The University of Wollongong is strongly focused on interdisciplinary research that has a real impact on our lives and contributes to solving global challenges. To achieve that, UOW’s key research institutes have developed strong partnerships and collaborations with government and non-government organisations, corporations, universities and research institutes in Australia and around the world.

Here are our key research groups, and their partners:

**STRATEGIC RESEARCH PRIORITY AREAS**

**Illawarra Health and Medical Research Institute:** Health authorities, area health service, hospitals and network of local clinicians.

**SMART Infrastructure Facility:** Government departments and authorities, transport authorities, industry and corporations.

**Australian Institute For Innovative Materials:** Incorporates the Intelligent Polymer Research Institute and the Institute for Superconducting and Electronic Materials, and their research partners (see below).

**UOW’S RESEARCH STRENGTHS**

**Australian Health Services Research Institute:** Government authorities and area health services, non-government organisations and other researchers in Australia and overseas.

**Centre for Archaeological Science:** Government and non-government organisations and corporations and other researchers in Australia and overseas.

**Centre for Health Initiatives:** Public health authorities, government departments and local councils.

**Centre for Medical Bioscience:** Research groups at Australian and international universities and hospitals, and government departments.

**Centre for Medical Radiation Physics:** ANSTO, the CSIRO, hospitals and extensive partnerships with collaborating medical radiation physics, cancer and health research institutes and organisations around the world, including NASA.

**Centre for Medicinal Chemistry:** Research colleagues at the Illawarra Health and Medical Research Institute.

**Centre for Statistical & Survey Methodology:** Australian Bureau of Statistics, government departments in Australia and overseas, information services and research institutes.

**Engineering manufacturing:** Industry partners and research institutes at other universities.

**Engineering Materials Institute:** BlueScope Steel and other manufacturers; university researchers in Australia and overseas.

**GeoQuEST Research Centre:** Interdisciplinary team from Faculties of Science and Engineering, working with government departments and agencies focusing on environmental and climate change research.

**Information & Communication Technology Research Institute:** Government organisations and corporations working in the ICT field.

**Institute for Conservation Biology and Environmental Management:** Government agencies, particularly rural fire services.

**Institute for Innovation in Business and Social Research:** Government agencies, tourism operators, welfare organisations, port authorities and other researchers in Australia and overseas.

**Institute for Mathematics and its Applications:** Government agencies and corporations.

**Institute for Social Transformation Research:** Other researchers in Australia and overseas.

**Institute for Transnational and Maritime Security:** Australian government departments and national maritime, law, security, crime prevention, counter-terrorism and fisheries authorities throughout the Asia Pacific region.

**Intelligent Polymer Research Institute/ARC Centre of Excellence in Electromaterials Science:** Medical bionics organisations such as the Bionic Ear Institute, hospitals, corporations, government departments, universities and other research institutes in Australia and around the world.

**Interdisciplinary Educational Research Institute:** State and federal governmental education and health departments, and university researchers in Australia and overseas.
Vice-Chancellor’s message:

PARTNERSHIPS CENTRAL TO OUR SUCCESS

In the 1960s, when the University of Wollongong was a small regional college, local industry funded academic staff to conduct a social research project into the problem of hidden female unemployment. The State Government of the day responded to these findings by creating a Wollongong development fund that made loans available to develop businesses that employed mainly women. At least 15 firms were established in the footwear and clothing industries and around 1500 women were employed.

Half a century later we live in a very different world. Those footwear and clothing manufacturers have either closed or moved offshore, and many of the region’s residents now work in high-tech industries that couldn’t have been imagined in the 1960s.

But what hasn’t changed is the impact of the University’s research. It is still making a difference, only these days the impact is felt not only around the Illawarra region, but also across Australia and around the world.

A critical element of much of this world-class research is collaboration with industry and community partners, and researchers at other institutions in Australia and overseas.

