

PERSONALISED EXPERIENCES: WORLD-CLASS RESULTS



Ideas / Ideals / Impact

# FIVE-STAR RATED MODERN AUSTRALIAN UNIVERSITY

UOW figured prominently in global rankings during 2014. Poised to celebrate its 40th year as an independent university in 2015, UOW has built an international reputation for world-class research and exceptional teaching quality.

**∴** TOP 50

OF UNIVERSITIES
UNDER 50 YEARS OLD

22nd in the QS Top 50 Under 50 Ranking for modern universities under 50 years old in 2014

33rd in The Times Higher Education (THE) 100 Under 50 rankings of the world's best young universities

**◆** TOP 2%

OF UNIVERSITIES IN THE WORLD

283rd in the world – QS World University Rankings 2014/15

282nd in the world – The Times Higher Education World University Rankings 2014/2015

329th in the world – Academic Ranking of World Universities (ARWU) 2014

★ 5-STAR

5 Star Rating – QS World University Rankings 2014

For the 14th year in a row, the Australian Good Universities Guide (published in 2014 for 2015) awarded UOW five stars for 'Getting a Job in its Graduate Outcomes category.

**⋄** TOP 2%

OF WORLD UNIVERSITIES

The 2014 Leiden Rankings from the Netherlands placed UOW in the top 2% of world universities for research quality (314th in the world).

▲ TOP 100

FOR GLOBAL GRADUATES

For eight years employers have ranked UOW in the top 100 universities in the world for the quality of its graduates – QS World University Rankings Graduate Employers Survey 2014



# VICE-CHANCELLOR'S **OVERVIEW**

National recognition for the quality of our research and teaching, reinforced by global rankings results and increased student enrolments all highlighted a stellar year for UOW in 2014.

We achieved an excellent year of Australian Research Council (ARC) funding, national recognition for the quality of our teaching environment and seen the introduction of UOW's massive on-line courses (MOOCs).

In 2014 we enjoyed an increase of 2.5% in total on-shore and off-shore enrolments. This was largely driven by domestic school-leaver first preferences, which were up 14% on 2013. This allowed UOW to make additional offers while maintaining entry standards. In summary, domestic undergraduate commencements rose by 7.1% and international off-shore enrolments by 10.8% driven primarily by increased enrolments at UOW Dubai (up 10.7%) and INTI Malaysia (up 18%).

The 'Infrastructure Developments' section of this Annual Review clearly highlights the marked changes to the built environment on our campuses. We celebrated the opening of the Sustainable Buildings Research Centre in August and completed the \$44 million Early Start facilities (including an Early Start Discovery Centre) in December. This is a project that will radically transform educational, health and social outcomes for children in regional, rural and remote communities. The new \$33 million Sciences Teaching Facility made great progress and is expected to be handed over in March 2015.

The building will provide new undergraduate laboratories for Environmental Sciences, Biological Sciences and Chemistry.

Late in the year, UOW signed off on two major transactions. The University reached commercial and financial close on a new student accommodation project, which is the first of its kind in Australia. UOW has entered into a long-term licence agreement for its entire student accommodation portfolio with a private sector consortium, which will invest in two new on-campus residences, taking the number of beds the University can provide to students to more than 2,700, by 2018.

UOW also won the international competition to work with City University's Community College in Hong Kong strengthening our position as a global higher education provider in North-East Asia. We believe we are well placed to help take the Community College to the next phase of its development.

During the year we had to absorb cuts as a result of announcements emanating from the May 2014 Federal Budget as well as cuts flowing on from the 2013 budget. However, we continued to maintain a strong financial result for the year consistent with our overall strategic financial management plan. There is little doubt that we will need to work hard into 2015 to maintain our finance strategy.

The Federal Government proposals to introduce deregulated domestic undergraduate fees and cuts to the Commonwealth grant to universities generated considerable public discussion. Senate voted against these proposals in December. Modified versions of this legislation are expected to be considered again in 2015. UOW has argued for a sustainable system of funding which will allow the University to compete on a global stage.

Next year UOW celebrates 40 years since we gained our independence from UNSW and became the University of Wollongong. Global rankings results over the past year have clearly shown that we have rapidly developed into a five star-rated modern Australian university.

The rankings results highlighted in this Annual Review demonstrate how UOW has built an international reputation for world-class research and exceptional teaching quality.

I hope you enjoy reading the articles contained in this Review which demonstrate the remarkable achievements of our young vibrant university.

PROFESSOR PAUL WELLINGS CBE VICE-CHANCELLOR

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## OUR VISION

To be a leader in ideas and solutions, a community of campuses and partners where discovery, learning and technology connect to transform people and the world we live in.

# WHAT WE BELIEVE

At UOW people come to be part of something bigger than themselves.

We are people connected by a passion for excellence.

Here's a small insight into what we believe and the values that drive us.

- We believe being passionate about learning and excellence delivers better outcomes for all.
- We believe being refreshing and innovative in everything we do, creates new approaches, connections and possibilities.
- We believe by having an inclusive heart and mind, we expose ourselves and others to new thinking and experiences.
- We believe quality teaching and research has high impact on society and individuals.

UOW IN NUMBERS*	
CAMPUSES	
TOTAL STUDENT ENROLMENT	
ONSHORE STUDENT ENROLMENTS	
OFFSHORE STUDENT ENROLMENTS	
INTERNATIONAL STUDENTS ENROLLED IN AUSTRALIA AND ABROAD	
NATIONALITIES AT UOW	
EMPLOYEES <sup>^</sup>	
OF STUDENTS INDICATED THAT THEY WOULD RECOMMEND UOW	
DEGREES ON OFFER	
RESEARCH STRENGTHS	
ACADEMIC AND RESEARCH COLLABORATIONS GLOBALLY	
UOW ALUMNI	

<sup>\*</sup>Figures based on UOW data as at 31 December 2014.

<sup>^</sup> Onshor

## UOW STRUCTURE





#### **VICE-CHANCELLOR AND PRINCIPAL**

Professor Paul Wellings CBE

BUSINESS ASSURANCE UNIT (INTERNAL AUDIT)

GOVERNMENT RELATIONS OFFICE

#### **SENIOR EXECUTIVE**



SENIOR DEPUTY VICE-CHANCELLOR

Professor John Patterson

FACULTY OF BUSINESS PROFESSOR JOHN GLYNN

FACULTY OF LAW, HUMANITIES & THE ARTS PROFESSOR AMANDA LAWSON

FACULTY OF ENGINEERING & INFORMATION SCIENCES PROFESSOR CHRIS COOK

FACULTY OF SCIENCE, MEDICINE & HEALTH PROFESSOR ALISON JONES

FACULTY OF SOCIAL SCIENCES MR JOHN STEELE

PLANNING, MARKETING & COMMUNICATIONS DIVISION



DEPUTY VICE-CHANCELLOR (RESEARCH)

Professor Judy Raper

DEAN OF RESEARCH PROFESSOR TIM MARCHANT

RESEARCH & INNOVATION DIVISION

RESEARCH INSTITUTES AND CENTRES

SCIENCE CENTRE

IACCELERATE

GLOBAL CHALLENGES PROGRAM



#### DEPUTY VICE-CHANCELLOR (EDUCATION)

Professor Eeva

PRO VICE-CHANCELLOR (INCLUSION & OUTREACH) PROFESSOR PAUL CHANDLER

ACADEMIC QUALITY & STANDARDS

BUSINESS ANALYSIS & LEARNING ANALYTICS

HIGHER EDUCATION RESEARCH & POLICY INSTITUTE

LEARNING, TEACHING & CURRICULUM

LIBRARY SERVICES

REGIONAL CAMPUSES & STUDENT DIVERSITY

STUDENT CAREER DEVELOPMENT AND EMPLOYABILITY

STUDENT EXPERIENCE

WOOLYUNGAH INDIGENOUS CENTRE



#### DEPUTY VICE-CHANCELLOR (INTERNATIONAL)

Professor Joe Chicharo

PRO VICE-CHANCELLOR (MIDDLE EAST & NORTH AFRICA) PROFESSOR MOHAMED SALEM

PRO VICE-CHANCELLOR (SOUTH EAST ASIA) PROFESSOR TONY SIMOES DA SILVA

INTERNATIONAL BUSINESS DEVELOPMENT MANAGER

INTERNATIONAL ENGAGEMENT & COORDINATION

OFFSHORE TEACHING PARTNERSHIPS

STUDY ABROAD & EXCHANGE

TRANSNATIONAL EDUCATION AND ALLIANCES



#### CHIEF ADMINISTRATIVE OFFICER

Ms Melva Crouch CSM



ACCOMMODATION SERVICES DIVISION

FACILITIES MANAGEMENT DIVISION

GOVERNANCE AND LEGAL DIVISION

HUMAN RESOURCES DIVISION

STUDENT SERVICES DIVISION



CHIEF FINANCE OFFICER

Mr Damien Israel

BUSINESS IMPROVEMENT AND ASSURANCE DIVISION

COMMERCIAL DEVELOPMENTS UNIT

INFORMATION MANAGEMENT AND TECHNOLOGY SERVICES DIVISION

FINANCIAL SERVICES DIVISION

PRINT SERVICES

\*As at 31 Dec 2014

# TREADING THE **WORLD STAGE**

Throughout 2014 UOW strengthened its learning, research and industry ties. The University has a strong international focus and reputation, and attracts close to 6,000 international students each year to study at its Australian campuses. Long-standing formal agreements with more than 300 institutions in more than 40 countries provide opportunities for students to gain a UOW degree in their home country.





### **CONNECTIONS WITH INDIA**

In September Vice-Chancellor Professor Paul Wellings visited India with Prime Minister Tony Abbott as part of the Australia: Open for business delegation to further strengthen UOW's connections with India.

