



UNIVERSITY
OF WOLLONGONG
AUSTRALIA

Submission: Jobs for the Future in Regional Areas

Senate Select Committee

September 2019

INTRODUCTION

The University of Wollongong (UOW) welcomes the opportunity to provide input in response to the Senate Select Committee Inquiry into Jobs for the Future in Regional Areas.

UOW is supportive of Government policy and programs which support, encourage and help to generate regional development, innovation and, new employment opportunities. UOW actively supports the economic development and sustainability of regions across NSW through the provision of its Wollongong and regional campuses, and the delivery of initiatives such as the Innovation Campus (iC), iAccelerate, innovative manufacturing facilities, and the development of its Health and Wellbeing Precinct.

UOW is deeply embedded in the Illawarra community and is committed to helping grow an innovative region, transitioning the Illawarra from conventional manufacturing to more advanced technology and creating a high-tech industry cluster. Wollongong's transformation is an excellent case study of how universities can work with local councils and other stakeholders across their region to create new jobs and industries, modernise economies and accelerate smart-city transformation.

This Submission broadly addresses key elements of the Committee Terms of Reference by demonstrating the important role UOW is playing transforming the Illawarra and other regional areas in which it operates, in the generation and application of new ideas and, its capacity to educate people to meet the needs of the future workforce. In doing so, it seeks to demonstrate the role universities such as UOW can play in implementing government policy initiatives which encourage innovation and support the transition of regions into new industries and areas of employment opportunities.

ABOUT THE UNIVERSITY OF WOLLONGONG

UOW is a research-intensive university that has built a strong international reputation for world-class research and exceptional teaching quality, and is ranked amongst the top 250 of universities worldwide. In 2018, UOW had over 36,000 total student enrolments globally and more than 2,400 staff (Full Time Equivalent).

The University offers more than 300 undergraduate/postgraduate courses and research degrees across a wide range of disciplines through the five broad faculties of Business, Engineering and Information Sciences, Law, Humanities and the Arts, Science, Medicine and Health and, Social Sciences.

UOW is an international multi-campus university, with campuses at Wollongong, Shoalhaven, Batemans Bay, Bega, and the Southern Highlands, and three Sydney campuses (at Loftus, Liverpool and Sydney CBD). The University also has campuses in Hong Kong and Dubai.

In late 2018 UOW continued its global expansion by acquiring the university colleges of Malaysian private education provider KDU from long-standing Malaysian investment company Paramount Corporation Berhad (PCB). Through the deal, UOW immediately acquired a substantive majority equity interest in the university colleges in Kuala Lumpur and Penang, including a new campus under construction in Batu Kawan.

It also delivers its education programs at other international locations, including at the Central China Normal University (CCNU), the Singapore Institute of Management, INTI College in Malaysia and, the PSB Academy in Singapore.

UOW has also developed the iC in Wollongong which is an education, research and related business precinct. This state of the art facility provides strong linkages between business and research, and complements the University's leading research and innovation institutes.

UOW'S TRANSFORMATIVE ROLE IN THE REGION

A recent economic impact assessment estimated the total value-add contribution of UOW to Australia's Gross Domestic Product in 2015 was \$1.2 billion, with \$815 million in value add to the local Illawarra economy, as summarised in Table 1 below. The total direct, indirect and induced job creation for the Illawarra region is 7,195 Full Time Equivalent (FTE), which increases to 7,794 FTE across NSW.

UOW also generated \$557.9 million in research and innovation income between 2006 and 2015, and has assisted over 150 businesses through its iAccelerate facility since 2012.

Table 1: UOW total economic contribution (2015)

	Illawarra	NSW	Australia
Gross Output	\$1,393M	\$1,545M	\$2,161M
Value Added	\$815M	\$886M	\$1,210M
Jobs (FTE)	7,195	7,794	10,169

Supporting new industries and new jobs

The survival and success of local economies is being increasingly drawn to universities as the source of a skilled workforce and new ideas. UOW has been, and will continue to be, a source of strength that anchors the Illawarra's economy. The nexus between community, business and university is more important than ever and UOW is committed to shaping the local agenda and the transition to new industries and new jobs.