In 2008 UOW opened the first buildings on our Innovation Campus, a dedicated research and development precinct designed to foster collaboration between the University’s researchers and business and industry. Now corporations from Australia and overseas are establishing in Wollongong in order to collaborate with our researchers and tap into our graduates.

This brochure showcases some of our partnerships and collaborations, as well as UOW’s facilities and initiatives designed to enhance our connections with business and industry partners.

In 2012 a new international table in The Times Higher Education Supplement in the UK listed the world’s top 100 universities that had been established in the last 50 years. UOW, which became a fully independent university in 1975, was ranked 33rd in the world, and equal first in Australia. Our strong partnerships were a key part of our success, and they will be a vital part of our further development.

Professor Paul Wellings
Vice-Chancellor
INNOVATION CAMPUS

The Innovation Campus (iC) epitomises the University of Wollongong’s commitment to partnerships that connect its researchers with corporations and other institutions.

UOW established the research and commercial precinct on a 33-hectare site in North Wollongong, a few kilometres from UOW’s main campus, to drive partnerships and collaboration between its researchers and innovative corporations.

iC provides opportunities for commercial tenants like international mining engineering corporation Joy Global to co-locate with some of the University’s leading research organisations in state-of-the-art facilities, tapping into their research expertise and benefitting from access to UOW’s graduate talent pool.

Joy Global’s motivation for re-locating to the Innovation Campus is typical of the attraction the campus has for commercial tenants. When the company announced its move to iC Enterprise 1 in April 2012, it cited the opportunity to collaborate with the University’s engineering researchers as a key reason for the move.

Joy Australasia Managing Director Brad Neilson said the Innovation Campus provides the ideal combination of state-of-the-art commercial office space and the competitive advantage of collaboration with the University. “We were looking for premises that would allow us to consolidate a number of existing offices and undertake R&D, and the Innovation Campus presented the ideal solution,” Mr Neilson said. “In addition to fantastic office space, it gives us the opportunity to align with one of the most progressive
The University of Wollongong is establishing its own technology transfer operation to facilitate commercialisation of work undertaken by its researchers, in a move which underlines the increasing importance of the University’s research output.

The new operation replaces the seven-year commercial arrangement UOW had with UniQuest, a technology transfer company established by the University of Queensland.

UOW decided to reorganise its approach after a review of its strategies for commercialisation, intellectual property and knowledge exchange between its researchers and commercial organisations. This reflects UOW’s growth, as well as the increasing importance the University is placing on helping its researchers test the commercial potential of their discoveries.

Professor Judy Raper
Deputy Vice-Chancellor (Research)
SMART

The $62 million SMART Infrastructure Facility at the University of Wollongong is Australia’s only integrated infrastructure research, planning and training institute and one of the largest facilities of its kind in the world.

SMART stands for Simulation, Modelling, Analysis, Research and Teaching, and the facility was established with $35 million in Federal Government funding, $10 million from the NSW Government and $17 million from UOW.

The facility opened in 2011 with a mission to help governments and corporations deal in a scientific way with infrastructure challenges in the 21st century by providing the research, knowledge and tools required for executing evidence-based public policy and investment decision-making.

Up to 150 research staff and 200 higher postgraduate research student are involved with SMART’s research programs.

SMART is developing a new branch of research called ‘integrated infrastructure planning and management’. The approach is multidisciplinary and collaborative, and concerned with understanding infrastructure systems, and the interdependencies and interconnections that exist across energy, telecommunications, transport, water and social infrastructure.

The intention is to broaden the perspective of government and industry to approach infrastructure planning and procurement from a holistic, long-term planning basis.

SMART is highly integrated with industry and government across Australia. Its Advisory Council is chaired by Dr Ken Henry AC, a Special Advisor to the Prime Minister and former Secretary to the Australian Treasury, while board members include prominent corporate and government agency leaders from across Australia.