Professor Wellings and UOW Brand Ambassador for India Adam Gilchrist arrived in India on 4 September for talks with senior Indian government and industry officials and to promote UOW as a destination for Indian students.

In 2014 UOW had 441 Indian students studying at UOW in Australia and 1,125 at UOW in Dubai.

UOW has a suite of academic and research partnerships with Indian universities and academic institutions. including the Indian Institute of Technology in Kharagpur and Mumbai, the University of Calcutta, University of Burdwan and the Pandit Deendayal Petroleum University in Ghandinagar.

The University has signed a Memorandum of Understanding to help form a Centre for Mining Excellence in the Indian state of Gujarat and has key industry links with major players in India's IT industry including IBM Research and Infosys.

An agreement with India's Council for Scientific and Industrial Research (CSIR) will help establish a CSIR research centre at UOW's Innovation Campus in North Wollongong.



In November a delegation visited China to build research collaborations with the country's largest steel manufacturer, Baosteel.

The Baosteel Research Institute - the second-largest steel producer in the world has been undertaking research and development work with UOW researchers since 2007.

Delegates explored further research collaboration opportunities and the future plan for the Baosteel-Australia Joint Research and Development Centre (BAJC), a \$25 million five-year venture, involving UOW and three other Australian universities (Queensland, Monash and UNSW). UOW has so far secured six research projects under the BAJC.

The UOW delegates also visited Beihang University in Beijing to establish a Joint Research Centre between the two institutions.





### **HONG KONG ALLIANCE**

UOW is assuming stewardship and governance of a community college in Hong Kong, strengthening its position as a global higher education provider in North-East Asia.

The Council of City University of Hong Kong (CityU) approved the proposal for the Community College of City University (CCCU) to form a strategic alliance with UOW, under which UOW will assume stewardship and governance of the notfor-profit college and enter into a five-year transitional period.

CCCU is recognised as a premier college in Hong Kong providing quality tertiary education for nearly 6,000 students. It offers a wide range of Associate Degree (AD) programs and International Language Proficiency Tests with preparatory courses.

#### **KOREA PARTNERSHIPS**

Revolutionary soft robotic systems, like those needed to build a prosthetic hand with the dexterity of a human hand, will be developed through a formal partnership between Hanyang University and UOW's Australian Research Council Centre of Excellence for Electromaterials Science (ACES).

The partnership, celebrated in October 2014 at the Australian Embassy in Korea, consolidates a 20-year research alliance as part of the Australian Government's \$25 million investment in ACES.

The formal partnership with Hanyang University, and ongoing research ties with other leading Korean institutions, is already producing significant findings in the area of new materials development for artificial muscles and biofuel cells.

In addition to Hanyang University, ACES has strong research links with Hanbat University, with whom an international postgraduate degree in electromaterials science is being developed.

Malaysian students visited UOW in September.

## MALAYSIAN STUDENTS VISIT UOW'S NERVE CENTRE

Forty-eight students studying UOW courses in Malaysia joined a study trip to Wollongong in September.

The Malaysian students studying UOW courses at INTI International University and College in Subang Jaya and Penang spent a week attending lectures and cultural events during a study tour at Wollongong.

While in Wollongong, the group of 48 students attended lectures for the degree they are undertaking in their home country.

More than 1,200 students are currently undertaking UOW degrees in Malaysia thanks to UOW's partnership with INTI International University and Colleges.

# NEW COLOMBO PLAN SUCCESSES

UOW achieved notable successes under the New Colombo Plan during 2014.

In May, the first group of Australian students to visit Hong Kong under the New Colombo Plan set off for a one-week visit. Fifteen students from the School of Education visited the Hong Kong Institute of Education (HKIEd).

The UOW undergraduates participated in a research project with students at HKIEd and also collaborated with local schools.

Larissa Jenkins became the first student of teacher education at UOW to gain a full semester in an Asian country as one of only approximately 40 recipients of the scholarship which provides up to \$67,000. Civil engineering student Thomas Wilkinson will undertake his study at the Nanyang Technological University in



From left - Thomas Wilkinson, Professor Wilma Vialle from the School of Education and Larissa Jenkins

Singapore. He is looking into a potential research placement at Nanyang Technological University after he has completed his exchange semester.

In late 2014 UOW was successful in attracting \$322,300 of Department of Foreign Affairs and Trade student mobility funding as part of the 2015 New Colombo Plan and had been successful in securing three out of 69 New Colombo Plan scholarships for 2015. The successful scholars were invited to attend a high level awards dinner hosted by the Minister for Foreign Affairs in Canberra on 2 December.

Two of the recipients were also acknowledged as New Colombo Plan Fellows. Fellows are awarded to the top ranked candidate for each host location in the Indo-Pacific. UOW was one of only four universities to receive two fellowships out of the total 17 awarded.

The Australian Government launched the New Colombo Plan pilot scheme in late 2013 to enhance educational cooperation with Asia-Pacific countries.

### INDIGENOUS TRAUMA RECOVERY PROGRAM



Deborah Hocking

America's Massachusetts General Hospital (MGH) has partnered with UOW to deliver an Indigenous Trauma Recovery Program.

The third oldest general hospital in the United States and one of the major teaching hospitals affiliated with Harvard University chose UOW, recognising its leadership in First People's health.

In March, Debra Hocking from UOW's School of Medicine was contacted by Richard Mollica, the Director of the Harvard Program in Refugee Trauma at MGH and Professor of Psychiatry at Harvard Medical School.

Professor Mollica is recognised as a leader in research, clinical work and training in the treatment and rehabilitation of traumatised people and their communities.

He visited Australian Aboriginal communities, including communities in the Northern Territory and New South Wales, to examine the incidence of trauma. Professor Mollica found an alarming amount of mental trauma resulting from colonisation processes and the government policies which affected, and still affect, the lives of Aboriginal people in Australia.

On his return to Boston, he undertook extensive enquiries across Australia with a view to establishing a new joint trauma recovery program which could integrate Western medicine and primary health care with culturally valid and scientifically effective approaches to Australia's Indigenous communities.

Ms Hocking will be the Australian coordinator for a new Harvard Global Indigenous Trauma Recovery program, the first program of its kind in Australia, It will be offered from July 2015.



### PETA JAKARTA: SMART WAY TO HELP PEOPLE OF JAKARTA

A research team harnessing the power of social media to map floods in the Indonesian capital city Jakarta was chosen to take part in a pilot project that aims to give researchers free and easy access to Twitter's dataset.

About 1,300 proposals were submitted by research groups from more than 60 countries following Twitter's initial call for proposals. UOW and five other research institutions were successful.

UOW's PetaJakarta project is a webbased platform used to harness the power of social media to gather, sort, and display information about flooding in real time. PetaJakarta runs on the open source software CogniCity, a "GeoSocial Intelligence framework" developed at the SMART Infrastructure Facility.

The software allows data to be collected and disseminated by community members through their location-enabled mobile devices. Ultimately, the research team is aiming to use social media data to increase their capacity to understand the resilience of cities to both extreme

weather events and long-term infrastructure transformation.

Researchers hope that CogniCity will be adopted in other parts of the world with a high concentration of social media users by governments and citizen-led groups wanting to understand and address issues such as transport and traffic congestion, weather emergencies, waste or sewage removal, elections and governance.

PetaJakarta was officially launched in Wollongong on 29 October. From November 2014, the PetaJakarta team began work with the Jakarta Disaster Management Agency (BPDP DKI Jakarta) to map floods across the city during monsoon season. A project launch was also held in Jakarta on 2 December.

# V-C DELIVERS HIGHER EDUCATION POLICY LECTURE IN LONDON

Vice-Chancellor Professor Paul Wellings had the honour of being the first Vice-Chancellor from an Australian university to deliver a Higher Education Policy Institute (HEPI) Lecture.

Professor Wellings examined the organisation and key features of the Anglo-Australian higher education systems in a wide-ranging talk to the independent

policy think tank titled, 'The Architecture and the Plumbing: What features do the higher education systems in the UK and Australia have in common?'The lecture was delivered at Australia House in London on 26 November.

HEPI was established in 2002 to influence the higher education policy debate with evidence.

# OUR GROWING COMMUNITY OF 125,000 ALUMNI

UOW strongly values its 125,000 global alumni community located in 160 countries and continually strives to keep them connected with each other and the University as a whole.

The University fosters ongoing engagement with alumni by communicating opportunities to stay involved or give back; offer tailored engagement programs and recognise and celebrate the achievements of various alumni.

#### **HIGHLIGHTS FOR 2014**

- The University interacted with 51 per cent of its alumni base and more than 2.150 attended alumni events.
- More than 700 alumni in countries such as Hong Kong, Singapore, Malaysia and the United States attended UOW alumni events in 2014, as part of offshore engagement. The number of international UOW alumni Chapters grew from two to four.
- Notable alumni provided valuable assistance in advancing the priorities of the University through service, leadership, advocacy and philanthropy. Alumni showed their support for the University, including contributing to the \$5,575,000 made in donations and bequests in 2014,

- along with individual supporters and organisations. Alumni acted as presenters, mentors, employers, facilitators and ambassadors for UOW both here and aboard. Leaders Dinners were held with alumni in the fields of Marketing and Communications and Health and alumni contributed to the UOW Curriculum Transformation Project.
- In April 2014, 232 students graduated from UOW information technology (IT) degrees at the Singapore Institute of Management (SIM) and more than 90 students graduated from commerce and IT degrees from INTI Subang Jaya. Another 61 students graduated from a Bachelor of Commerce degree at INTI Penang, becoming the first group of UOW graduates from this campus.
- UOW increased its communication through social media, including a growth for LinkedIn of 74 per cent, Facebook 40 per cent and the launch of Twitter and Instagram for UOW alumni.





