridge said the University's influence is woven through the city, inspiring generations and transforming Newcastle into a hub of learning and aspiration. With the highest number of Aboriginal and Torres Strait Islander students at any Australian university, the institution continues to champion inclusive growth and opportunity.

In its 23rd year Hunter Innovation Festival 2025

COMMUNITY OUTREACH

BEYOND THE SPECTACLE: EVENTS AS STRATEGIC INVESTMENTS IN NEWCASTLE'S FUTURE

With the City of Newcastle ramping up its investment in events, there is a significant opportunity to ensure that these events and celebrations serve as more than fleeting spectacles. Instead, they can become powerful catalysts for lasting economic growth, social cohesion, and cultural impact.

Events in Newcastle are increasingly recognised as powerful tools for shaping the city's future, delivering long-term economic, social, and cultural benefits. More than entertainment, events have the potential to strengthen community pride, activate public spaces, and support local industries when planned strategically. The idea of event legacy ensuring benefits last well beyond the closing ceremony is central to this approach. Large-scale events bring global attention and economic influx, while community-led events sustain engagement, showcase cultural diversity, and contribute to Newcastle's unique identity.

To achieve this, events must be deliberately connected to Newcastle's broader vision for urban and cultural development. Like seed capital in business, they can spark growth when linked to industry networks, creative collaborations, and infrastructure that continues to serve communities long after the event ends. However, research shows legacies don't occur automatically they require coordinated, well-resourced efforts.

The University of Newcastle is helping drive this change through its Bachelor of Tourism, Hospitality and Events, developed with industry input to ensure graduates are prepared to deliver ethical, inclusive, and sustainable events. Working alongside local businesses and cultural organisations, the University equips future professionals to align with Newcastle's goal of becoming a premier event destination.

Ngarrama 2025

INDUSTRY, INNOVATION AND INFRASTRUCTURE

RESEARCH AND INNOVATION

$1.5M GRANT TO BOOST WORLD-LEADING MINERAL PROCESSING TECHNOLOGY

Laureate Professor Kevin Galvin was awarded an Australian Economic Accelerator (AEA) Innovation grant of more than $1.5m to advance home-grown technology that is critical to the mining and mineral processing industry globally. In collaboration with industry partner FLSmidth, this project will see the design and manufacture of a full-scale prototype for a slow-moving rake addition to Professor Galvin's patented, industry enhancing invention: the Reflux Classifier. This two-year project focusses on slow-moving rake enhancement and will improve both recovery rate and the concentration of recovered ores by minimising mixing and gently moving the denser solids across the lower section of the separator. Minister for Education Jason Clare MP has announced Professor Galvin's funding as part of the National AEA Innovate program. AEA grants are designed to enhance the ability of Australian research and innovation to reach market readiness and form the basis of new businesses, products and services. This AEA Innovation grant will fund the proof-of-scale required to speed the new, enhanced Reflux Classifier's path to market, contributing directly to realising outcomes of SDG 9.

The Reflux Classifier

TEACHING AND LEARNING

GET A UNIVERSITY DEGREE AT THE SYDNEY CRICKET GROUND

University students working towards a future career in sport now have the opportunity to complete postgraduate programs at Sydney's iconic Cricket Ground – Allianz Stadium. The University of Newcastle and the Global Institute of Sport (GIS) have formed a landmark partnership to launch a new sports-focused campus in Sydney, aimed at guiding talent and supporting Australia's growing sports industry in the lead-up to the 2032 Olympic and Paralympic Games.

The two master's degrees now open for enrolment by the University of Newcastle new Sydney CBD campus will be: a Master of International Sports Business and a Master of Sports Analytics, along with a Graduate Certificate of Sports Analytics. The Master of International Sports Business covers areas such as sports marketing, sponsorship, economics, sustainability, leadership, integrity and athlete management, which provides students with a comprehensive understanding of the global sports landscape. The Master of Sports Analytics and Graduate Certificate of Sports Analytics will prepare and educate students to use data to enhance sporting performance, fan engagement, and business decisions, an area rapidly expanding in the sports industry.

These programs are the first Australian university degrees with teaching from inside stadiums and are open to both domestic Australian and international students from January 2026. The unique 'stadium-based' campus model of learning is based on GIS success of campuses including Wembley Stadium in London and Inter Miami's Chase Stadium in the USA.

In addition to GIS professional sports facilities Wembley and Chase Stadium, the iconic Melbourne Cricket Ground, RSC Anderlecht's Lotto Park in Brussels, Maple Leaf Sports & Entertainment's BMO Field in Toronto, and football academies in Dubai and Jamaica will also be locations/options for Sydney-based students to learn.

This initiative grants students exposure to the inner workings of major sporting venues and events, offering a practical perspective that extends well beyond theoretical study. Through direct engagement, students connect with an impressive network of industry professionals and guest speakers. Notable figures such as Socceroo and Liverpool legend Harry Kewell, former Wallabies captain James Horwill, and senior executives from leading organisations including Cricket Australia, Tennis Australia, AFL clubs, and A-League clubs have already participated. This access serves to bridge the gap between academic learning and the realities of the sports industry, enhancing both professional development and industry understanding.

4th in Australia[1]

COMMUNITY OUTREACH

CONSTRUCTION BEGINS ON UNIVERSITY OF NEWCASTLE'S NEW CITY CAMPUS STUDENT ACCOMMODATION

The University of Newcastle has officially commenced construction on its new City Campus Student Accommodation, marking a major milestone in the Honeysuckle site development. Located on the corner of Civic Lane and Worth Place, the nine-storey building will deliver 445 student beds in a mix of micro studios, studios, twin rooms, and six-bed shared apartments, all designed to foster community living with shared dining, living, and outdoor spaces.

The project represents a significant investment in infrastructure that supports both education and urban renewal. By delivering high-quality, purpose-built housing in the heart of Newcastle, the development addresses the growing demand for student accommodation while easing pressure on the city's rental market.

Beyond housing, the facility is designed to enhance the student experience by creating vibrant and supportive spaces for domestic and international students. The project will also generate local jobs throughout construction, delivered by Hansen Yuncken with design by Architectus.