Main picture: The SMART Visualisation Wall plays an important role in demonstrating the research capabilities of the SMART Infrastructure Facility. The Wall is over five metres long and two metres high with four high brightness, high resolution Panasonic projectors. It is used to translate research through simulations, video, presentations or live stream as required. Inset: SMART Advisory Council Chairman Dr Ken Henry AC, formerly Australian Treasury Secretary (left) with SMART Infrastructure Facility CEO Garry Bowditch.
The University of Wollongong’s iAccelerate business incubator initiative has been designed to fast-track development of high-tech industries in the Illawarra.

iAccelerate is the essential cog of the Illawarra Innovation Ecosystem, which has been developed to take advantage of UOW having one of the largest IT undergraduate training and postgraduate research programs in Australia to expand Wollongong’s growing technology-based sector into a high-tech industry cluster that will help drive regional development.

iAccelerate is designed to increase the productive capacity of the Illawarra by up skilling and supporting start-up companies working in technology fields. It will deliver a ‘broadband economy’ by marrying UOW’s IT graduates with the National Broadband Network (NBN) rollout, and by leveraging technology into the region’s manufacturing and health industry base.

UOW has collaborated with key partners to establish StartPad, an office space in Wollongong designed to help technology-focused entrepreneurs to grow and develop ideas into successful businesses.

StartPad is a joint initiative between the University, Wollongong City Council, NSW Trade & Investment, Enterprise Connect and Regional Development Australia (RDA) Illawarra. It is also a key component of UOW’s iAccelerate initiative.

With initial funding of $50,000 from NSW Trade & Investment and Wollongong Council providing the office space in the CBD, StartPad provides start-up entrepreneurs with low-cost office accommodation, mentoring support, peer support and access to networks of people with ideas they would like to see developed into businesses.

UOW is a key member and supporter of ICT Illawarra (ICTI), a Wollongong-based cluster that represents the region’s burgeoning ICT sector.

UOW joined forces with State Government agency NSW Trade & Investment in 2009 to establish ICTI and help develop the sector in the region.

ICTI members range from professionals working in large multinational firms with offices in Wollongong, through to smaller start-up and locally grown companies. And with the growing importance of ICT in many organisations, ICTI is attracting professionals working in a diverse range of industries.
People do undertake a range of sustainability practices, even if they are not really focused on sustainability issues.
The rising cost of energy is one of the biggest budget issues for Australian businesses and households. At the same time, our use of buildings contributes between a quarter and a half of all greenhouse gas emissions generated in Australia.

Two research centres at the University of Wollongong are collaborating in research and training projects designed to make Australian buildings more environmentally and economically sustainable, while also looking at the social and cultural – or human – side of energy consumption.

It is a shining example of the inter-disciplinary partnerships that characterise much of UOW’s research.

Australian Laureate Fellow Professor Lesley Head leads the Australian Centre for Cultural Environmental Research (AUSCCER), which was established in 2010 to undertake in-depth analysis of important Australian environmental issues by exploring how humans interact with and understand the environment. It was established with Australian Research Council (ARC) support to provide evidence-based information to help governments determine the best policies to protect the environment.

Professor Paul Cooper heads the Sustainable Buildings Research Centre (SBRC), which has a major focus on reducing the carbon footprint of existing buildings, while developing technologies that will make Australia’s future buildings more environmentally sustainable. SBRC researchers’ projects include developing sustainable building technologies for residential and commercial applications, analysing and improving thermal design for buildings to reduce the need for using energy for heating and cooling, and developing control and sensor technology to improve building performance.

The Federal Government has provided a $25.1 m grant to build the SBRC headquarters at UOW’s Innovation Campus, while the centre also has a key industry partnership agreement with BlueScope Steel. Its other partners include Housing NSW, TAFE Illawarra Institute, Regional Development Australia – Illawarra and Green Jobs Illawarra.

AUSCCER was established with funding from UOW and the ARC through Professor Head’s five-year Australian Laureate Fellowship (2009-2014) and human geographer Professor Chris Gibson’s ARC Future Fellowship (2010-2013). It also receives support from government departments and local government organisations.