The changing structure of employment in the region over the last 30 years shows the growing importance of UOW's role as a developer of skilled human capital in the region. The coming period offers major opportunities for us to continue to evolve Wollongong from a steel city towards being a diverse, highly skilled and globally competitive university city.

For decades, coal mining and heavy industry manufacturing have laid the economic, social and cultural foundations for the Illawarra. However, over the past three decades, the region has faced substantial economic challenges due to significant pressure on the region's traditional industries and is moving towards a more diverse economy.

Key sectors now include advanced manufacturing, logistics, finance, insurance, business and professional services, information and communications technology (ICT), tourism, defence, health and education. Traditional manufacturing, mining and engineering sectors remain important. UOW is helping to ensure that its students are equipped with the necessary skills and knowledge needed to compete in a vastly changed employment landscape. UOW is also committed to retaining graduates in the Illawarra.

UOW is driving change that is locally relevant to regional priorities but with a global impact. Our research partnerships with business and industry produce greater levels of innovation and impact, and contribute to the creation of new enterprises. Through its research and links, UOW is continually generating ideas, new technologies and new knowledge, which lead to new industries and new jobs.

UOW INITIATIVES CREATING AND SUPPORTING JOBS FOR THE FUTURE IN REGIONAL AREAS

Innovation Campus

UOW's iC continues to strengthen business, education and research ties locally and globally and has contributed greatly to increased collaboration between UOW and industry.

The award-winning research, innovation and commercial precinct contributes \$195 million to the Illawarra economy each year, helping to activate new economic activity and regional jobs and enhancing the region's competitive edge in the marketplace.

The precinct is home to a number of UOW's research institutes, along with a well-established community of innovation companies that are strongly engaged with the University.

- iAccelerate - an incubator for new business start-ups
- The Australian National Centre for Ocean Resources and Security (ANCORS) - Australia's only multidisciplinary university-based centre dedicated to research, education and training on ocean law, maritime security and natural marine resource management.
- Sustainable Buildings Research Centre - a 6 Star Green Star- Education Design v1 accredited, multi-disciplinary facility that hosts a wide range of research and industry collaborations to address the challenges of making buildings sustainable
- Australian Institute for Innovative Materials - a key national laboratory for medical and energy materials
- Illawarra Health and Medical Research Institute - a joint venture with the Illawarra Shoalhaven Local Health District
- SMART Infrastructure Facility - a key national laboratory for research on infrastructure

In 2018, UOW selected development partner Lendlease for the innovative \$500 million Health and Wellbeing Precinct to be built at the iC. The Precinct is anticipated to be operational by 2022, and will bring significant benefits to the Illawarra community and beyond. The Precinct will integrate research and training environments with non-surgical health care and aged-care facilities.

iAccelerate

Start-up companies play an important role in local, regional, state and national economies. They encourage innovation, provide opportunity to commercialise ideas, generate new cash flow, and new employment opportunities.

The iAccelerate program is a UOW initiative launched in 2011 to drive entrepreneurialism and innovation throughout the region by pairing the skills of UOW students and staff with those of the greater Illawarra community. iAccelerate is the first and largest facility of its kind in Australia as it supports both early stage businesses and more advanced companies with high growth potential, while providing entrepreneurs with the benefits of working alongside a world-class, research-intensive university.

The purpose built iAccelerate Centre at UOW's iC was officially opened in July 2016 to house the growing number of entrepreneurs involved in the program, with funding of \$16.5 million secured from the NSW Government's Restart Illawarra Innovation Fund.

iAccelerate is helping to facilitate the rapid acceleration of new startups and is attracting new businesses to the Illawarra. The ambition is for the program to create 500 direct and 1000 indirect jobs by the end of the decade, attracting \$70 million in investment to the regional and state economies. Companies that grow at the iC will also help to reflect and address the unique challenges of regional areas.

iAccelerate has reached its target of creating over 500 new direct jobs, well ahead of schedule, and assisted over 150 companies in total since 2012. iAccelerate supported 74 companies in 2018 in a range of fields including tech, hardware services, education, health, wellbeing and social, with 131 new jobs created in 2018 (not including founder jobs and other opportunities). A total of 29 new companies joined iAccelerate in 2018.