The City Campus Student Accommodation building is expected to be completed in early 2027.

REDUCED INEQUALITIES

RESEARCH AND INNOVATION

DR ALEONA SWEGEN AWARDED $200,000 TO ADVANCE FERTILITY INNOVATION

University of Newcastle researcher Dr Aleona Swegen has been named the inaugural winner of the Newcastle Permanent Innovation Accelerator Program, receiving $200,000 to fast-track the commercialisation of her fertility technology, SpermSafe. The innovation is designed to enhance sperm survival and motility while minimising DNA damage during IVF procedures, supporting equitable access to reproductive healthcare and addressing disparities in fertility outcomes.

The Newcastle Permanent Innovation Accelerator Program provides early-career researchers with funding, mentoring, and industry connections to translate research into practical solutions that improve community health. By enabling Dr Swegen to bring SpermSafe from the laboratory to clinical application, the program contributes to reducing inequalities in healthcare access and outcomes for individuals and families.

This initiative is a collaboration between Hunter Medical Research Institute (HMRI), Newcastle Permanent, the University of Newcastle, and Hunter New England Local Health District, reflecting a shared commitment to fostering local innovation with global impact. Through programs like this, research can create tangible improvements in the health and wellbeing of communities while empowering scientists to address pressing societal challenges.

(L-R) HMRI CEO and Institute Director Frances Kay, Dr Kirsten Coupland, Dr Anna Behler, Dr Gabrielle Briggs, Dr Aleona Swegan and Newcastle Permanent's Paul Juergens.

TEACHING AND LEARNING

SUPPORTING ABORIGINAL AND TORRES STRAIT ISLANDER STUDENTS TO SUCCEED

Growing up in Dubbo, Makaah Darcy aspired to study law at the University of Newcastle. With the help of the Claudia Sloan Scholarship for Indigenous Students, she was able to overcome financial challenges, reduce her workload, and focus on her studies while building connections with like-minded peers.

The scholarship, named in honour of Claudia Sloan for her commitment to Indigenous welfare, was established through the support of Ross Gittins AM. He emphasises that such scholarships are a valuable investment in students and their communities. Alongside her law degree, Makaah mentors and guides Aboriginal and Torres Strait Islander high school students, encouraging them to strengthen their cultural identity and pursue higher education. She hopes to inspire other students by showing that their goals are achievable.

These stories highlight how scholarships, combined with dedication and hard work, empower students to succeed and create lasting benefits for families and communities.

Makaah Darcy (left) and Yeena Thompson (right) celebrating at the 2024 Indigenous Scholars breakfast.

13th in Australia[1]

OPERATIONS

CHILDREN'S UNIVERSITY, NEWCASTLE: 500,000 HOURS OF LEARNING, GROWING, AND BELONGING TOGETHER

Education is a core tool to reduce inequality and end poverty. Since its inception in 2022, UNI STEPS has reached over 1000 high school students each year, inspiring them to persist with their education and undertake tertiary study through direct community outreach.

Devised as a multi-departmental collaboration across the University of Newcastle, combining the work of the Wollotuka Institute, the three colleges, the Marketing and Communications Future Students team, and the Pathways and Academic and Learning Support Centre, UNI STEPS is an educational program that allows students from year 3 to 12 from local, rural, and remote schools to study through on-campus workshops. Eroding the barriers to opportunity posed by geography or background, these programs directly confront the educational shortfalls that contribute to entrenched poverty and exclusion.

Flagship initiatives include affiliation with the Children's University. After developing a branch at Callaghan, open to students in years 3 to 6, the Children's University develops primary student's skills in public speaking, writing, and confidence. For high school students, other programs include connecting students to industry professionals and working directly with communities to support students as they study.

By hybridising in-class education and online workshops, the program enables students to consistently engage with content no matter where across the region they live. UNI STEPS ensures access to education for underrepresented communities by encouraging community engagement and communication, incentivising a holistic demand for students to study. The program equips prospective university students with the skills to excel and embeds education as the foundation of equality and opportunity.

Children's University graduates.

COMMUNITY OUTREACH

25 YEARS OF STEM ENGAGEMENT IN 2025 FOR THE SCIENCE AND ENGINEERING CHALLENGE!

The Science and Engineering Challenge (SEC), founded by the University of Newcastle in 2000, has inspired over 480,000 students to pursue STEM subjects. By the end of 2025, the program reached over half a million participants and celebrated 25 years of engaging students in practical science and engineering experiences.

Emeritus Professor John O'Connor, founding member and Chair of the SEC National Council, highlighted the program's success and support from Rotary and generous sponsors. In 2024, 24,941 students attended 88 school events, with over 34,000 members of the public participating. The 2025 anniversary year featured over 290 event days, culminating in the National Final at the University of Newcastle, where eight schools competed for the national title. SEC surveys show a strong impact on senior school STEM subject choices, with participants diverse in gender, socioeconomic background, and location – including Aboriginal and Torres Strait Islander students. The program has successfully challenged misconceptions about STEM careers, preparing students for tertiary study and future roles in science and engineering.

Science and Engineering Challenge participants.

480,00
Students

25
Years

The Science & Engineering Challenge

SUSTAINABLE CITIES AND COMMUNITIES

RESEARCH AND INNOVATION

GLOBAL EXPERTS UNITE IN NEWCASTLE TO DECARBONISE STEELMAKING

The City of Newcastle hosted the International Conference on Sustainable Cokemaking and Ironmaking 2025, bringing together global experts to tackle one of the world's toughest industrial challenges – reducing carbon emissions in steel production, which currently contributes 7% of global CO_2 emissions.

The event was facilitated by the University of Newcastle's BHP Centre for Sustainable Steelmaking Research (SSR), a hub for innovation in low-carbon steel technologies. Co-Directors Dr Arash Tahmasebi and Associate Professor Tom Honeyands said the conference offers critical opportunities for global knowledge-sharing, as each country faces unique challenges in transitioning to net-zero steelmaking.