Vice-Chancellor Professor Paul Wellings in New York City

#### **UOW USA FOUNDATION**

The University of Wollongong has taken the next step toward strengthening its international presence with the creation of the UOW USA Foundation. The Foundation's first board meeting was held in New York City on 17 September and chaired by Vice-Chancellor Professor Paul Wellings. The establishment of the foundation is representative of the University's commitment to having a strong and sustainable presence in North America. There are about 3,000 exchange graduates and 3,000 full graduates from UOW currently living and working in the US.

#### **2014 HONORARY DOCTORATES**

The University conferred Honorary Doctorates on five outstanding individuals in 2014 who demonstrate strong links to Wollongong:

- John Borghetti, the CEO and Managing Director of the Virgin Australia Group of Airlines, was awarded a Doctors of Laws (honoris causa)
- Chemical engineer Professor
   Jinghai Li was awarded a Doctor of
   Science (honoris causa)
- Teacher, poet and justice advocate
   Aunty Barbara Nicholson was awarded a Doctor of Laws
   (honoris causa)
- Tim Ellis, the former CEO of the Accelerator Centre in Waterloo, Canada, and President of the Canadian Association of Business Incubation, was awarded a Doctor of Science (honoris causa)
- UOW Alumna Lynne Williams,
   Director and CEO of the National
   Institute for Dramatic Art (NIDA) was
   awarded a Doctor of Letters
   (honoris causa)

#### 2014 ALUMNI AWARD WINNERS

The University recognised and celebrated the outstanding personal and professional achievements of the following three graduates in 2014:

was the winner of the Outstanding Alumni Award. She has worked tirelessly to build the capacity of the people of Bhutan to achieve a just, fair and prosperous society in times of great change and challenges. In 1994, Wangmo travelled from the Himalayan Kingdom of Bhutan to Wollongong to begin a degree in mechanical engineering. She was one of the first Bhutanese students to complete their university education in Australia.



Tashi Wangmo

- of the Young Alumni Award. A graduate of UOW's School of Medicine. Teena is currently a Junior Doctor at Tamworth Rural Referral Hospital. She plans to become a rural generalist a doctor that provides primary and continuing care at the office and on the hospital ward—with specialist skills in obstetrics. At the age of 26, Teena's CV includes a list of 'extracurricular involvements' almost a page long; evidence of a good-natured and organised young professional.
- Grahame Gould was the winner
   of the Community Service Alumni
   Award. A willingness to explore
   new ways of engaging with the
   community is a trait that many
   have recognised in Grahame who is
   Director of Lifeline South Coast.



# OPEN DAY **REIGNITED**

UOW led the Open Day season among NSW's universities when it opened its doors to over 5,000 potential students and their families on Saturday August 16.

It was the first time since the late 1990s that UOW held an Open Day having previously run Information Evenings and Discovery Days for high school students. Discovery Days are still being conducted.

Visitors streamed into the University from a range of local, Sydney and regional areas.

Many of those attending were high school students who came to UOW as part of 'Discovery Days' in February 2014 and returned bringing their families to show them where they may possibly be studying and living. Joining them on the day were also be a number of mature aged students who gain entry to university via direct admission.

Students were able to attend a range of campus tours and information sessions showing them what's on offer, learn about the chance of gaining Early Admission and scholarship opportunities, hear about residential spaces, find out about chances to study overseas and what possible careers will follow university life.

A special information session was also devoted to parents of students. Residential colleges, the Library, science laboratories, lecture rooms and the University Recreation and Aquatic Centre were all open for inspection.

UOW's Sydney Business School held its Open Day at its Circular Quay campus on Saturday 30 August.





### ANZAC SCHOLARSHIPS MARK CENTENARY

One hundred years ago, 111 young men from Balgownie fought on the other side of the world to secure Australia's freedom.

Not all of them came back, but those that did made a lasting impression on the world and especially on the Illawarra.

To commemorate their sacrifice, two UOW students will have the opportunity of a three-year scholarship to support them through their undergraduate degree.

As a mark of remembrance for the 100th anniversary of the declaration of WWI on August 4 2014, UOW and the Illawarra Centenary Advisory Committee have created the Illawarra Centenary of ANZAC Scholarships.

The scholarships, worth \$5,000 each year for three years, will be open to students who begin undergraduate studies in 2015 and who are direct descendants of Australian or New Zealand WWI veterans or have served in the Australian Defence Force.

UOW and the Illawarra Centenary Advisory Committee are working to secure a \$250,000 endowment fund to ensure the ANZAC scholarships continue into the future.

### STEVEN SEES GIVING BACK AS GREATEST GIFT



Steven Bell

## Steven Bell is a firm believer in the notion of Noblesse Oblige.

"The modern day translation is it's about the old hand up rather than hand out," Steven says.

"I've been lucky, and worked hard, but there is also a thing about giving back."

Steven is one of UOW's longest supporters, making his first donation in 2003 when the University officially started seeking support for student scholarships and research.

As a UOW alumnus and father of four, Steven knows the gift of an education is one of the most inspiring and enduring anyone can receive and he is passionate about contributing to UOW. Steven's own university experience came later than many of his friends. After moving to Wollongong from Victoria in 1979 to work at Lysaghts, he took the opportunity to complete Year 12 at night school and apply to study maths, science and computing at UOW.

"It makes sense to contribute to a university that can change lives. UOW gave me a chance to change my life and obtain something that was irreplaceable. It was the key to do things I could never have done without that piece of paper."

# OPENING THE PAGES OF ILLAWARRA HISTORY

When the UOW Librarian, Margie Jantti, first laid eyes on the book that now takes pride of place among the University's rare book collection it was not in good shape.

But Ms Jantti could see its beauty and research value and knew the anonymous donation was something to treasure.

The book is a first edition of 'The Voyage of Governor Phillip to Botany Bay: with an account of the establishment of the colonies of Port Jackson and Norfolk Island' which was printed in London by John Stockdale in 1789.

"We have sourced some auction catalogues and after looking through them I found that on the market, in excellent condition, this book was valued at around \$25,000," Ms Jantti said.

"I anticipated that through thoughtful restoration, the donated volume, in monetary terms could be worth upwards of \$10,000."

The library commissioned award-winning book restorer, German trained Barbara Schmelzer, to bring the book back to life.

The restoration cost around \$6,000 but the book is now worth more than its rebirthing costs and is a gem in the library's archive and rare book collection.





# TACKLING COMPLEX WORLD PROBLEMS

Globally ranked as one of Australia's best modern universities, UOW in 2014 launched a unique research program that brings together world-class expertise in a bid to offer solutions to complex world problems. Already in the top 2 per cent of universities in the world, UOW lifted its overall ranking performance with one of the most significant achievements in 2014 being a 10 per cent lift in the University's citations reflecting the quality of UOW's overall research.

# RATING BOOST IN FINAL MAJOR RANKING FOR 2014

UOW jumped 16 spots in The Times Higher Education (THE) World University Rankings, released in October 2014.

The University was ranked at 282 in the 276-300 band – compared to its 298 spot in the Times' rankings in 2013.

UOW Vice-Chancellor Professor Paul Wellings said that one of the significant achievements made over the past 12 months has been the 10 per cent lift in UOW's citations reflecting the quality of UOW's research.

"This basically refers to how many other people globally are using our researchers' work for their various purposes," he said.

A ranking of 282 means that UOW has further consolidated its place in the top 2 per cent of universities in the world.

The World University Rankings were the final major rankings for 2014 and follow on from the recent QS World University Rankings, which also confirmed UOW's spot in the top 2 per cent of universities world-wide.

## UNITING BRIGHT MINDS

A unique research program that brings together worldclass expertise in a bid to offer solutions to complex world problems was launched mid year in Canberra.

Through the Global Challenges Program, researchers from a variety of disciplines will collaborate to problem-solve issues having an impact locally, nationally and internationally, including the ageing population, transforming traditional manufacturing bases through innovative technologies, and better sustaining our coastal and marine zones.

The Global Challenges Program is designed to encourage and develop creative and community-engaged research that will help drive social, economic, and cultural change in our region, and will be translatable across the globe.

Director of the Global Challenges Program is Professor Chris Gibson from UOW's Department of Geography and Sustainable Communities.





## NATURE REPORT FINDS OZONE-DEPLETING CHEMICAL ON THE RISE

A report published in Nature in November, authored by an international team of scientists, including three atmospheric chemists from UOW, found an unexpected increase in the amount of hydrogen chloride in the Northern hemisphere stratosphere since 2007. Hydrogen chloride releases chlorine in the stratosphere, leading directly to ozone depletion.

Director of UOW's Centre for Atmospheric Chemistry, Professor David Griffith, who co-authored the report, said the increase was a result of a temporary but prolonged anomaly in atmospheric circulation.

The findings are based on measurements by a network with ground-based remote sensing stations at a number of locations around the world, including one at UOW, which has been in operation since 1996.

Professor Griffith, in conjunction with his colleagues at UOW, Dr Nicholas Jones and Dr Clare Murphy, analysed these measurements, which when combined with satellite observations and model simulations led to the conclusion that while the chlorine concentrations in the Northern hemisphere are on the rise, those in the Southern Hemisphere are continuing to decrease, as expected in line with the Montreal Protocol.

However, they warned that the recovery of ozone-depleting chemicals in the atmosphere is a slow process and will take many decades.

"During this time the ozone layer remains vulnerable," Professor Griffith said.

The Montreal Protocol is an international treaty for the protection of the ozone layer that banned the production of major ozone-depleting substances worldwide. The large ozone loss over Antarctica was the key observation that stimulated its definition and signing in 1987.