The 74 startups supported at iAccelerate during 2018 delivered great results, including:

- Generating over \$37 million in revenue (a 37% year-on-year increase)
- Winning \$3.07 million in successful grants
- Raising \$2.3 million in equity
- Launching 210 products, with an additional 117 products under development
- Making 28 successful applications for registration of IP

iAccelerate is also creating opportunities for members of the community and for researchers and students to gain experience to be involved with a startup, and is creating new pathways for research and innovation to

have a greater impact. The Facility also host entrepreneur groups from established business looking to spin out innovations.

In 2018 the iAccelerate program, with support of the Federal Government Incubator Support Initiative, rolled out the iAccelerate program into the South Coast of NSW, with the creation of the Bega Valley Innovation Hub (BVIH). The BVIH is the first partner of the iAccelerate Innovation Network. Selected applicants and services get the opportunity to take part in training, education and mentoring out of the BVIH over 12 weeks. Seed funding is available at the end of the program to put in place some of the outcomes.

The BVIH is an excellent model which is helping to demonstrate how UOW's iAccelerate model can be rolled out more broadly to help deliver a positive impact in preparing a region for a future that will depend on many new skills including well developed entrepreneurial talent.

Universities and other education providers, such as TAFE, are established in regions across NSW and have infrastructure and expertise which can be of assistance to support start-up companies. They also have strong linkages and relationships with industry, people and schools in the local regions. There is great opportunity for government to work with universities and other existing regional hubs to increase support to start-up companies in an integrated, economical and effective way.

Innovative Manufacturing

UOW is working closely with industry, research partners, governments, other universities and VET providers to provide solutions to support existing and emerging businesses as they look to adopt advanced manufacturing technologies and innovative systems. In doing so, it is supporting the re-emergence of regional jobs and new innovative businesses.

UOW is at the forefront of exciting new manufacturing opportunities based on innovation and technology Research in innovative manufacturing at UOW spans 3D printing, high-strength alloys, better battery materials, bionic implants and nanomaterials, along with innovative building materials. Researchers are also developing innovative machinery like 3D printers, high productivity welding systems, metal forming systems and autonomous robots.

Examples of UOW's initiatives driving innovation in manufacturing include:

Global Challenges

- UOW's Global Challenges Program draws together researchers to tackle regional challenges that have the potential to make a difference on a global scale. One of the themes of the Global Challenges Program is Making Future Industries. This theme brings together experts from the fields of engineering, design, economics and social sciences to explore new technologies and industries, in turn helping businesses develop innovative products and improved processes to make them. These researchers are working on projects to support regional manufacturing innovation.

Australian Institute for Innovative Materials

- Australian Institute for Innovative Materials (AIIM) is home to two of UOW's flagship research institutes - the Institute for Superconducting and Electronic Materials (ISEM) and the Intelligent Polymer Research Institute (IPRI), which is also the lead node of the ARC Centre of Excellence for Electro materials Science (ACES).
- ACES is leading the nation's research into development of new industries and manufacturing opportunities in next-generation materials such as biomedical implants, batteries and solar cells.
- When IPRI was established in 1990 it was the world's first intelligent polymer research laboratory, and it has remained at the leading edge of research in this field ever since. Its researchers work with nanomaterials in areas such as renewable energy, medical science, sustainable industries and 3D printing.
- ISEM is a world-leading research institute dedicated to developing new and innovative technologies to generate, transport and store energy and improve the efficiency of electronic devices. The Institute's research program focuses on developing new technologies and materials for applications in hybrid

vehicles, medical equipment, telecommunications technologies, biomedical applications, and turning waste heat into an energy source.