Key speakers included Dr Jian Li from China Baowu Steel Group, the world's largest steel producer, and Jan van der Stel from Tata Steel Europe. The SSR is advancing research into low-emission processes, such as the direct reduced iron–electric smelting furnace route, powered by renewable electricity and hydrogen, as well as short-term improvements to existing blast furnace methods. The conference also highlights the next generation of researchers, with University of Newcastle PhD students presenting projects shaped in collaboration with the industry.

Held over the 16–19th of March at Newcastle City Hall, the event highlighted the University's commitment to sustainability as it celebrated its 60th anniversary.

Materials for low carbon ironmaking.

TEACHING AND LEARNING

RECORD NUMBER OF NEW COLOMBO SCHOLARS FOR UNIVERSITY OF NEWCASTLE

The University of Newcastle has secured more than $1.9 million to support 334 students through 23 New Colombo Plan (NCP) Mobility projects in 14 Indo-Pacific countries over the next two years. In addition, 11 outstanding students have been named NCP Scholars for 2025, the University's highest number since the program began.

Among the recipients is Bachelor of Arts/Bachelor of Science and Diploma in Languages student Madeleine Lock, who will undertake her Honours study in the Solomon Islands. Her research project aims to improve accessibility and inclusivity for Solomon Islanders who are deaf or hard-of-hearing by producing a community profile and conducting linguistic analysis of Solomon Islands Sign Language. Other scholars will travel across the region, focusing on areas such as sustainable architecture, fisheries management, aerospace, civil engineering, human rights, and education.

This funding places the University first nationally for the number of awarded projects and third for total funding, with an additional $150,000 secured for consortium projects. Since 2014, the University has received $17.6 million, enabling almost 4,300 students to gain global experience.

11 outstanding University students have been named NCP Scholars for 2025.

$1.9m

to support 334 students through 23 New Columbo Plan Mobility Projects

8th in Australia[1]

COMMUNITY OUTREACH

LEGACY SUPPORTS CONSERVATION RESEARCH

Australia is home to around 700,000 native species, many unique to the country. Thanks to a generous bequest from alumnus Gregory Knibb, vital research is underway to help protect threatened frog populations and their habitats.

Frogs are essential to healthy ecosystems, but populations are declining globally due to disease, habitat destruction and climate change. Scholarship recipient and PhD candidate Nadine Nolan is researching conservation strategies for two threatened species: the Littlejohn's Tree Frog and the Giant Burrowing Frog. She emphasises that a multi-pronged approach is needed to address the complex challenges facing amphibians.

Fellow recipient Oliver Kelly is investigating frog decline in NSW National Park reserves and leading Frog Find, a community science project that uses acoustic monitoring to detect frog calls. Each device can capture more than 100 hours of data, with volunteers helping researchers identify species and track environmental health.

Gregory Knibb, remembered for his passion for fieldwork and conservation, often volunteered with the University's Conservation Biology Research Group. His bequest continues his legacy, empowering researchers and communities to work together to safeguard frogs and other threatened species for future generations.

Littlejohn's Tree Frog (Litoria littlejohni).

OPERATIONS

CENTRAL COAST CAMPUS REACHES TOPPING OUT MILESTONE

The University of Newcastle has celebrated the structural completion of its new Central Coast Campus in Gosford, marking a major step towards its opening in 2026. A topping out ceremony at the Mann Street site brought together government officials, university leaders, community members, and contractors to acknowledge the project's progress. Vice-Chancellor Professor Alex Zelinsky AO described the campus as a "game-changer" that will expand access to higher education, boost regional growth, and stand as the University's largest investment since NUspace in 2017.

Funded by the University ($31.3m), the Australian Government ($18m) and the NSW Government ($18m), the campus will serve as a hub for education, connection and innovation in the heart of Gosford. Local, state and federal representatives hailed the milestone as a catalyst for jobs, investment, and new opportunities for Central Coast residents.

Completion was scheduled for late 2025, with the first students expected in 2026.

THE GO GREEN GOSFORD RECYCLING PILOT SAVES 3,600KG IN C02 EMISSIONS

In 2025, some lateral thinking by Central Coast Clinical School Sim Lab staff has seen the University make significant strides in reducing plastic waste and landfill costs. Whilst important in maintaining hygiene in medical use settings, single use plastics are a significant source of waste across the sector. As part of their training, medical staff need access to these tools to simulate situations that allow them to build core competencies they will rely on in the workplace. However, the amount of waste generated by simulation alone was well in excess of 900 cubic litres each teaching day. Through a combination of recycling, reusing, and donation, the SimLab team at Central Coast Clinical School has saved more than 3,500kg of carbon emissions from entering the atmosphere, this included saving 728kg of new plastic consumables from being needed by students, all while maintaining a fantastic learning environment. The success of this project is in no small part due to the willingness to work collaboratively and see a bigger picture, with support for the project coming from a variety of university sources including the College of Health, Medicine and Wellbeing; Gosford Hospital; Biobanks; and the Hunter Medical Research Institute. The project also supports the new recycling economy that is growing in the central coast area through its engagement with local Terracycle facilities and infrastructure. Supporting local communities to build new capacity in recycling and sustainability is just one more way the University is working with local initiatives like Go Green Gosford to make real change in our region.

RESPONSIBLE CONSUMPTION AND PRODUCTION

RESEARCH AND INNOVATION

DRIVING INNOVATION THROUGH CIRCULAR ECONOMY GRAND CHALLENGE

The University of Newcastle has launched its 2025 Grand Challenge, focusing on the transition to a circular economy, a system designed to minimise waste, maximise resource efficiency, and help achieve net zero goals.

Held on Tuesday 12 August, the Team Formation event connected students, staff, alumni, and community members from diverse disciplines, sparking collaboration and new ideas. Participants were invited to form teams, meet potential collaborators, and begin shaping solutions that respond to this year's challenge statement: How might we assist key stakeholders, such as suppliers, partners, and consumers, transition to circular economy practices?