# RISING STARS SHARE IN ARC FUNDING

The range of funding from the Australian Research Council (ARC) in 2014 across all the disciplines at UOW reinforced the breadth and depth of research across the University. And UOW's rising research stars have shared in the funding for projects of critical importance to Australia.

## FOURTH LAUREATE **FELLOW FOR UOW**

Professor Antoine van Oijen, an expert from the Netherlands in the field of single-molecule biophysics, was named an Australian Research Council Australian Laureate Fellow in a national program to attract and retain world-class researchers.

Professor van Oijen was one of 16 Laureate Fellows announced by the Federal Government in August.

His Fellowship, titled "Under the hood: single-molecule studies of multi-protein machines", has brought \$2.9 million of ARC funding to UOW for the next five years.

Professor van Oijen has developed biophysical tools to study important molecular processes such as DNA replication, viral fusion and membrane transport. He has been a research collaborator with UOW's Professor Nick Dixon for the past 11 years, focusing



Professor van Oijen

on developing methods to visualise the copying of individual DNA molecules in real time using the assembled components of the DNA copying machine from bacteria.

Professor van Oijen will develop Australian biophysical research at UOW's Illawarra Health and Medical Research Institute (IHMRI) and build on his existing collaboration with Professor Dixon in the Centre for Medical and Molecular Bioscience.

Professor van Oijen joins Distinguished Professors Lesley Head, Gordon Wallace and Richard (Bert) Roberts, as the fourth UOW researcher to be awarded this prestigious Fellowship.

## \$5.39 MILLION FOR ARC FUTURE FELLOWSHIPS SCHEME...

Rising research stars received more than \$5.39 million as part of ARC Future Fellowships scheme announced in July 2014.

Seven UOW academics were named among the nation's Future Fellows, with UOW ranking third nationally (relative to size) and placing eighth for total funding awarded.

UOW's Centre for Archaeological Science (CAS), which uses modern scientific techniques to answer fundamental questions about past human life and activities, enjoyed outstanding success with three new Future Fellows hailing from the group



CAS shell expert Dr Katherine Szabó was awarded more than \$800,000 over four years to help improve understanding of Melanesian societies and their transformations over time.

"Shell money is critical in customary exchanges and still has value as legal tender in the Solomon Islands, so it's in Australia's interest to understand how such a different approach to economics works in one of our nearest neighbours," Dr Szabó said.

Dr Szabó shared the honour of being named a Future Fellow with CAS colleagues Associate Professor Benjamin Marwick (currently based at the University of Washington in Seattle) and Dr Bo Li, who joined UOW in 2012 on a Vice-Chancellor's Postdoctoral Fellowship.

CAS Director and ARC Australian Laureate Fellow Professor Richard (Bert) Roberts said the work of the new Fellows underscores the importance of ongoing archaeological projects in mainland and island Southeast Asia.



### ...AND DISCIPLINES ACROSS THE BOARD SHARE IN FOLLOW-UP ARC ANNOUNCEMENT

Projects to boost Indigenous health and examine the history of IVF, build resilient communities after bushfire disasters and develop radar-imaging techniques to 'see' through walls were among UOW research projects funded by the Australian Research Council (ARC) announced in November 2014.

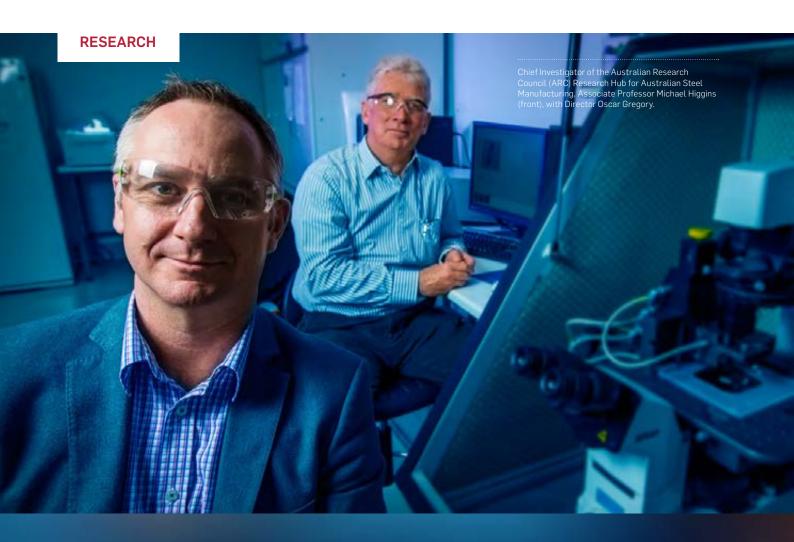
UOW received 17 Discovery projects, five Discovery Early Career Researcher (DECRA) awards, one Linkage Infrastructure award, and a Discovery Indigenous grant totalling \$8.9 million.

"This year the ARC has invested in 24 projects across all of our disciplines, reinforcing the breadth and depth of research in our faculties and institutes," Deputy Vice-Chancellor (Research), Professor Judy Raper said.

Professor of Indigenous Health Kathleen Clapham, from the Australian Health Services Research Institute in the Faculty of Business, was awarded a \$317,000 Discovery Indigenous grant to determine cultural appropriateness of methods used in Aboriginal health services research.

The project will examine the perspectives of health services researchers, Aboriginal consumers and policy-makers to develop a framework for appraising, designing and undertaking research in the context of Aboriginal health service delivery.

Enjoying the largest share of UOW's Discovery grant funding was the Faculty of Engineering and Information Sciences (EIS) receiving funding for nine projects worth \$2.98 million, with four of those projects awarded to the School of Mathematics and Applied Statistics.



# RESEARCH HUB LAUNCH IN CANBERRA

A research hub bringing together the best and brightest scientists and engineers from Australia's steel manufacturers and research institutions to drive industry innovation and improve global competitiveness was launched in Canberra in September.

The Australian Research Council (ARC) Research Hub for Australian Steel Manufacturing, based at UOW, will embark on research and development programs that will address manufacturing techniques and processes; innovation in new products; and best-practice pathways for bringing new ideas to market.

The hub was officially launched by The Hon Ian Macfarlane MP, Minister for Industry, at Parliament House in Canberra.

Mr Macfarlane said: "The Australian Government is preparing a National Industry Investment and Competitiveness Agenda to set the superstructure for industry growth, in particular to encourage greater collaboration between business and researchers.

"This collaboration is essential to ensuring Australia's competitiveness in global markets and in new industries focused on sophisticated and high value-added manufacturing. Our focus must be on our areas of competitive advantage where Australia has an edge over our competitors."

The steel industry employs around 90,000 people and adds more than \$8.7 billion value to the economy. The hub will be supported by cash and in-kind industry and university investment of more than \$17 million and ARC funding of \$5 million over five years.



Officially launching the Steel Research Hub were Director Oscar Gregory, ARC CEO Professor Aidan Byrne, UOW Deputy Vice-Chancellor (Research) Professor Judy Raper, Minister for Industry The Hon Ian Macfarlane MP and BlueScope Steel General Manager Manufacturing Mr John Nowlan. Photo: Melissa Flanagan

Supporting partners in the research hub include Arrium, Bisalloy Steels, Cox Architecture, Australian Steel Institute, Lysaght, University of Queensland, University of NSW, University of Newcastle, Swinburne University of Technology and RMIT.

UOW Deputy Vice-Chancellor (Research) Professor Judy Raper said UOW's strong historic links with the steel industry put it in a prime position to drive the national industry.



## DISTINGUISHED PROFESSOR NOEL CRESSIE AWARDED PITMAN MEDAL

Distinguished Professor Noel Cressie\* was awarded the 2014 Pitman Medal at a ceremony in July at the 2014 Australian Statistical Conference in Sydney.

The Pitman Medal, which is awarded annually by the Statistical Society of Australia, recognises outstanding achievements and contributions to the field of statistics.

Professor Cressie, Director of the Centre for Environmental Informatics in the National Institute for Applied Statistics Research Australia (NIASRA), is an eminent researcher with a record of developing innovative methods in statistical methodology and applied statistics who uses these methods to solve substantial scientific problems. Consequently, Professor Cressie's work has had a positive impact on a wide range of disciplines and applications, especially in the environmental sciences.

From the growth of the ozone hole over Antarctica to the dynamics of influenza epidemics in Scotland to the analysis of diverse and massive remote sensing data, Professor Cressie has developed innovative statistical methods for studying almost anything and everything.

Professor Cressie has received many other awards, including the highly prestigious 2009 R.A. Fisher Award Lecture, which is awarded by the international Committee of Presidents of Statistical Societies (COPSS). He is among the elite group of the Thomson Reuters Institute for Scientific Information's (ISI) Highly Cited mathematical scientists.

\*Noel Cressie is one of seven Distinguished Professors announced by the Vice-Chancellor in 2014. The other recipients of the title are Nick Dixon, Shi Xue Dou, Lesley Head, Hua Liu, Bert Roberts and Gordon Wallace

# FIRST GROUP IN AUSTRALIA TO FABRICATE SILICENE

From smaller, faster computer chips to more practical and efficient solar cells through to improvements in medical technologies and vehicle and aircraft parts silicene, a two-dimensional form of silicon, may provide a powerful material for the future.

Silicene is similar to graphene in that it is a single-atom-thick and has the same honeycomb structure. Theoretical calculations have predicted that silicene would contain exciting properties that could be used in a range of applications. However, its complicated formation chemistry and physics makes the fabrication of this material to be extremely difficult.