AUSCCER and SBRC are currently collaborating on a project to examine how Australian households heat and cool their homes.

“The SBRC looks at the technical side of sustainability, while AUSCCER looks at the human side, which is equally if not more important,” Professor Cooper said.

“Households use a lot of energy keeping warm and keeping cool, and (as part of this research) Paul’s group is monitoring temperature and humidity in existing buildings to identify both barriers and opportunities to lower energy consumption,” Professor Head said. “Professor Gordon Waitt is leading the project from our end, looking to see how people use their space, and what could be changed to help them use less energy. This would benefit both consumers and the environment.

“People do undertake a range of sustainability practices, even if they are not really focused on sustainability issues,” Professor Head said. “It may simply be because they have a low income and want to save money on their energy bills. These practices are resources we can all learn from.”

The two centres’ collaborations include NSW Government-funded professional development courses that SBRC runs throughout the year for engineers and other professionals to train them on the latest energy-saving technologies and innovations for retro-fitting existing buildings and making sure new buildings are as sustainable as possible.

“Our joint research informs the training courses, and Lesley has developed training materials focussing on the human factors involved in sustainability in buildings and industry,” Professor Cooper said.
The University of Wollongong’s Australian Laureate Fellow Professor Gordon Wallace is leading a $4.7 million medical bionics research program working with Melbourne’s St Vincent’s Hospital and other universities around Australia to develop ways to regenerate damaged nerves and muscles and ground-breaking brain implants for epilepsy patients.

Professor Wallace leads the ARC Centre of Excellence for Electromaterials Science located in the Australian Institute for Innovative Materials (AIIM) at UOW’s Innovation Campus. He also heads UOW’s Intelligent Polymer Research Institute at AIIM, which has a long history of partnerships with other research institutes and industry partners in Australia, the United Kingdom, the United States, Ireland, China, Japan and Korea.

Professor Wallace’s team is recognised as a world leader in the field of materials and bionics, by creating specialised three-dimensional structures made from ‘smart’ materials which are accepted by the human body and can enable regrowth of damaged nerves and muscles.

“In the last couple of decades a whole new area has been developed in organic materials that conduct electricity,” Professor Wallace said.

He said the pioneering research that developed cochlear ear implants to help people overcome hearing loss had sparked interest among clinicians, who had started looking for new applications for the electrodes.

He said the new research program will focus on building better organic materials to conduct electricity through the body, to “improve lines of communication” between electronics and biology to stimulate nerve, muscle and bone regeneration.

“Cochlear implants stimulated the imagination of researchers, and now the challenge is to make 3-D structures that can be a muscle regeneration platform to facilitate and stimulate re-growth,” Professor Wallace said. “We will also be developing the machinery to put these three-dimensional structures together.”

The epilepsy project with Professor Cook at St Vincent’s aims to develop nanostructured materials that can be implanted in the brains of epilepsy sufferers to monitor electrical signals. The device would pre-empt an epileptic seizure and then release medication to reduce or eliminate the effects of the seizure.

Professor Wallace said the research program was a multi-disciplinary, high collaboration effort. His team of researchers and PhD students are working with other faculties at UOW and researchers at the University of Tasmania and Deakin and Monash Universities in Victoria, as well as the clinicians at St Vincent’s and researchers overseas.

“This is a rare alignment of the planets, where we have the funding (from his Laureate Fellowship), a cracking research team and cracking people involved (from partner organisations),” Professor Wallace said.

Professor Cook said St Vincent’s Melbourne greatly valued its strong relationship with Professor Wallace and his team. He paid tribute to the team’s ability to produce the 3-D bionic materials needed for their clinical research at short notice.

The ARC Centre of Excellence for Electromaterials Sciences (ACES) at UOW has forged a strategic relationship with Irish wearable sensor company, Shimmer Research, to develop wearable bionic devices to be used post-operatively to improve patient recovery times.