The Grand Challenge provides a platform for innovative thinking with real-world impact. Teams will compete for a share of $30,000 in funding, with successful groups receiving up to $10,000 to test and refine prototypes over six months. Industry mentors will guide participants as they explore strategies to close resource loops, enhance accountability, and support sustainable production and consumption.

By moving away from the traditional "take-make-dispose" model, the University is encouraging solutions that prioritise reuse, repair, and recycling. The initiative reflects the University's own commitment to net zero through its 2025 Strategy, while empowering the next generation of innovators to lead in responsible consumption and production.

TEACHING AND LEARNING

UNIVERSITY OF NEWCASTLE ARCHITECTURE STUDENTS TO EXHIBIT AT THE 2025 VENICE ARCHITECTURE BIENNALE

University of Newcastle architecture students will present their work at the 2025 Venice Architecture Biennale, the world's leading platform for contemporary design. As part of the HOME: Country as Creative Process program, students collaborated nationally to create Living Objects — sculptural forms that reflect cultural, personal, and environmental understandings of Home.

Gathering - Sarah Duncan | Master of Architecture University of Newcastle

The project emphasises sustainable and responsible design practices by encouraging students to critically engage with concepts of Country, community, and culture while using design as a medium to express identity and belonging. These crafted works highlight the role of architecture in shaping thoughtful, resource-aware solutions that respect both cultural heritage and ecological systems.

By contributing to the Australian Pavilion exhibition, students are not only gaining international exposure but also demonstrating how creativity and cultural narratives can align with sustainable production. This initiative reflects the University of Newcastle's commitment to fostering innovation and preparing graduates to contribute to global discussions on responsible design and consumption.

Opened in May 2025, the Biennale gave students the opportunity to showcase their unique perspectives on Home while promoting the values of sustainable practice to a worldwide audience.

University of Newcastle architecture students present their work at the 2025 Venice Architecture Biennale

8th in Australia[1]

OPERATIONS

MGA THERMAL POWERS A CLEANER FUTURE THROUGH SUSTAINABLE ENERGY STORAGE

MGA Thermal, a startup born from University of Newcastle research, is transforming how renewable energy is stored and used, offering a scalable solution that supports responsible consumption and production at a global level.

At the heart of the innovation are Miscibility Gap Alloys (MGA) – small, stackable blocks made from abundant materials that can store heat energy up to 650 degrees Celsius. Costing just 10 percent of lithium batteries, these blocks provide an economical, long-term option for storing and delivering clean energy, particularly to heavy industry, which consumes up to five times more energy than households.

Since its formation in 2019, MGA Thermal has rapidly progressed from lab discovery to commercial impact. Its Hunter-based manufacturing plant now produces 200 blocks per day, and its demonstration facility has proven the system can scale to 6 gigawatt-hours of renewable energy storage. This makes it a viable alternative to fossil fuel reliance in sectors traditionally difficult to decarbonise.

With more than $23 million in investor backing, partnerships with global energy companies, and recognition through national innovation awards, MGA Thermal is positioning Australia as a leader in sustainable energy technology while directly contributing to reduced emissions and more responsible resource use.

Honorary Professor Erich Kisi.

COMMUNITY OUTREACH

FOSSIL FABLES STRIKES GOLD AT AUSTRALIAN GOOD DESIGN AWARDS

The University of Newcastle's Associate Professor Sam Spurr, together with Dr Eduardo Kairuz from Monash University, has received a prestigious gold accolade at the Australian Good Design Awards for the exhibition Fossil Fables.

Winner of the Architectural Design category, Fossil Fables explores Australia's complex relationship with coal mining and its environmental and social impacts. Through scale models, drawings, archival materials, and immersive installations, the exhibition illustrates the consequences of resource extraction and challenges audiences to reconsider how energy production shapes communities and landscapes.

The project is the work of the Global Extraction Observatory (GEO), a research collective co-founded by Associate Professor Spurr to investigate the effects of energy transition and extraction through creative practice and public engagement. The exhibition also builds on her teaching in the University's Architecture program, where students have developed projects in the Hunter Valley on themes of extraction, resilience, and landscape rehabilitation.

Recognition at the Australian Good Design Awards underscores how design can spark critical conversations on sustainability. By combining research, education, and public engagement, Fossil Fables demonstrates the power of architecture and design to address urgent challenges in climate change, responsible consumption, and sustainable futures.

335

Scholarly outputs in 2025

CLIMATE ACTION

RESEARCH AND INNOVATION

UNIVERSITY OF NEWCASTLE RESEARCHERS AND BIOCARBON PARTNERS ADVANCING INNOVATIVE SOLUTIONS FOR SOIL HEALTH AND SUSTAINABLE AGRICULTURE

Soil is one of Earth's most complex ecosystems, supporting billions of life forms, yet concerns around degradation are rapidly escalating. Thanks to generous donor funding, the University of Newcastle is pioneering an integrated approach to soil health that could transform agricultural practices worldwide.

Australia has one of the highest global rates of soil carbon loss due to land clearing, while climate change is accelerating erosion and intensifying bushfires. In response, University researchers are collaborating with industry partner BioCarbon Pty Ltd to develop innovative methods that boost soil carbon storage, reduce greenhouse gas emissions, and restore soil resilience. The project will harness the potential of naturally occurring soil algae – a microbial group often overlooked in soil science, combined with byproducts from heating organic material. This approach will be tested through field trials, product optimisation, and exploration of commercial pathways to ensure scalability.

Led by Professor Megh Mallavarapu and Dr Abinandan Sudharsanam, the research demonstrates how circular economy principles can strengthen soil health while contributing to carbon sequestration. By uniting science, industry, and philanthropy, the project has the potential to deliver climate-smart, sustainable solutions for farming systems and global food security.

Professor Mallavarapu, Dr Sudharsanam and BioCarbon representative, Dr Muk are developing practical solutions for soil health and sustainable agriculture.

TEACHING AND LEARNING

NEWLY DISCOVERED AUSTRALIAN FROGS HIGHLIGHT DIRE LIMITS OF CLIMATE CHANGE ADAPTATION

Two newly identified species of Australian frogs may be unable to adapt to escalating climate change impacts, raising urgent concerns for their survival.

