"UWA research will continue to find real solutions and achieve global impact, creating a better future."

Professor Robyn Owens
Deputy Vice-Chancellor (Research)

Create the future

Long before universities granted degrees, great thinkers in centres of higher learning turned their attention to the difficult questions facing humankind. Today, with a global population expected to reach almost nine billion by 2050 and society straining under the pressure, these questions are increasingly complex. The importance of asking them and of fearlessly pursuing answers has never been more important.

Outstanding research is at the heart of The University of Western Australia's vision for the future. A track record for exploring and addressing the world's most pressing challenges will draw the best and brightest faculty and students to our campus and keep them here. Opportunities and resources to pursue big ideas and their practical application are key to positioning UWA as a global leader — and to making a difference.

The building blocks of world-class research are equipment, facilities and, most importantly, people. A network for investigation and knowledge transfer supports the cutting-edge work of senior academics as well as the developing expertise of postdoctoral fellows, PhDs and masters, as well as undergraduate students. Our great University is committed to creating a vibrant interdisciplinary community of scholars that fosters creativity and spurs innovative excellence.

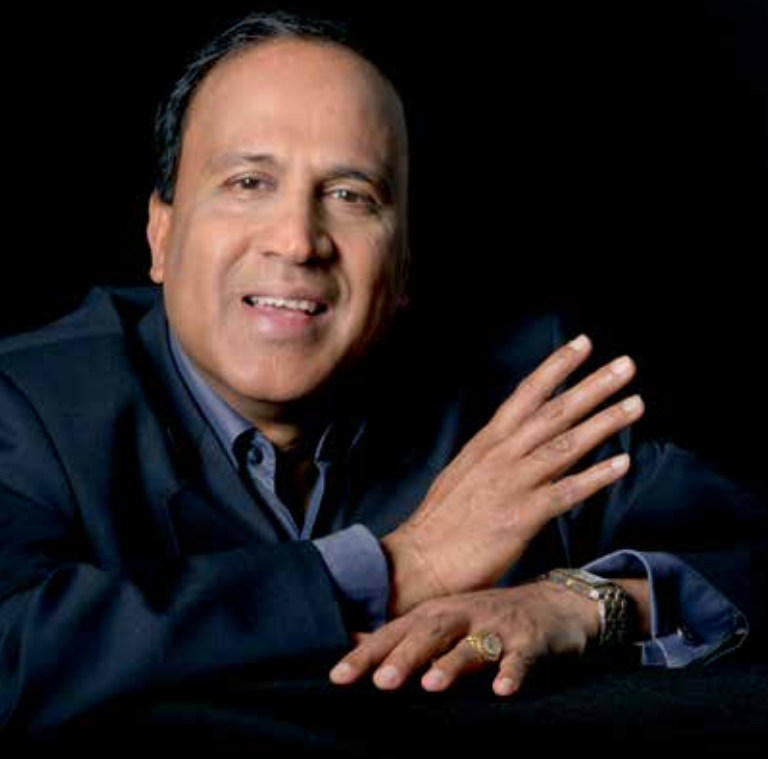
UWA stands with an elite few international institutions: each is top level, research-intensive, and dedicated to the pursuit of pure knowledge and its application. Our researchers see the world as it could be and are driven to find the ways to make it so. We are the changemakers of the future.

Winthrop Professor Kadambot Siddique AM

Hackett Professor of Agriculture Chair, and Director, The UWA Institute of Agriculture

UWA is one of the top universities in the world for research and teaching in dryland agriculture and food production systems. The reputation of the University, the track record of the academics and beautiful Perth: those are the things that attracted me to UWA.

My research is focussed on using innovative science and technology to develop sustainable food production systems for the future. We are at a turning point for global food production and supply. The world population is booming and this, together with massive urbanisation and industrial development, puts incredible pressure on our agricultural ecosystem. We are dealing with unprecedented demand, a changing climate, declining natural resources, trade liberalisation and socio-political instability. Science must play a major role in finding a way to feed the world in a sustainable manner.