Patients undergoing treatments such as orthopaedic surgery will be able to reduce their stay in hospital by wearing sensors strapped to their bodies which will feed vital rehabilitation information back (via a software program) to the patient and hospital.

The collaboration brings together the new materials and fabrication expertise at ACES with Shimmer Research’s wearable wireless communication technology. With input from ACES members (including world renowned orthopaedic clinicians from St Vincent’s Hospital Melbourne) the partnership will foster work on building bionics devices that will improve the quality of life for a large number of elderly people and those recovering from injury.
Both are wonderful organisations, highly respected in their areas of expertise

UOW Ambassador Adam Gilchrist played a key role in forging a partnership between UOW and international lubricants manufacturer CASTROL.

RELATIONSHIP DEVELOPMENT

Innovation is at the heart of one of UOW’s most recent industry partnerships with international lubricants manufacturer CASTROL.

The partnership has a strong focus on innovation between UOW researchers and CASTROL’s Global Mining Team, particularly developing products and services that help reduce total operating costs and risk for mining companies across the world.

The partnership will also focus on developing scholarships, internships and graduate programs for UOW students.

UOW Ambassador and former champion cricketer Adam Gilchrist played a key role in bringing the University and CASTROL together, as he works closely with both organisations and considered the partnership would be of mutual benefit. He has represented the University as an Ambassador since 2008, and has been a CASTROL Brand Ambassador for nine years.

Mr Gilchrist said his intimate knowledge of both organisations led to him suggesting the two organisations should talk about areas of common interest, such as research and development, that would be positive for both.

"Both are wonderful organisations, highly respected in their areas of expertise," he said. "The opportunities (for collaboration) in the research and development area are very exciting, but the partnership is also about broadening horizons for students and providing opportunities for graduates."

CASTROL Global Mining Manager Dave Collings said: "CASTROL is accelerating its global mining program, and we were looking to develop a relationship with a tertiary institution that is strongly focused on the mining industry and related engineering disciplines. Adam suggested we investigate the University of Wollongong. Not only does it have a very positive reputation in the Australian mining industry, but it also has a strong commercial focus."

Mr Collings said CASTROL was looking forward to working with UOW researchers who had a strong understanding of the needs of the mining industry to develop better engineering solutions to current and future mining challenges.
One of UOW’s key researchers Professor Shi Xue Dou personifies the University’s close links with China, collaborating closely with major Chinese corporations and leading universities.

Professor Dou came to Australia from China in 1986 as a visiting professor of chemistry on sabbatical leave from the Northeastern University in Shenyang.

Now he is an internationally acclaimed scientist who is one of Australia’s leading authorities on electronic materials, superconductivity, energy storage and new generation battery technology.

Professor Dou is the Director of the Institute for Superconducting and Electronic Materials (ISEM), a flagship UOW research institute located in the Australian Institute for Innovative Materials at the University’s Innovation Campus.

Professor Dou maintains many close connections with China. His Institute attracts postgraduate students from around the world, but at least 30 percent of them are traditionally from China. Professor Dou has supervised a large number of Chinese postgraduate research students over the years – many of whom have returned to China to take senior posts in research, at universities and in industry.

Professor Dou has also fostered many research collaborations with Chinese partner institutions and corporations. Projects include an energy recovery program with BAO Steel to capture heat from the company’s steel production processes and transfer it into usable energy, a long-standing research collaboration with one of China’s largest battery companies, DLG, and a partnership with Ningbo Jan Sen to develop next generation MRIs using superconductor technology.

His latest collaborations involve development of electric vehicle power systems, where he and his researchers are involved in joint Australia-China programs with a number of Chinese universities including institutions in Beijing and Shanghai.

Professor Dou has a number of honorary academic appointments with prestigious Chinese institutions including the Chinese Academy of Science, the Chinese Institute of Physics and Shanghai University.

Professor Dou says personal contact is the key to strong relationships with China. “In China personal contact is vital. We have maintained close personal contact with many Chinese academics, and that is why we have so many excellent postgraduate students coming here from China,” he said. “The study environment is very good, and we produce great academic outcomes for the students.”