In January 2014 it was announced that a team including Dr Yi Du, Dr Xun Xu, Dr Stefan Eilers, Dr. Germanas Peleckis, Professor Xiao Lin Wang and Professor Shi Xue Dou from the Institute for Superconducting and Electronic Materials (ISEM), located at UOW's Australian Institute for Innovative Materials facility, has successfully fabricated single-atom-layer silicene for the first time in Australia.

The research team is one of a small number of teams around the world who have successfully fabricated silicene. ISEM Director, Professor Shi Xue Dou said that being the first group to fabricate silicene in Australia was a tremendous breakthrough.

"Silicene is an exciting new material, rich in physics and chemistry sciences and possible applications, and it is fantastic that we have been able to fabricate it here," he said.





Budding Ideas, hosted by UOW's Research Services Office, celebrates the great work being done behind the University's office doors and lab benches. It features 10-minute talks by emerging researchers as well as a Q&A session.

The May session featured dietitian and public health expert, Dr Bridget Kelly, discussing 'Combating the fat food environment around us'; international policy consultant Dr Quentin Hanich, who presented his idea on preventing overfishing in the Pacific Ocean; water membrane technologist Associate Professor Long Nghiem, who discussed his innovative new system that captures toxic phosphorus from sewage waste and delivers clean water; and atmospheric chemist Dr Jenny Fisher, who is developing a modelling system to help combat climate change; and

neuroscientist Dr Justin Yerbury who spoke about finding a cure for Motor Neurone Disease, a devastating neurological disease that took the lives of four of his close family members.

The October program featured oral historian and documentary maker, Dr Siobhan McHugh discussing 'why audio is the new black'; applied microeconomist Associate Professor Peter Siminski on the topic of 'paint the town red'; materials scientist Dr Shahriar Hossain discussing 'powering next generation wind turbines'; clinical psychologist Dr Peter Kelly on 'improving the health of people living with a mental illness'; and biomedical scientist, Dr Lezanne Ooi, discussing 'how skin cells are changing the face of media research'.

Speakers at the Budding Ideas Forum included, from left to right: Associate Professor Peter Siminski, Dr Lezanne Ooi, Professor Aiden Sims, Dr Peter Kelly, Dr Siobhan McHugh and Dr Shahriar Hossain



# \$25 MILLION FOR SCIENCE RESEARCH AND INNOVATION IN THE ILLAWARRA

The new Australian Research Council Centre of Excellence for Electromaterials Science (ACES) officially received \$25 million in funding in July to make Wollongong the global headquarters of an international materials research effort.

In officially opening the new ACES, the Parliamentary Secretary to the Minister for Social Services and Senator for New South Wales Senator The Hon Concetta Fierravanti-Wells congratulated the ACES team and said she was "certain it would be another seven years of cuttingedge research at the centre".

ACES and its five international partner organisations will embark on an ambitious program that will take materials science research, training, commercialisation and engagement programs into new dimensions through to 2020.

The centre will build on more than a decade of internationally recognised fundamental research to fast track development of new industries and manufacturing opportunities around the next generation of batteries, solar cells and medical implants.

Including partner and associate investigators, the new centre will combine research strengths from across nine countries, bringing together leading experts in materials, modelling, fabrication and device development.

ACES outstanding research outcomes to date include the development of nanotube yarn to power implantable biomedical devices; the manipulation of fishing line to produce artificial muscles with super human strength; and the acceleration of 3D printing to deliver solutions to a number of medical challenges.

The new centre will support the ongoing development of new industries including the spin-out renewable energy company



PhD student Katharina Schirmer is developing a solution to heal injured nerves

AquaHydrex as it moves toward prototype manufacturing.

New education opportunities will be created through the commencement of a master degree in biofabrication in partnership with Australian and international institutions.

With the support of the Australian National Fabrication Facility (ANFF) and NSW Government funding, ACES will take advantage of advanced customised 3D fabrication equipment and engineering expertise to provide the transition from fundamental research to a workable 3D product.

# STUDENT SUCCESS AT HEART OF CURRICULUM TRANSFORMATION

The Curriculum Transformation Project (CTP), an ambitious four-year plan to build on and enhance UOW's national and international reputation for top quality teaching and learning, undertook a range of key steps during 2014.

Staying at the forefront of innovation ensuring there is a point of difference in relation to course offerings is a key driver for the University of Wollongong.

The University wants to place student success at the heart of the curriculum as part of a Curriculum Transformation Project (CTP), according to Deputy Vice-Chancellor (Education), Professor Eeva Leinonen.

UOW is already recognised nationally and internationally as a leader in teaching and learning innovation and student experience. Wollongong was ranked second in Australia in 2014 in terms of the number of national teaching citations awarded to its staff, with the University of Melbourne beating UOW by just one citation for first place.

The CTP themes and guiding principles were first presented by Professor Leinonen for discussion at Academic Senate in December 2013.

Professor Leinonen said during 2014 there has been widespread consultation with staff, students, future students, alumni and high school careers advisors to reach agreement on the proposed curriculum themes and principles.

The CTP team has been working in close liaison with its recently established Wollongong Academy of Tertiary Teaching and Learning Excellence (WATTLE) group.

By the end of 2018, all coursework programs will be reviewed and, where necessary, re-designed to incorporate the elements (themes, principles and transformative practices) of the UOW Curriculum Model.

Meanwhile, the Co-curricular Learning Opportunities and Recognition Project, which is part of the broader CTP, was established to develop a recognition framework for the learning experiences that students are engaged in outside of their formal academic coursework.

This project has been funded under the Student Services and Amenities Fee and is intending to implement the proposed framework in 2015.

The vision is to engage UOW students in challenging, transformative co-curricular experiences that contribute to their development as outstanding graduates who are equipped to make significant contributions to society and their future workplaces.



# LEARNING LABS EXPANDS ITS OUTREACH

The highly successful UOW 'Learning Labs' program operated in 2014 with a new expanded format. Sessions were held in January and July.

Due to a growing demand within the local community, the gifted and talented program for high school students was extended to include primary school students from Year 3 to Year 6.

The primary school program, called 'Early Learning Labs' was led by teachers with specialist training or a specific interest in gifted education.

Early Learning Labs proved to be extremely popular with all workshops full and many more students on waiting lists. Some of the workshops offered focused on debating, digital media, LEGO robotics, maths, music and Egyptian history.

The program, 'Learning Labs', for high achieving students in Years 7 to 10 continued again in 2014 and included workshops on the main campus as well as two new workshops held at the Innovation Campus. New workshops included those involving nanotechnology, an astronomy workshop, race car engineering and the latest in 3D printing.





### SPECIAL NATIONAL FELLOWSHIP TO INVESTIGATE HIGHER EDUCATION STANDARDS

UOW was awarded the only Higher Education Standards Panel Research Fellowship from the Office for Learning and Teaching (OLT) in 2014.

University Fellow, Emeritus Professor Christine Ewan, AM, was awarded the Research Fellowship, which carries a grant of \$310,000. Professor Ewan's fellowship is entitled: "National Consensus on Higher Education Standards in a Disaggregated Learning Environment".

The project aims to develop a national consensus, informed by existing national and international practice, on the ways in which institutions can demonstrate to themselves and TEQSA (Tertiary Education Quality Standards Agency) that their engagement in alternative and distributed delivery methods for award courses is compliant with the Higher Education Standards Framework.

Other OLT successes for UOW were:

## CITATIONS FOR OUTSTANDING CONTRIBUTIONS TO STUDENT LEARNING AWARDS:

- Dr Xiaoping Gao
- Dr Brad Stappenbelt
- Mr Ray Tolhurst
- Dr Karen Walton and Ms Meredith Kennedy (team)

#### **NATIONAL GRANTS (LEAD):**

**EXTENSION GRANT** 

Associate Professor Romy Lawson

### NATIONAL GRANTS (COLLABORATIVE):

INNOVATION AND DEVELOPMENT GRANT

- Sally Rogan for \$225,000 project led by the University of Tasmania
- Professor Frank Deane, Professor John Bushnell and Mr Mark Donovan for \$220,000 – project led by University of Western Sydney
- Dr Glennys O'Brien for \$217,000 project led by the University of Sydney

#### SEED GRANT

 Dr Lotte Latukefu for a Seed Grant for \$48,000 led by the University of Sydney



Professor Eeva Leinonen

Minister for Education, the Hon. Christopher Pyne, MP, asked the group to conduct a benchmark research study of world's best practice in initial teacher education programs. The advisory group has already begun reporting to the minister.

# DVC APPOINTED TO TEACHER EDUCATION ADVISORY GROUP

Deputy Vice-Chancellor (Education), Professor Eeva Leinonen, was appointed in early 2014 to join a group of eminent higher education and school experts to advise the Australian Government on improving teacher education.

The eight member Teacher Education Ministerial Advisory Group is undertaking extensive public and stakeholder consultation while focusing on three key areas:

- Pedagogical approaches: the ways teachers teach their students, and the different ways teaching and learning
- Subject content: how well teachers understand the content of subjects they are teaching.
- Professional experience: opportunities for pre-service teachers to put theory into practice through quality in-school learning experiences.



Fresh from a record-breaking year mentoring 380 Indigenous high school students across the region in 2013, the Australian Indigenous Mentoring Experience (AIME) program at UOW set out to reach 500 students in 2014.

AIME was established at UOW in 2008 to redress imbalance in high school completion rates between Indigenous and non-Indigenous students, by recruiting university students to give Indigenous students support, guidance and encouragement to complete Year 10 and Year 12 at high school and go on to some form of tertiary education.

Having started at six high schools in the Illawarra in 2008, UOW's AIME program is now at 15 schools in the Illawarra and 18 in the Shoalhaven and South Coast, where UOW has campuses at West Nowra, Batemans Bay and Bega.