Research published in Zootaxa, co-authored by Emeritus Professor Michael Mahony from the University of Newcastle, has described two new species of Whirring Tree Frogs that are restricted to small, cool, and moist upland habitats. Unlike other species that can adjust to gradual warming and drying, these frogs are now confined to isolated mountain environments with little opportunity to shift habitats as conditions change.

The Eungella Whirring Frog (Litoria eungellensis) is found only within 20 square kilometres of rainforest above 900 metres in Queensland's Eungella Range, while the Atherton Whirring Frog (Litoria corbeni) inhabits higher-altitude forests in the Atherton Tablelands. Both species have been evolving independently for more than 1.5 million years, distinguished by subtle variations in genetics and mating calls.

This discovery highlights the importance of targeted conservation, habitat protection, and climate action to prevent the loss of these unique species, which serve as early indicators of the broader risks climate change poses to biodiversity.

Professor Mahony said we need to recognise that not all species can adapt quickly enough. "Targeted conservation and habitat protection are essential to prevent these unique frogs from vanishing forever."

Whirring Tree Frog

2nd in the world

OPERATIONS

UNIVERSITY OF NEWCASTLE RANKED 2ND IN WORLD FOR CLIMATE ACTION

The University of Newcastle has been recognised among the global leaders in sustainability, placing second in the world for Climate Action in the 2025 Times Higher Education Impact Rankings.

The rankings assess how more than 2,300 universities worldwide are progressing toward the United Nations Sustainable Development Goals. Alongside its Climate Action result (SDG 13), the University ranked in the global top 100 across seven other categories, including 9th for Good Health and Wellbeing (SDG 3) and 35th for Clean Water and Sanitation (SDG 6). This achievement reflects the University's deep commitment to embedding sustainability across teaching, research, and operations. From renewable energy infrastructure, like solar-powered buildings, to partnerships advancing low-carbon technologies, the University is driving practical solutions to the climate crisis.

Key initiatives include the Trailblazer for Recycling and Clean Energy (TRaCE) program, advancing hydrogen, printed solar, and cleaner fuel technologies, as well as partnerships with global leaders such as Google Australia to assess geothermal energy. International collaborations, like the Moata'a Living Lab in Samoa, are also strengthening resilience to climate impacts and environmental conservation.

By linking world-class research with regional and global partnerships, the University is helping to build a more sustainable future for all.

COMMUNITY OUTREACH

COLLABORATING FOR CLEAN ENERGY AND COASTAL RESILIENCE IN THE PACIFIC

The University of Newcastle has strengthened its commitment to climate action in the Pacific region through a new Memorandum of Understanding (MOU) with the Samoan Ministry of Natural Resources and Environment (MNRE). The five-year agreement will drive collaboration on clean energy and coastal resilience through joint research, training, and knowledge exchange.

Representing the University, Professor Alan Broadfoot, Executive Director of the Newcastle Institute for Energy and Resources (NIER), signed the agreement on behalf of Professor Zee Upton, Deputy Vice-Chancellor (Research & Innovation). The collaboration builds on the University's long-standing Pacific engagement, including its 2017 MOU with the Secretariat of the Pacific Regional Environment Programme (SPREP).

The MOU supports capability development, the co-design of research projects, and the creation of educational resources. It also enables joint supervision of Masters and PhD students, training Samoan staff in renewable energy research, systems integration, and coastal resilience strategies.

Through this collaboration, University of Newcastle researchers will support Samoa in tackling critical energy and environmental issues, including renewable energy production, grid integration, waste-to-energy solutions, and community-led approaches to coastal resilience. The initiative exemplifies the University's role in promoting sustainable, evidence-based solutions for communities across the Pacific.

(Pictured L-R) Kathleen Taituave-Afereti - Assistant Chief Executive Officer for Legal Division of the Ministry of Natural Resources & Environment; Professor Alan Broadfoot, Executive Director, NIER; Lealaisalanoa Frances Brown Reupena, CEO, Samoan Ministry of Natural Resources and Environment; Justine Ulph, Manager, Strategic Research Initiatives, Office - DVC (Research and Innovation); Ms Fefiloi Renate Kerstin - Principal Renewable Energy Officer.

LIFE BELOW WATER

RESEARCH AND INNOVATION

NATIONAL RECOGNITION FOR UNDERWATER SOUND RESEARCH

University of Newcastle PhD candidate Brittney Valenzisi has conducted groundbreaking research connecting anthropogenic noise to negative marine health outcomes. Her study, published in Estuaries and Coasts and Marine Environmental Research, involved installing hydrophones in Lake Macquarie, Lake Burril, and Tuggerah Lakes, recording and analysing 4,000 hours of sound. Valenzisi found that boating and shipping noises were present in over half of the recordings, impairing fish in detecting predators, mating, and navigating their environment. This constant noise exposure caused high stress levels and psychological impacts on marine life. Dr Megan Huggett, a University of Newcastle lecturer in marine science and Valenzisi's supervisor, hopes the research will raise public awareness about sound pollution and promote strategies to protect aquatic ecosystems.

Brittney Valenzisi installing a hydrophone during her research collection.

TEACHING AND LEARNING

INNOVATIVE WATERWAY CONSERVATION IN THE HUNTER

Associate Professor Sara Motta and Aunty Theresa Dargin of the Dates mob, Worimi peoples, have co-developed the Nurringil/Re-Spiriting of Onebygamba project, revitalising degraded land and waterways in Carrington through Indigenous-led sustainability initiatives. Supported by a Bennelong Foundation SEED grant and an ADVANCE Equity scholarship, the project maps local wildlife, tides, and bird movements into interactive "soundscapes" accessible via QR codes, fostering community connections to Country.

The initiative also provides Work Integrated Learning opportunities for University of Newcastle students, combining practical sustainability experience with Indigenous leadership and community engagement. Recognised as a Gold Project partner by Newcastle Business School, the project models ethical, collaborative approaches to environmental conservation and reconciliation.