ISEM also has many other connections and collaborations with leading institutes around the world.
RADIATING AROUND THE WORLD

UOW’s Centre for Medical Radiation Physics (CMRP) has partnerships with major organisations around the world, working on projects ranging from measuring the effect of cosmic radiation on NASA astronauts to developing new methods for treating prostate cancer.

The CMRP team has joined a major European project developing medical physics radiation detection technology. It previously had been part of a team that won a prestigious research grant from the US National Space Biomedical Research Institute at NASA to develop space qualified instrumentation for assessment of radiobiological effects on humans during long-term space missions.

The Advanced Radiation Dosimetry European Network Training (ARDENT) invited CMRP to join seven full European and five associate international partners working in the field of radiation detectors development and their application in different areas of radiation science and medicine.

The project, which is being co-ordinated by the European Organisation for Nuclear Research (CERN), also enables three UOW PhD students to be seconded to overseas institutions for specific research training.

Under founding director Professor Anatoly Rozenfeld, CMRP has developed strong research partnerships and collaborations with around 15 Australian organisations including ANSTO, the CSIRO and major hospitals and cancer research centres. It also has partnerships and collaborations with more than 25 research organisations, institutes and hospitals around the world.

INDIA

The University of Wollongong and India’s premier industrial research and development organisation, the Council of Scientific and Industrial Research (CSIR), are working together to advance research collaborations and establish a dedicated CSIR Research and Development Centre at UOW’s Innovation Campus.

CSIR was established in 1942 and is India’s largest research and development organisation with nearly 40 laboratories and 50 field stations throughout India. It has a collective staff of more than 17,000.

Under an arrangement announced in May, 2012, UOW and CSIR will develop research and development collaborations in areas including advanced steel metallurgy, lithium-ion batteries, super capacitors and polymer-based nano-composites.

Both organisations will also work towards the establishment of a CSIR Research and Development Centre on the Innovation Campus to work closely with the University’s research groups housed in the Australian Institute for Innovative Materials and to develop an academic exchange program for staff and students.

UOW Vice-Chancellor Professor Paul Wellings believes that the relationship between the University and CSIR will make a substantial contribution to the future success of both organisations.

CSIR Director-General Professor Samir K Bharamchari said the partnership with UOW, with a focus on innovation, would contribute to CSIR’s long standing vision to provide affordable health, low cost energy solutions and sustainable development for millions of people in India and around the world who need affordable science and technology solutions.

“We strive for global scientific impact and an important part of that is the development of a CSIR presence in the Asia-Pacific region. The Innovation Campus, the strength of the research staff and the University’s multi-disciplinary approach to research provide an excellent base to strengthen our long-term scientific objectives,” Professor Brahmachari said.

The study environment is very good, and we produce great academic outcomes for the students

Professor Shi Xue Dou is the Director of UOW’s Institute for Superconducting and Electronic Materials.
FORGED IN STEEL

The University of Wollongong’s partnership with BlueScope Steel and its predecessors Australian Iron and Steel (AI&S) and BHP Steel dates back to its very earliest days.

UOW grew out of a divisional college of the then NSW University of Technology (later UNSW) that was established in Wollongong in 1951 primarily to train metallurgists and industrial chemists for the local steel industry.

In 1959 BHP, AI&S and other local industries led a community campaign for the divisional college to become a University College with a wider range of courses. The industries donated £138,000, which was pooled with £50,000 in community donations and £178,000 from the Federal and NSW Governments to establish Wollongong University College which opened on its current campus site in 1962. BHP also donated substantial amounts of land and building materials, while also funding the salary of the College’s first Professor of Metallurgy.

Since then the steel industry and the University, which became an autonomous institution in 1975, have maintained a close relationship through research partnerships, traineeships, scholarships and collaboration on a wide range of industry and community projects.