The program has become so successful that 96.1 per cent of Indigenous students who participate in UOW's AIME program are progressing from Year 10 to Year 11 (traditionally a high drop-out point for Indigenous students) compared to the national non-Indigenous average of 93 per cent. It is almost 20 per cent higher than the national average for Indigenous students.

UOW Pro Vice-Chancellor (Inclusion and Outreach) Professor Paul Chandler, who is a long-standing director on AIME's national board, was instrumental in establishing AIME at UOW with Jake Trindorfer. Professor Chandler said UOW is recognised as the best practice benchmark for AIME programs.

"UOW has been the model program for AIME," Professor Chandler said. "From the start we made a commitment that we'd be here for the long run, and now we are expanding so that UOW becomes a major regional hub with major outreach."

AIME pairs university student mentors with Indigenous students from Years 9-12. The mentors connect with the mentees in a variety of ways, including a 13-week one-on-one program for an hour a week at UOW, squads of student tutors visiting high schools to connect with Indigenous students and assist them with their studies, and at afterschool homework centres.



### UOW AND WESTPAC SUPPORTING FEMALE STUDENTS IN TECHNOLOGY

Studying Information and Communications Technology (ICT) landed UOW graduate Veronica O'Gorman her "dream job" at the Reserve Bank of Australia.

The inaugural Westpac Bicentennial Foundation\* Young Technologists Scholarships, worth \$5,000 a year for up to five years, are awarded to six Year 12 students who have applied to study an undergraduate technology degree at UOW from 2015.

Bicentennial Foundation, Susan Bannigan, said scholarships would be awarded to local students with the passion to bring about change through cutting-edge technology and innovation.

It is hoped the UOW and Westpac partnership will help address the gender imbalance and lack of diversity among Australian technology graduates and build a highly skilled local talent pool of graduates with the potential to become tomorrow's innovators.

Women account for fewer than one in five domestic students enrolled in ICT degrees in Australian institutions and make up a similarly low proportion of the ICT workforce.

Veronica O'Gorman, a UOW IT graduate at the Reserve Bank of Australia, says women at RBA are offered equal opportunities to develop their skills and be considered for roles within the organisation.

UOW ICT graduate Veronica O'Gorman

In 2013 UOW had 2,580 ICT students enrolled, the second-highest number for a New South Wales University, and in the top five Australia-wide.

Associate Professor Katina Michael from UOW's School of Information Systems and Technology, said an ICT degree provided knowledge and skills that were applicable across a host of occupations.

<sup>\*</sup> As part of its approaching 200th anniversary year in 2017, Westpac in early April 2014 launched the Westpac Bicentennial Foundation. UOW was announced as a founding partner of the Foundation through the Young Technologist scholarship.



## LIFE-SAVING DRONE TAKES OUT INNOVATION COMPETITION

UOW PhD students Leo Stevens and Nicholas Roach are the brains behind the 'Guardian Drone', an invention that aims to provide a safer and faster way for lifesavers to assist swimmers in distress at sea.

They took out the top Innovation Works! prize that saw them awarded \$2,000 and a place in UOW's iAccelerate start-up initiative to further develop their prototype.

Innovation Works!, a collaboration between the Australian Institute for Innovative Materials and the Global Challenges Program, was a 10-week program that provided space, time and assistance to students to develop a prototype of a new product.

The drone drops a flotation device to swimmers in danger, providing a lifesaver with valuable time to reach the swimmer without putting their own life at risk.

Another team developed a hydraulic crane, powered by artificial muscles, which won joint first prize. Inventor, PhD student Danial Sangian, said the crane could be used as an educational tool in primary and high schools, to demonstrate how artificial muscles work and expose children to the possibilities of engineering.

ARC Centre of Excellence for Electromaterials Science third-year PhD student Joseph Giorgio was a finalist for his efforts in investigating how to embed electronic circuits, or RFID (radiofrequency identification), into cheaper materials, such as paper and cling wrap.

His research may spell the demise of product barcodes and he is also looking at preventing our smartphone batteries from running out of power at the worst possible time.

### INDIAN STUDENTS HUMBLED TO MEET THEIR 'GOD OF CRICKET'

It was one of those cricketing moments that would have put a satisfied smile on the face of the late Sir Donald Bradman.

Out near the hallowed grounds of Bradman Oval in Bowral Mumbai maestro Sachin Tendulkar, AM, greeted student Mohammed Shuja Ahmed Khan, selected as UOW's inaugural Bradman Scholarship holder.

The 19-year-old first year Civil Engineering student said he could not believe he was standing next to his Indian cricket idol. "It's a fantastic day for me to meet the 'God of Cricket' – if only I could do straight drives like Sachin I'd indeed be a very happy person," Shuja said.

Shuja's own cricketing speciality is as a medium-paced bowler with the University Blues.

UOW inaugurated the Bradman Scholarship in 2012 to honour Sir Donald who is widely regarded as the greatestever cricketer.

The scholarship will be awarded each year to an Indian student – male or female – who has completed secondary school and demonstrates a combination of academic, sporting, personal and social skills, as well as strong participation in cricket.

UOW combined as education partner with the Bradman Foundation, a charitable trust established in 1987 with the blessing of Sir Donald Bradman to promote cricket as a cultural and sporting force, to establish the scholarship.



Mohammed Shuja Ahmed Khan with Sachin Tendulkar





## RESTRUCTURE STREGTHENS TECHNOLOGY

The transformation of UOW's Information Technology Division involved the consolidation of information technology management and services into one centralised division named Information Management & Technology Services (IMTS). The realigned IMTS came with the appointment of a new Director, Fiona Rankin, to lead this consolidated and strengthened group.

The University is placing a greater emphasis on information management, enterprise solutions and technology innovation for students and staff. At the same time, it is establishing formalised partnerships and engagement with internal stakeholders and vendors; and strengthening project and service delivery, including strong program/project management capabilities.

## CONNECT LOUNGE: COLLABORATING WITHOUT PHYSICAL BOUNDARIES

Connect Lounge is a web conferencing solution that facilitates collaboration centred on content and enhanced communication, and provides an end-to-end service on virtually any device. The Adobe product has been adapted to work especially for UOW providing a rich digital experience with tools such as video conferencing, instant messaging, and webinars, and is an enabler for the sharing of documents, pictures and whiteboards. The University's success in teaching and learning, research and every day business means collaborating together, and with Connect Lounge it can achieve this anywhere, anytime, on any device. The solution contributes to a technology-rich teaching environment and student-centred learning by providing possibilities for student group members to collaborate when members are not co-located.

## EARLY START IT REQUIREMENTS & SUPPORT

The technology needs of the new Early Start Facility, which is scheduled to open in early 2015, have also been addressed. This has involved working closely with Early Start to determine the appropriate components for the technology bundles that were gifted to the Early Start Engagement Centres (ESECs), as well as input into the information and communication technologies being used in the Discovery Space. The technology bundles that were installed in more than 40 child care centres around NSW included electronic whiteboards, iPads, video conferencing units conferencing solution known as BlueJeans which will connect regional and remote communities to the UOW Early Start Facility.

## IT SUPPORT AND PROCUREMENT EXPANDS WITH SERVICENOW

The IT Support and Procurement program addresses the strategic objectives of delivering operational stability, improved service consistency and measurement and hence, improvement of the overall user experience. The first phase of this evolutionary program has been achieved by implementing the service management toolset, ServiceNow. Users now have the ability to log and track the status of their requests via a customer portal. They are able to instigate a real-time chat session with Service Desk staff, providing them with choices on how they want to interact with the Service Desk. This solution has also allowed UOW to automate paper based processes to improve efficiencies and provide a shopping cart experience for the procurement of IT software and hardware. The shopping cart experience has workflow capabilities to capture the approval and associated supporting information for audit purposes. Future phases will include the automation of more paper based processes across the business, a revamped customer portal and deployment to other UOW business units.

## EARLY ADMISSIONS PROCESSES STREAMLINED

The Early Admission project has attracted high achieving students to UOW by increasing the quality of engagement with HSC students, and provided a better service to the applicants through the Early Admissions website and online services. The project was successful in developing new functionality and accommodating the required changes to the Early Admissions system to support the 2014 work flow and processes. Ongoing system efficiencies will enable future gains to be realised through the provision of a robust platform for further systems development and increased utilisation and productivity benefits in UOW's faculties and administration.

## ENHANCED WORKPLACE PRINT MODEL \_\_\_\_\_

As part of a Green IT initiative, a new functionality to the UOW Workplace Print Model was introduced delivering secure-release print, copy & scan (Swipe2print). This delivers a follow-me print option where print jobs can be securely released with a registered access card from any Swipe2print enabled device. Initial results of the pilot are showing a 20% reduction in total print and copy clicks with the associated reduction in paper usage.

# HELPING REGION'S ECONOMIC RENEWAL

The University is playing a pivotal role in the transformation of the Illawarra's economic base. A clear example is the iAccelerate Centre, which will provide a permanent home at the Innovation Campus for the region's rapidly growing number of start up companies.

# OPPORTUNITY GROWING TO THRIVE IN THE ILLAWARRA

iAccelerate launched in 2012 and is designed to help spark and support innovation and entrepreneurs grow and thrive in a region that is undergoing radical economic transformation.

It consists of a unique set of programs based on the lean startup model and built around entrepreneurship, innovation and the ICT technology skills of UOW graduates.

During the past four years iAccelerate has built an entrepreneurship club with more than 800 participants; provides a series of workshops and lectures designed to address the critical business issues facing startups; and is currently providing an entrepreneurial working spaces capable of hosting 70 people building startups.