10th in Australia[1]

OPERATIONS

BUILDING PARTNERSHIPS AND BIODIVERSITY IN THE COOK ISLANDS

Life below water is one of the things being helped by research from Associate Professor Troy Gaston and Dr Alex Callen from the School of Environmental and Life Sciences through their work auditing catchment activities in partnership with the Cook Islands National Environment Service.

Their project is focussed on understanding and recording nature's unique areas in the Cook Islands as a part of the Global Environment Facility (GEF7) initiative. Troy and Alex worked alongside local stakeholders and government organisations, interrogating ways in which small, compact, high-density native plantings – or 'tiny forests' – work to support biodiversity and ecosystem resilience both on land and under the sea.

By better understanding the interaction between vegetation density, type and placement, one of the aims of their project is to decrease soil degradation and arrest runoff into the ocean where it can interfere with marine life and alter the nutrient landscape for native plants.

COMMUNITY OUTREACH

UNIVERSITY OF NEWCASTLE TEACHES COMMUNITY THROUGH NATURAL CONNECTION SUMMER PROGRAM

The University of Newcastle, lead Dr. Caelli Brooker along with Elizabeth Copeland from the University of Waikato, is excited to collaborate on the development of an Australian Marine Biosecurity educational resource for regional schools in NSW. Building on the success of "Marine Invaders," a scientific card game developed by Elizabeth Copeland from the University of Waikato, this project will create a new edition that highlights Indigenous Australian biodiversity. The game, originally designed to engage citizens in biosecurity efforts, will now feature Indigenous Australian perspectives, supporting conservation and citizen science.

In partnership with Deadly Science, Australia's leading Indigenous STEM charity, and Shirty Science, a social enterprise breaking stereotypes through creative t-shirts, the project will also encourage students to embrace STEM subjects and Indigenous culture. Artwork from the game will be featured on t-shirts and available globally, further promoting biosecurity awareness and Indigenous creativity.

224

Scholarly outputs in 2025

LIFE ON LAND

RESEARCH AND INNOVATION

SECRET KOALA POPULATION UNCOVERED ON CITY FRINGE

A baby koala clings to its mother, nestled on the treetops of Sugarloaf.

A University of Newcastle-led survey has uncovered a thriving, previously unknown koala population of more than 290 individuals in Sugarloaf State Conservation Area, on the city's fringe. Dr Ryan Witt, wildlife ecologist and leader of the University's thermal drone research program, led the landmark study, which is the largest and most accurate koala survey in NSW, estimating 4,357 koalas across 67,300 hectares of bushland.

The team, including University of Newcastle's PhD candidate Shelby Ryan, combined thermal drones, spotlight verification, and statistical modelling to locate koalas in under two minutes – a dramatic improvement over traditional on-foot surveying. Their research revealed that peri-urban habitats can support healthy koala populations, highlighting the importance of protecting these areas alongside pristine reserves.

The findings, published in Biological Conservation and funded by WWF-Australia, provide vital data to guide urgent conservation decisions, including habitat protection, fire recovery, and population monitoring, setting a new benchmark for large-scale, precise wildlife monitoring. Darren Grover, WWF-Australia's Head of Regenerative Country, said the organisation supported the research as part of its goal to double the number of koalas in eastern Australia by 2050.

Dr Ryan Witt, wildlife ecologist and leader of the University's thermal drone research program.

OPERATIONS

SCIENTISTS BREED HOPE FOR ENDANGERED LITTLEJOHN'S FROG

University of Newcastle conservation scientists have achieved a world-first by successfully breeding the endangered Littlejohn's tree frog (Litoria littlejohni) in captivity. Dr Kaya Klop-Toker and her team paired frogs from the Watagans, resulting in two clutches of eggs and around 90 healthy tadpoles – a breakthrough that marks a critical step for the species' survival.

The achievement is part of the University's Centre for Conservation Science and its Amphibian Integrated Conservation Unit. Assistant Director Dr Alex Callen said their integrated "One Plan" approach, combining habitat creation, reproductive biology, conservation physiology and biotechnology, has been central to success.

Working with NSW Forestry Corporation and NSW National Parks and Wildlife Service, the team has also created more than 40 breeding ponds in the Watagans. These "aquatic stepping stones" are reconnecting previously isolated frog populations and improving genetic diversity.

Dr Rose Upton is leading genetic rescue research using IVF, ultrasound and sperm cryopreservation to restore lost diversity in both captive and wild populations. Together, the scientists are also trialling innovative monitoring techniques and head-starting eggs to improve survival rates.

Through persistence and innovation, University of Newcastle researchers are giving the Littlejohn's frog a renewed chance of survival and shaping global amphibian conservation.

13th in Australia[1]

TEACHING AND LEARNING

UNDER THEIR WING: NEW ORNITHOLOGY SCHOLARSHIP

The University of Newcastle is proud to collaborate with Te Tu'anga A newly funded scholarship is set to advance conservation research into the nocturnal movements of native shorebird communities across the Port Stephens and Hunter estuaries.

The Margaret Flynn Ornithology Conservation Science Scholarship will support a PhD candidate within the University of Newcastle's Conservation Science Research Group. Using 24/7 automated motus telemetry, the candidate will investigate how different shorebird species forage and roost after dark addressing the critical gaps in knowledge about their habitats. As highly sensitive migratory species, shorebirds act as indicators of ecosystem health. By deepening our understanding of their movements, this research will inform strategies to protect biodiversity and safeguard vulnerable habitats impacted by environmental change.

Beyond supporting vital conservation outcomes, the scholarship will also help train the next generation of scientists, equipping them to lead in the protection of ecosystems both in Australia and around the world.

COMMUNITY OUTREACH

EARLY CAREER RESEARCHERS AWARDED MORE THAN $2.1M ARC DECRA FUNDING TO DRIVE FUTURE INNOVATION

The University of Newcastle is strengthening its contribution to biodiversity conservation and sustainable land management through ARC-funded early career research. In 2025, more than $2.1 million in ARC DECRA funding supported projects advancing environmental restoration, ecological resilience, and Indigenous knowledge systems.