The BlueScope Steel Metallurgy Centre (BSMC) in the Faculty of Engineering at UOW was established in 2004, evolving out of the previous BHP Institute for Steel Processing and Products, which had been operating since 1995.

BSMC has built up specialised equipment infrastructure that is shared by the University and company employees in a unique arrangement. It is a true partnership, providing opportunities for academic staff to assist industry while enhancing the opportunities for industry staff to make a contribution to fundamental research and education.

One UOW-BlueScope research project has been at the heart of the development of BlueScope Steel’s flagship range of COLORBOND® steel painted products.
Over the past decade a research team led by Dr Phil Barker from BlueScope Steel Research at Port Kembla and Professor Stephen Blanksby from UOW’s School of Chemistry have been developing a better understanding of the chemical processes which underpin the durability of the paints used in the COLORBOND® range.

The team has developed new technologies based on state-of-the-art mass spectrometry (a technique for identifying molecules by their individual masses) to monitor chemical processes within the paint at a molecular level.

The work has attracted national attention, with the Wollongong research team invited to join the national Centre of Excellence in Free Radical Chemistry and Biotechnology.

“We have made great advances in the understanding of chemical factors important to the durability of our pre-painted products,” Dr Barker said. “The work with Professor Blanksby has enabled us to design new highly-specialised, anti-oxidant molecules to soak up harmful free-radicals which can form in the paint. The outcomes will help make COLORBOND® steel products even more durable in the future.”

BlueScope Steel is also playing a key role in the Sustainable Buildings Research Centre at the Innovation Campus, with a focus on producing innovative new building materials. The company has supported a team of UOW and TAFE Illawarra students from the centre competing in the 2013 finals of the international Solar Decathlon: China, one of 24 teams from 13 countries competing to build and operate an advanced and appealing solar-powered house.

BlueScope Steel also has been a long-time sponsor of the UOW Faculty of Engineering entry in the annual Society of Automotive Engineers’ Formula SAE competition in which university students from around Australia and New Zealand design, build and drive race cars to test their engineering ability and ingenuity. UOW entries have a history of success in the Australasian and international competitions in the US for more than a decade.

Left: Professor Stephen Blanksby and BlueScope Steel’s Dr Phil Barker at one of the company’s field testing sites for COLORBOND® coated steel. Below: BlueScope Steel has been a long-time sponsor of UOW’s Formula SAE racing car.
New Zealand health authorities have adopted a sun protection public awareness campaign developed by researchers at the University of Wollongong.

The attention-grabbing campaign developed by researchers from The Centre for Health Initiatives (CHI) seeks to change the lax attitudes of adolescents towards sun exposure. It shows, in vivid detail, the dramatic yet largely invisible effects of sun on human skin.

The campaign, which was trialled in Wollongong, has been adopted by The Health Sponsorship Council of New Zealand.

“Teenagers are a challenging age group to target with most social marketing messages. The long-lasting and life-threatening effects of excessive sun exposure usually come later in life, so most teenagers don’t see preventing sun damage as relevant to their lives now,” CHI Director and Australian Research Council Future Fellow Professor Sandra Jones said.

“CHI is trying to change that by showing young people the immediate effects of their sun exposure,” she said.

Using UV cameras, the researchers showed young people the invisible skin damage they had already developed – damage that will become visible as they age, but that is preventable and reversible if they act now.

As part of their research in the summer of 2009-10, the CHI researchers photographed 308 teenagers in Wollongong.

The ‘sun team’ distributed 2220 ‘sun packs’ (sunscreen samples, reminder wristbands, laptop stickers and information about sun protection), and placed 140 posters (showing teen models with regular and UV photos) in the local community. They also ran a school-based intervention with educational activities and UV-photography in Wollongong and Newcastle.