In 2014 iAccelerate entered into a fiveyear memorandum of understanding (MoU) with the Accelerator Centre (AC), in Waterloo, Canada, to provide programming and mentorship aimed at helping young technology companies and entrepreneurs achieve sustainable business growth in the Australian startup landscape. The Accelerator Centre team in Waterloo provides access to its educational programming and methodologies, as well as deepening the on-going knowledge sharing between the two hubs and each organisation's in-house team of mentors.

Since 2006, the Accelerator Centre has developed and nurtured more than 130 early-stage technology startups, creating more than 1,100 new jobs, generating more than CAN\$120 million in revenue, and attracting over CAN\$180 million in investment.

iAccelerate also launched a \$10 million seed fund to attract investors with a passion and commitment to the startup sector. In turn, the fund will provide investors with access to a unique pipeline of early stage business investment opportunities.

The under-representation of female participation in the innovation and startup economies around the world has been identified as a critical issue. iAccelerate is actively engaged in delivering deliberate gender balance within the innovation ecosystem with the aim to double the pipeline of successful startups.





# NEC AUSTRALIA'S \$25M INVESTMENT

Leading global technology solutions and services company NEC Australia signed an agreement with UOW in November that will trigger an investment of \$25 million in the region and the creation of more than 100 jobs.

The investment, involving a new corporate office at UOW's Innovation Campus, marks a major boost to existing capabilities and resources dedicated to serving customers in NSW.

NEC managing director Tetsuro Akagi was joined by The Hon John Ajaka MLC, Minister for Ageing, Disability Services and Minister for the Illawarra, as well as representatives from UOW, Wollongong City Council, Illawarra Business Chambers and NSW Trade & Investment for a ceremony to mark the signing of the lease.

Advantage Wollongong played a key role in facilitating the investment. Advantage Wollongong is a partnership between the NSW Government, UOW and Wollongong City Council that promotes Wollongong as a place to do business and invest, with the aim of creating jobs and bringing investment to the region.

As part of the Wollongong launch, NEC Australia also announced a new partnership with UOW that will include a graduate program to build Information and Communications Technology (ICT) careers in the region and encourage growth in the sector in regional NSW.

UOW is one of Australia's largest information and communications technology institutes with more than 2,500 students enrolled in 2014.

NEC Australia is a leading technology company, delivering a complete portfolio of ICT solutions and services to large enterprise, small business and government organisations.

NEW HOME FOR ILLAWARRA'S **ENTREPRENEURS** 

Construction on the Illawarra's first high-tech business incubator, and a home for startups at the UOW's Innovation Campus, began in April.

Minister for the Illawarra
The Hon John Ajaka joined
UOW Vice-Chancellor Professor
Paul Wellings to break ground on
the three-storey, 4,000 square metre
iAccelerate Centre.

The Centre will be a permanent home for a growing number of startup companies and features 'plug and go' expandable space for more than 280 entrepreneurs. iAccelerate will provide support, mentorship, professional services and access to seed funding for companies as they develop.

The Director of Innovation and Commercial Research at UOW and iAccelerate CEO, Ms Elizabeth Eastland, said that reaching the start point for construction was evidence of support to foster innovation from the University and State and Federal governments.



UOW VC Professor Paul Wellings (left) was joined by, from left, Member for Heathcote Lee Evans, Member for Kiama Gareth Ward, Minister for the Illawarra John Ajaka, Wollongong City Lord Mayor Councillor Gordon Bradbery and iAccelerate CEO Elizabeth Eastland to break ground on the new Centre.

# FLAGSHIP PROJECTS

In February the University Council unveiled plans for the University's physical growth when it approved the release of \$279 million of capital expenditure projects over the next five years.

Through 2014 the University successfully completed a number of flagship projects providing additional world-class research facilities.

## SBRC A WINDOW INTO THE **BUILDINGS OF TOMORROW**

**UOW's Sustainable Buildings** Research Centre (SBRC) was officially opened in August by Senator The Hon Eric Abetz. Leader of the Government in the Senate, Minister for Employment and Minister Assisting the Prime Minister for the Public Service.

SBRC will enable academia, industry and the community to work together to bring innovative ideas to life and tackle the great challenge of the rising cost of energy. The applied research at SBRC

that will improve the skill sets and economic opportunities for local companies and their employees.

SBRC received Federal Government funding of \$25.1 million via the Education Investment Fund. The building, designed by architects Cox Richardson, aims to be the first certified Living Building in Australia and the Illawarra's first 6 Star Green Star building.

Its environmentally-friendly features include: ultra-low energy consumption; a solar roof that produces more power than the building consumes; rainwater harvesting to ensure the building is net-zero water; sophisticated natural ventilation and indoor environmental quality features; extensive monitoring and building control systems to ensure it operates as efficiently as possible.

The SBRC team has already been recognised for innovative approaches to research and product development.

The combined UOW/TAFE project to retrofit a traditional Australian fibro home won the 2013 Solar Decathlon China – an international competition that challenges university teams to design, build and operate solar-powered houses that are energy-efficient, cost-effective and attractive.





Construction of the Sciences Teaching Facility (STF) will be completed in March 2015.

The \$33 million project will provide new undergraduate laboratories for Environmental Sciences, Biological Sciences and Chemistry, over three floors.

The facility will incorporate a student informal learning space on the ground floor, as well as a Technology Room and Higher Degree Research (HDR) areas.

The building will include a number of green initiatives, including strategies to minimise energy consumption through fresh air supply to fume cupboards, enhanced sun shading and insulation levels, mixed mode ventilation to student informal learning, and energy and water efficient fittings.

Image: Artist's impression of the Sciences Teaching Facility

# STAFF MOVE INTO **EARLY START FACILITY**

Staff began moving into the Early Start Facility, a \$44 million inter-disciplinary project based in the Faculty of Social Sciences at UOW, at the end of 2014.

Funding comprised \$31 million through the Federal Government's Education Investment Fund (EIF) plus a philanthropic gift of \$7 million from a private donor (the biggest single donation ever made to UOW), with UOW providing the balance.

The private donor, Founder and Director of the Abbott Foundation, Mr Christopher Abbott, AM, said in a supporting submission to the Government for the project that he has a "strong philosophical belief in the importance of encouraging children to develop an interest in learning at a very young age".

UOW Vice-Chancellor Professor Paul Wellings said the project will radically transform educational, health and social outcomes for children in regional, rural and remote communities.

UOW's Executive Director of Early Start and Pro Vice-Chancellor (Inclusion and Outreach), Professor Paul Chandler said: "This centre will be leading Australia in teaching, research and in community engagement in the early stages of life."

The Facility includes specialist teaching and research spaces, an Early Start Discovery Centre and the hub for Early Start Engagement Centres (ESECs). The Discovery Centre expects to draw 120,000 children and their families from across Australia a year.



The new Early Start Facility



## STUDENT ACCOMMODATION TRANSFORMATION

Student accommodation at UOW will undergo major expansion and transformation in a multi-million dollar deal that is the first of its kind in Australia.

The plans to increase the amount and quality of accommodation on offer, and to develop the Wollongong campus into a vibrant destination of choice for students, were unveiled in November as UOW finalised a unique agreement with a private sector partner.

UOW entered into a long-term licence agreement for its entire student accommodation portfolio with a private sector consortium, which will invest in two new on-campus residences. After demolition of existing older stock at Kooloobong Village and Campus East, this will take the number of beds the University can provide to students to nearly 2,700, by 2018.

The University will retain responsibility for the day-to-day operations of student accommodation. The consortium, Living + Learning Partners (L+LP) – whose lead partner is Balfour Beatty Investments – were granted a 39-year licence of the new and existing accommodation and provided

the University with a funding injection that will be used to invest in its core teaching and research endeavours.

The new accommodation will be built at the eastern end of Northfields Avenue and at the Kooloobong precinct at the western end of Northfields Avenue.

The partnership comes after the University sought expressions of interest from private partners in 2013, in response to increasing demand for accommodation from domestic and international students.

Meanwhile, Kooloobong Village celebrated its first birthday in March 2014.

Since the grand opening in 2013, Kooloobong Village has seen the arrival and departure of more than 1,000 students from more than 40 different countries.

The Village offers events and activities designed specifically against a wellbeing program model developed at Kooloobong.



Artist's impression of the new student



# RAISING THE BAR – CELEBRATING STAFF ACHIEVEMENTS

## VICE-CHANCELLOR HONOURS STAFF EXCELLENCE

Staff across all areas of UOW were recognised for their outstanding achievements at the annual Vice-Chancellor's awards ceremony during August 2014.

The evening ceremony, held at the University Hall, was attended by more than 300 guests including award recipients, staff members, family and friends.

Manager, Professional and Organisational Development Services, Lorraine Denny said: "These awards are a great way to showcase the work of the University community. It's a chance to formally recognise those, whether academic or professional services staff, who have made an impact in our University."

The Vice-Chancellor's Awards were presented in the following categories: Outstanding Service for Professional Services Staff; Marie Lewis Award (recognising the achievement of a member of professional services staff who is completing a degree at UOW); Rosemary Cooper Award (recognising professional services staff who have overcome significant barriers across the spectrum of diversity or who have had a significant role in supporting staff or students within this spectrum); Professional Services Staff Outstanding Contribution to Teaching and Learning; V-C's Award for Outstanding Contribution to Teaching and Learning and Faculty Awards for Outstanding

Contribution to Teaching and Learning;
Early Career Academic Award for
Outstanding Contribution to Teaching and
Learning; Sessional Tutor/Demonstrator
Award for Outstanding Contribution to
Teaching and Learning; Researcher of
the Year Award; Research Excellence
for Emerging Researchers; Outstanding
Contribution to UOW's Research Culture;
Excellence in Research Supervision;
Outstanding Achievement in Research
Partnerships; Interdisciplinary Research
Excellence; Outstanding Achievement
in Research Commercialisation; and
Excellence in Community Engagement.