Notably, Dr Brooke Williams is developing a decision-support tool to identify optimal land for forest restoration, maximising carbon sequestration, biodiversity protection, and economic outcomes while avoiding unintended impacts on agricultural systems.

Complementing this, Dr Lara Daley's Indigenous-led research embeds Aboriginal and Torres Strait Islander knowledge into policy frameworks, reinforcing culturally respectful and environmentally responsible stewardship of Country. Together, these projects enhance evidence-based approaches to protecting terrestrial ecosystems and support sustainable, inclusive pathways for land use and environmental governance.

$2.1
Million

ARC
Funding

The future of innovation in biodiversity conservation

317
Scholarly outputs in 2025

PEACE, JUSTICE AND STRONG INSTITUTIONS

RESEARCH AND INNOVATION

JENNY'S PLACE LEADS EARLY INTERVENTION RESPONSE TO DFV

Australia is facing a domestic and family violence (DFV) crisis, and a new University of Newcastle study highlights the vital role of early intervention in reducing risk. The research evaluated Jenny's Place Domestic Violence Resource Centre (NDVRC) in Newcastle, finding it provides a pioneering model of accessible, client-focused support.

Unlike many programs that only assist women after leaving violence, the NDVRC removes entry barriers and offers specialist casework support earlier, helping to reduce the likelihood of physical harm, homelessness, and domestic homicide. The study found this proactive approach not only protects women and children but may also ease pressure on emergency services such as police, ambulance, and hospitals.

Between 2021 and 2022, NSW recorded more than 31,000 DFV-related assaults, with the Hunter region accounting for nearly 10%. Early intervention models, like the NDVRC, are essential to addressing such alarming statistics and preventing violence from escalating.

The evaluation also emphasised the urgent need for secure, long-term funding to sustain and expand these services. Jenny's Place has been providing life-saving support for over 16 years, and continued investment will ensure it can remain a leader in prevention, protection, and advocacy for those most at risk.

Anyone seeking information or support can contact the Newcastle Domestic Violence Resource Centre on (02) 4927 6289 or via the contact page at jennysplace.org.

TEACHING AND LEARNING

FROM BOOTS TO BOOKS, ELLIE STRIVES TO MAKE SPORTS AND LAW ACCESSIBLE TO ALL

Beyond courtrooms and corporate offices, Ellie Jones has always believed that advocacy begins in the community.

Graduating with a Bachelor of Laws/Bachelor of Arts from the University of Newcastle, Ellie combined the structure of legal studies with the creativity of the humanities. This balance allowed her to explore both her passion for justice and her love for football, including her work as a facilitator in the University's award-winning Daughters & Dads program. As part of her degree, Ellie acted as a Daughters & Dads facilitator alongside her dad, Brad. Working with local families, the program encourages fathers to support their young daughters' passion for sport, with the aim of improving female participation at a grassroots level.

For Ellie, the program offered more than just joy, it reinforced the idea that inclusion matters in every sphere, whether in sport or in the legal system. She is committed to breaking down barriers, ensuring both fields are accessible and welcoming to all.

Supported by her family and fiancée Brendan at graduation, Ellie celebrated not only her academic achievement but also the beginning of her professional career. Having worked as a Legal Assistant with Rankin Ellison, she has now stepped into her role as a solicitor, determined to make the law less daunting and more equitable for the communities it serves.

Ellie celebrated graduation with the whole family.

12th in Australia[1]

OPERATIONS

BUILDING STRONGER COMMUNITIES THROUGH EDUCATION ON DARKINJUNG COUNTRY

Wiradjuri and Gomeroi twins Bailey and Leigtham Carney are transforming their passion for community into purpose through study at the University of Newcastle. Both work with Eleanor Duncan Aboriginal Services on Darkinjung Country, supporting the health and wellbeing of Aboriginal and Torres Strait Islander peoples on the Central Coast.

With guidance from the University's Wollotuka Institute, Bailey entered through the Aboriginal and Torres Strait Islander Admission Scheme to study Psychological Science, while Leigtham soon followed to study Social Work. Their story proves that a high school ATAR doesn't define potential and with the right support, there are many pathways to university and beyond. The University's Wollotuka Institute provides culturally safe pathways and ongoing support, ensuring more Aboriginal and Torres Strait Islander students can access and thrive in higher education.

Their message to young mob is clear: take every opportunity, believe in your potential, and use education to give back to community.

COMMUNITY OUTREACH

NGARRAMA LIGHTS UP KING EDWARD PARK NEWCASTLE

The University of Newcastle proudly hosted Ngarrama at King Edward Park on Saturday 25 January, inviting the community to come together for an evening of truth-telling, cultural sharing and reflection.

Led by the University's Wollotuka Institute in partnership with Awabakal Ltd, Awabakal Local Aboriginal Land Council, City of Newcastle, NGM Group and Port Waratah Coal Services, the free event highlighted the University's commitment to reconciliation and celebrating Aboriginal and Torres Strait Islander culture.

Ngarrama, meaning 'to sit, listen and know', provides a safe space for the community to connect to Country and engage with more than 60,000 years of history and culture. The evening program included dance, storytelling, music, and knowledge sharing, alongside the much-loved illuminated puppets and a new lantern parade.

The University of Newcastle's ongoing role in Ngarrama reflects its broader commitment to advancing Aboriginal and Torres Strait Islander excellence, strengthening cultural connections, and fostering meaningful dialogue across the region.

Running annually from 7–9pm, the event is family-friendly and alcohol-free, with attendees encouraged to bring a picnic and enjoy a night of reflection and celebration under the stars.

430

Scholarly outputs in 2025

PARTNERSHIPS FOR THE GOALS

RESEARCH AND INNOVATION

ASTRONOMERS GAIN UNPRECEDENTED INSIGHT INTO THE FORMATION OF A PLANET 850 LIGHTYEARS AWAY

University of Newcastle astronomer Dr Tom Evans-Soma has led an international team in uncovering the chemical composition of exoplanet WASP-121b, also known as Tylos, located 850 lightyears from Earth. Using the NASA James Webb Space Telescope, the team conducted a continuous 40-hour observation to analyse the planet's atmosphere in unprecedented detail.