Researchers from UOW’s Centre for Health Initiatives studied Illawarra teenagers’ attitudes to sun protection before developing a sun protection campaign that has been taken up by New Zealand authorities. This poster was prepared by the Health Sponsorship Council of New Zealand.
DEEP SEA MYSTERIES

A University of Wollongong research team is working with petroleum company Chevron Australia to help discover whether Australia’s deep sea could be an untapped resource of anti-cancer medications.

Dr Danielle Skropeta from UOW’s School of Chemistry is leading a collaborative research project called Sea Serpent involving marine scientists and the North West Shelf oil and gas industry in Western Australia. Facilitated by petroleum company Chevron Australia, underwater robots or Remotely Operated Vehicles (ROVs) have descended to depths between 200m and 1400m to scour the ocean floor for sea life.

Dr Skropeta said the ROV access had been provided by the oil and gas industry as a gesture of goodwill and to support university science. “The deep sea is impossible to access otherwise in the Southern Hemisphere so it provides us with access to an environment that we know essentially nothing about. It is well accepted in the field that we know more about the moon’s surface then we do about the ocean floor,” she said.

Back in the laboratory Dr Skropeta, along with Associate Professor Andy Davis and PhD student Wei Liangqian, examine their collection of marine sponges, molluscs and other deep-sea invertebrates. They do a solvent extraction of the samples and then purify the compounds with high performance liquid chromatography and liquid-chromatography-mass spectrometry. They then use nuclear magnetic resonance spectroscopy to identify the new compounds.

Dr Skropera said the team expected to find previously undiscovered novel structures that would help in the development of new drugs that may be active against resistant strains of bacteria or cancer cells.

Dr Daniella Skropeeta (centre) and colleagues at work in the laboratory separating compounds brought back from deep sea field trips.
The Sydney Business School is the University of Wollongong’s graduate school of business. It has developed strong links with some of Australia’s largest corporations in research, consultancies and training.

The Sydney Business School operates from two campuses – at Circular Quay in the heart of Sydney’s financial district, and at UOW’s Innovation campus in Wollongong. It offers a wide range of courses at Graduate Certificate, Masters and Doctoral level in areas such as business administration, business leadership, management, international business, business coaching, logistics, retail management and project management.

It has four key research centres: the Australian Institute of Health Services Research, the Australian Centre of Business Wellbeing, the Centre for Supply Chain Solutions and the Australian Centre for Excellence In Survey Research.

Through these specialisations, the School has developed strong industry links. For example, in logistics it has strong links with Australia’s major corporations and government agencies operating in this field including Linfox, Toll, BlueScope Steel, Australia Post, DHL and the Logistics Association of Australia.

The School has a number of relationships with industry-based organisations. The nature of these relationships varies from consultancies and training through to longer term research collaborations.
For example, SBS provides Yum! employees and franchisees (KFC, Pizza Hut, Taco Bell) with a tailored Master of Retail Management program. The course provides participants with strategies for dealing with issues unique to retail and the education necessary to succeed in leadership roles within the sector. Upon completion of the Master of Retail Management, students can enrol into the school’s MBA program, complete a further six subjects and graduate with a second Master qualification. The program is assessed via a series of work-related reports and exams. The School runs this course for Yum! in Adelaide, Melbourne and Sydney.

The School has also provided Australia Post with a tailored Graduate Certificate Program in Business Logistics Management for employees in its Mail and Networks Division. The program was designed to provide managers and professionals with the knowledge and expertise in logistics, operations and supply chain management.

Main image: The foyer of UOW’s Sydney Business School campus at Circular Quay, in the heart of Sydney’s financial district.

Left: The Sydney Business School has two floors in the Gateway Building at 1 Macquarie Place, Circular Quay. Its Wollongong base is on UOW’s Innovation Campus.

Through these specialisations, the School has developed strong industry links.
Cover image: Leading University of Wollongong researchers Professor Lesley Head and Professor Paul Cooper epitomise the interdisciplinary cooperation and government and industry partnerships that characterise UOW research.

CONNECT: PARTNERSHIPS

This publication can be viewed on-line at:
www.uow.edu.au/about/community/index.html

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