Health and Wellbeing Precinct

UOW is committed to improving the health and wellbeing of those in our communities, particularly people living in rural, regional and remote areas of Australia, and continues to develop and implement initiatives in infrastructure in this space.

The Health and Wellbeing Precinct at UOW's iC will revolutionise the integration of research, clinical practice and patient-led care. The Precinct will include Australia's first primary and community health clinic to offer truly integrated, patient-centred health care, as well as aged-care and retirement living facilities, and research and teaching programs.

The hub of the Precinct will be intoHealth, a \$50 million community health clinic, which will be a centre of excellence in integrated healthcare to address key health issues facing the Illawarra and Shoalhaven, including chronic lifestyle diseases, mental health, disability and mortality rates. intoHealth is modelled on the patient-centred approach of successful established models of care such as the Mayo Clinic in the United States. It will be the heart of the Precinct, connecting the adjacent network of community, research, residential and aged care facilities. intoHealth will be closely linked with the Illawarra Health and Medical Research Institute (IHMRI) at UOW to enable innovation in healthcare technology.

The Precinct also incorporates the Aged Living initiative which will provide innovative retirement living and residential aged care services. The first stage of Precinct development will include a 180-bed aged-care facility, with future stages to include 199 independent retirement living units, all supported by integrated and innovative on-site aged-care services. Residents will be part of a vibrant intergenerational on-campus community, enabling them to maintain their independence and quality of life. Operated in partnership with an aged living services provider, the Aged Living initiative within the Precinct will link research, teaching and learning with exceptional care.

This Precinct project represents an investment of up to \$500 million that could generate more than 2,000 new jobs, both during construction and in ongoing development. Construction is tentatively planned to commence in 2020, with the first facilities potentially operational by 2022. Economic modelling indicates that Stage One, in its initial five-year development and operations, will add \$600 million in total value to the Illawarra (in direct, indirect and induced impacts).

Regional Campuses

Regionally-located universities play important roles in the economic and social development of the areas in which they are located. Access to universities, VET and other higher education facilities in regions is important to ensure students from regional, rural and remote areas are given opportunity to undertake further education beyond school.

As previously noted, UOW has a number of regional campuses across NSW, including at the Shoalhaven, Southern Highlands, Batemans Bay and Bega. Regional campuses play a significant role in strengthening teaching and learning, outreach, community engagement, social inclusion and indigenous participation.

UOW's regional campuses are well integrated within their region, and provide a valuable link to students and the communities, in which they exist, including schools and businesses.

In addition to delivery of its programs, UOW regional campuses also undertake a range of activities and initiatives aimed at working with students in regional and remote parts of NSW and Australia aimed at raising the aspirations, awareness and attainment of individuals from underrepresented backgrounds in higher education.

KPMG demographer Bernard Salt has identified five preconditions to vibrant regions, and each of the local government areas in which UOW' campuses are located have two of these five assets. The presence of a

university campus is the only constant across these areas, highlighting UOW's value to the social and economic development of these regions.¹

SUMMARY

In summary, UOW emphasises the need for the Federal Government to recognise the significant role that universities, such as UOW, play in supporting and driving regional development, innovation and, new employment opportunities.

Federal and State Government should support universities to continue this role by supporting collaboration and commercialisation of research and innovation as a vehicle to drive economic and social development in regional Australia. The provision of targeted and adaptive government policy can help support and provide incentives to facilitate business in regions.

There is opportunity to link government support with existing UOW initiatives and operations such as iAccelerate, AIIM and the Global Challenges Program to expand the benefits these initiatives are already providing more broadly across Australia's regional economies.

Utilisation of universities and other institutions within regional areas, such as TAFE and local business hubs, could provide cost, resource and time effective way of efficiently reaching into regional areas and making a positive, collaborative approach to supporting innovation, regenerate traditional industries and build regional ecosystems.

¹IRIS Research, University of Wollongong: Southern NSW Regional Campuses Strategic Direction (Draft), 2017.