Other staff were also presented with 25 year service awards.



Vice-Chancellor Professor Paul Wellings presenting an award to Professor Anatoly Rozenfeld for Outstanding Achievement in Research Commercialisation. Professor Rozenfeld also shared the Researcher of the Year Award.





# FORTY YEAR ASSOCIATION WITH UOW DRAWS TO A CLOSE

Senior Deputy Vice-Chancellor, Professor John Patterson, presented a 90-minute farewell lecture on 12 December 2014 marking the end of a 40-year association with the University of Wollongong.

During his long career at UOW Professor Patterson has seen many thousands of students – many of them the first generation of their families to attend university, and many of them the children of migrants who came to Australia to give their children a better chance in life – graduate and go on to forge successful careers.

Professor Patterson moved to Wollongong in 1974 to work as a PE lecturer at the Wollongong Institute of Education the year it changed from being Wollongong Teachers College.

He became a staff member of UOW when the University and Institute of Education merged in 1982. After completing a PhD at the University of Colorado in 1986, Professor Patterson began a steady climb up UOW's academic and executive ladder.

He was appointed Deputy Dean of Education in 1986 and Dean in 1993. In 2000 he became Dean of Health and Behavioural Sciences and in 2001 Deputy Vice-Chancellor (Operations). Since 2010 he was Senior Deputy Vice-Chancellor.

#### PROFESSORIAL PROMOTIONS

The following leading UOW academics were promoted in 2014, effective 1 January 2015:

David Ayre (Biological Sciences), Sue Bennett (Education), Salim Bouzerdoum (Electrical, Computer & Telecommunications Engineering), Ian Brown (Education), Louise D'Arcens (Humanities and Social Inquiry), Andy Davis (Biological Sciences), David Griffith (Chemistry), Valerie Harwood (Education), Garry Hoban (Education), Marc in het Panhuis (Science, Medicine and Health), Paul Keller (Chemistry), Huijun Li (Mechanical, Materials & Mechatronics), Brian Monaghan (Mechanical, Materials & Mechatronics), Long Nghiem (Civil Mining & Environmental Engineering), Allen Nutman (Earth & Environmental Sciences), Alexey Pan (Physics), Marie Ranson (Biological Sciences), Rajeev Sharma (Information Systems & Technology), Linda Tapsell (SMART Foods), Simon Ville (Humanities and Social Inquiry), Mark Wilson (Medicine), Chao Zhang (Physics), Minjie Zhang (Computer Science & Software Engineering) and Song-Ping **Zhu** (Mathematics & Applied Statistics).





## STRATEGIC AND SUSTAINABLE FINANCIAL MANAGEMENT

The University continues to maintain a focus on financial sustainability, reflected in a strong financial result for the year consistent with its strategy.

The operating result, along with a strong balance sheet and liquidity position, contributed to the reaffirmation during the year of the University's AA/A-1+ stable Standard and Poor's credit rating.

#### **UNDERLYING SURPLUS**

The headline operating surplus for 2014 for the consolidated entity was \$27M. This was achieved through income of \$617M offset by \$590M of operating expenditure. Excluding capital grants, depreciation, and abnormal items, the University consolidated entity achieved an underlying surplus of 6.3%. The University uses underlying surplus as a key indicator of sustainability and plans for a surplus greater than 6%.

The sound financial result for the year for the University reflects modest growth in operating expenses offset by steady growth in student tuition fees, whilst the UOW Enterprises (UOWE) subsidiary has delivered an outstanding financial result in support of the consolidated group.



Underlying surplus excluding capital grants, depreciation, and abnormal items

#### **KEY HIGHLIGHTS**

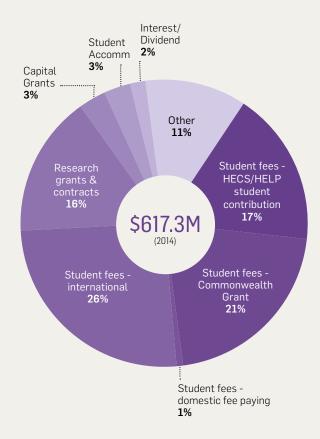
- Growth in domestic student revenue (2.3%) and international student revenue(on-shore and offshore) (8.7%);
- Modest growth in operating expenditure (6.0%), including employee expenses (4.8%);
- Finalisation of the Student Accommodation Expansion Project;
- Strong balance sheet and liquidity position, evidenced by maintenance of AA/A-1+ stable Standard and Poor's credit rating.

#### **SOURCES OF REVENUE**

The primary source of revenue for the University continues to be student fees (65% of revenue), with research related revenue also contributing strongly (16% of revenue). The revenue trends for 2014 are consistent with the University's expectations and trends over recent years.

Capital grants in 2014 related to the Commonwealth Government Education Investment Fund grant program for the Early Start Discovery Centre.

Other revenue includes donations and scholarships, facility user fees, student services and amenities fees, and other minor fees, charges, and contributions.

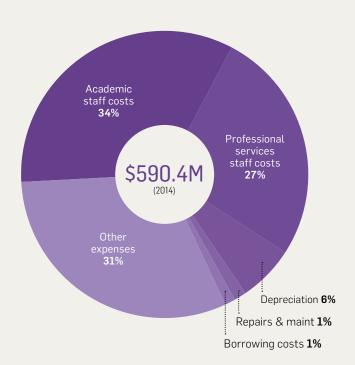


#### **SOURCES OF OPERATING EXPENDITURE**

Wages and salaries, at around 60% of total operating expenditre, are the largest component of University expenditure. Total employee costs grew 4.8% in 2014 compared to the prior year. Depreciation increased 8% reflecting the University's continuing investment in infrastructure.

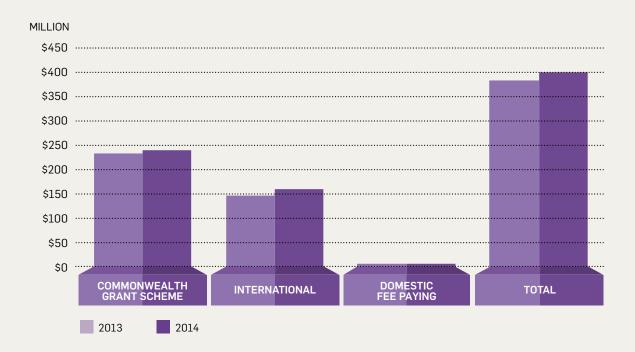
Borrowing Costs increased from \$5M to \$7M in accordance with the debt profile, with total University borrowings remaining stable during the year. The level of debt is within the constraints of the financial strategy and Standard and Poor's credit rating.

Other Expenses grew 7.9% over 2013, and includes a variety of categories including utilities, cleaning, computer maintenance and software, advertising and marketing, space and equipment rental, and scholarships.



#### STUDENT TUITION FEE REVENUE SOURCES

Student tuition fees generated a total of \$400M in 2014 compared to \$382M in 2013. Revenue from Commonwealth supported students contributed \$238M, an increase of 2.4% from \$232M in 2013. Revenue from International student fees (on-shore and off-shore) continued the return to stronger growth of the previous year with an increase of \$12.6M (8.7%) over the prior year. The primary driver of that growth was record enrolments at the UOW Dubai campus.

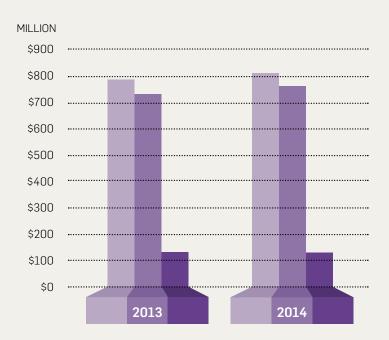


#### **FINANCIAL POSITION**

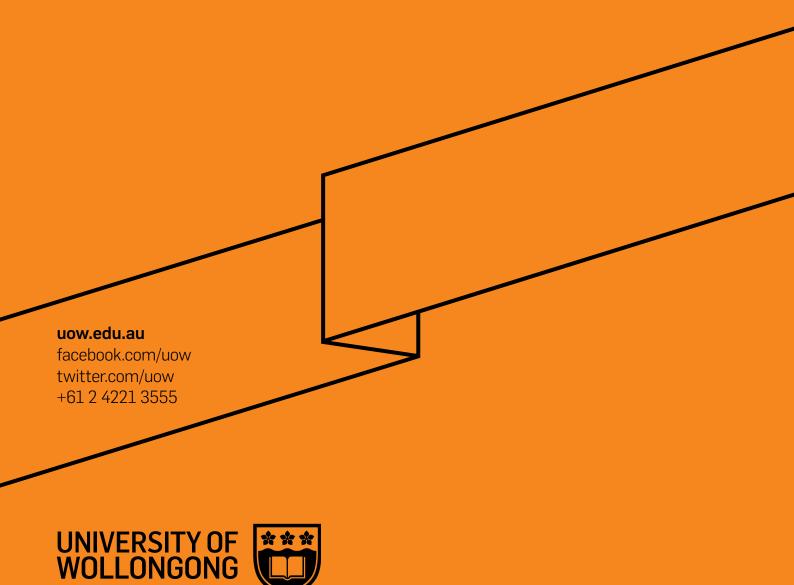
The net asset position (assets minus liabilities) of the University continued to grow reaching \$816M in 2014. The University has continued investment in infrastructure to support teaching and research activities. Property, Plant and Equipment, net of depreciation, increased 4% to \$762M in 2014 from \$732M in 2013.

Consistent with the University financial sustainability strategy, this has been achieved whilst maintaining sound cash and investment balances and stable debt levels.









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