The study revealed silicon monoxide gas, a first in any planetary atmosphere, alongside water vapor, carbon monoxide, and methane, challenging existing models of atmospheric dynamics and planetary formation. These findings suggest Tylos formed further from its star in colder conditions, accumulating carbon-rich gas and rocky material that later vaporised as the planet migrated inward.

This research demonstrates the University of Newcastle's contribution to advancing global understanding of planet formation and exoplanetary atmospheres. By combining cutting-edge space observation with international collaboration, the work enhances knowledge of planetary origins, informs future searches for Earth-like planets, and strengthens the University's reputation as a leader in astronomy and astrophysics research.

Dr Evans-Soma pictured with an artist impression of "Tylos" by Patricia Klein

TEACHING AND LEARNING

I2N CONNECTS STUDENTS WITH INTERNATIONAL STARTUPS THANKS TO $572,000 NCP GRANT

A $572,000 New Colombo Plan grant is helping University of Newcastle students build international connections and entrepreneurial skills through the Integrated Innovation Network (I2N) and Newcastle Business School.

As part of the initiative, 32 students travelled to Hong Kong to complete startup placements at the Hong Kong Science and Technology Park, a leading innovation hub supporting more than a dozen billion-dollar companies. Working on projects in areas such as artificial intelligence, circular economy technologies, and digital health, students gained hands-on experience within a thriving international innovation ecosystem.

Students taking part in the two-week Hong Kong tour were immersed in the Hong Kong Science and Technology Park (HKSTP), the largest innovation and technology ecosystem in the Special Administrative Region

Through programs like these, the University of Newcastle is expanding global partnerships, and is proud to empower students to apply their learning beyond the classroom and preparing the next generation of innovators to lead solutions for a connected and sustainable future.

7th in Australia[1]

OPERATIONS

INDIGENOUS-LED QUIT SMOKING PROGRAM UPSCALES NATIONALLY TO HELP CLOSE THE GAP

Smoking and vaping remain the leading preventable cause of chronic disease and early death among Aboriginal and Torres Strait Islander people, contributing significantly to the health gap. Associate Professor Michelle Kennedy (Wiradjuri) of the University of Newcastle's HMRI Equity in Health and Wellbeing program is leading the national expansion of the Which Way? Quit Pack program, an Indigenous-led initiative supporting culturally safe smoking cessation.

Building on pilot programs in NSW, Victoria, and the ACT that have already helped more than 1,000 participants, the program combines Indigenous knowledges with evidence-based interventions, including mailed resources, Nicotine Replacement Therapy, and phone and text-based support. Designed with input from Aboriginal and Torres Strait Islander communities, the program addresses barriers to quitting by delivering accessible, culturally responsive support directly to participants' homes.

Which Way? Quit Pack research team members (L-R) Felicity Collis (Gomeroi), Kayden Roberts-Barker (Wiradjuri), Jessica Bennett (Gamilaroi) and lead researcher Associate Professor Michelle Kennedy (Wiradjuri).

The national trial, funded through a $4.7 million MRFF Indigenous Health Research grant, will evaluate both effectiveness and sustainability, providing critical insights for public health policy and practice. The University of Newcastle is proud to facilitate this work, empowering communities to improve health outcomes and reduce the intergenerational impacts of smoking.

COMMUNITY OUTREACH

SMS4DADS SET TO EXPAND TO SUPPORT MORE RURAL AND REMOTE FATHERS

New fathers in rural and remote communities often face significant barriers in accessing parenting and mental health support. Associate Professor Richard Fletcher of the University of Newcastle is leading research into the SMS4dads program, a digital initiative designed to engage, support, and monitor the wellbeing of expectant and new fathers through tailored text messages. The program addresses challenges such as sleep routines, toddler management, work-life balance, and co-parenting, aiming to strengthen family relationships and foster mental health during the transition to fatherhood.

In partnership with organisations including Red Nose Australia, Defence Health, Awabakal Medical Service, and community groups in Central Australia, the program delivers culturally and contextually appropriate support to diverse groups, including First Nations fathers, teenage dads, and bereaved fathers. Using a stepped care model, messages connect men to tailored support based on their individual needs, ensuring that fathers in even the most remote locations receive timely and relevant assistance.

The University of Newcastle facilitates this research to expand access to parenting support and improve family wellbeing. By leveraging digital technology and community partnerships, the program empowers fathers to navigate early parenthood with confidence, contributing to stronger, healthier communities across rural and remote Australia.

Associate Professor Richard Fletcher leads the Fathers and Families Research Program (FFRP). [Pictured]

cifal Newcastle | unitar United Nations Institute for Training and Research

As we turn our focus to 2026, the University of Newcastle enters the next chapter of its sustainability journey with momentum, confidence and ambition. Building on the strong foundations outlined in this report, the year ahead will be marked by bold and exciting initiatives that further embed the Sustainable Development Goals across teaching, research, operations and global engagement.

Through CIFAL Newcastle, the University will continue to strengthen its role as a regional and global leader in capacity building for sustainable development. Expanded programming, new partnerships and enhanced certification pathways will create greater opportunities for government, industry and community leaders to gain practical, action-oriented skills and experiences that help in realising the SDGs.

Education remains at the heart of our sustainability agenda. A major milestone is the launch of the new sustainability course, Enough for Everybody, Forever, now live and accessible to learners. Designed to equip participants with the knowledge, systems thinking and practical tools needed to address complex sustainability challenges, the course reinforces the University's belief that sustainability literacy is essential for all and all actions make a difference. By making sustainability education inclusive and future-focused, the University is empowering students, staff and the wider community to become active contributors to a more just and resilient world.

Our 2026 is a year of growth, innovation and collaboration. Through expanded global engagement, strengthened education pathways and a continued commitment to the SDGs, the University of Newcastle is well positioned to lead positive change locally, nationally, and globally, towards a sustainable future for all.

UNIVERSITY OF NEWCASTLE AUSTRALIA