This is not unlike the situation faced during the green revolution and post World War II. Today, however, things are considerably more complicated. Meeting future food security challenges demands a multidisciplinary approach, incorporating agricultural, environmental, economic, social and political perspectives. We must balance the needs and merits of nutrition, bioenergy, environmental protection and livelihood across the globe, remembering that every human is a net consumer of food.

My research at UWA will build the agricultural capacity of the State, helping to keep Australian agriculture profitable and sustainable well into the twenty-first century. We will help farmers meet the many challenges facing them. At a global level, more science and better integration of agriculture and the food industry will avert a potential colossal future food shortage.

I have no doubt we can be a catalyst for lifting many of the world's estimated 1.4 billion poor out of poverty and malnutrition. To do so, we need more world-class scientists trained in agronomy, farming systems, environmental science, genetics, biotechnology and plant breeding. By investing in agricultural research and training at UWA, people should know they are also investing in regional, national and global future food security.

Winthrop Professor Christobel Saunders

Deputy Head of School, School of Surgery, and Head of Unit, Queen Elizabeth II Medical Centre (Surgery)

Western Australia has a small but vibrant cancer research community. Despite our relatively isolated population, great resources and data linkage expand our reach significantly and were fundamental to my initial research at UWA into pregnancy-related breast cancer.

Today, my breast cancer research covers a wide spectrum, from clinical trials of new treatments, to laboratory investigation into how cancers spread, to improving care and the way cancer patients are supported. Cancer affects one in three Australians in their lifetime and remains the single greatest cause of death in this country. Breast cancer will be diagnosed in 15,000 women in Australia this year — 1.4 million worldwide — so research to improve outcomes is vital and will impact nearly all of us.

Our group at UWA is recognised as one of the most successful clinical cancer research centres in the country. Through wide collaboration, we are working hard to have an impact on the health and wellbeing of Australians and, personally, I would like to make significant advances in the treatment of breast cancer worldwide.

Cancer research requires a huge investment in both people and resources. With more funding we can build even better research teams and fast track some of the exciting progress we are making. This includes building bioengineering devices, improving diagnosis and treatment of breast cancer, developing new therapies like intra-operative radiotherapy, searching for new drugs to stop cancer spreading, and helping women live well and strong after breast cancer.

I believe our community recognises the vital importance of cancer research. When an individual invests in this research it says to me that they share our vision for a cure.

Professor Peter Quinn

Director, International Centre for Radio Astronomy Research

I have been an international research scientist for more than 30 years, involved in building and running some of the largest astronomical facilities in the world, and when I first heard about the Square Kilometre Array [SKA] radio telescope, I knew Western Australia was the ideal location for it. I immediately started seeing a path back home, to Australia.

Top-level research in the twenty-first century involves project budgets in the billion-dollar range. We have no choice but to pool funds from many nations and join in collaborative investigation with teams of scientists and engineers from around the world. The SKA demands this. It represents an opportunity for Western Australia to be part of the global research community; a leader in the quest for innovation and breakthrough understanding. It also represents particular technological challenges.

In successfully tackling the Big Data requirements of the SKA, UWA is attracting the attention of leading technology companies worldwide, like CISCO, Intel, SGI, IBM and Amazon. Perth is becoming an international focal point for the development of new data management and knowledge creation technologies. Let's not forget that Wi-Fi technology was invented by researchers exploring black holes with radio telescopes.

With the infrastructure required for the SKA, such as the Pawsey Supercomputer Centre, UWA is building a knowledge powerhouse in Western Australia that will rival any in the world. We are working hand in hand with major international businesses and new Western Australian enterprises to create systems that can support data intensive endeavours in mining, resource management, climate and ocean systems, as well as community and social development.

And we're exploring previously untouched aspects of the universe. The SKA represents a 10,000-fold increase in our ability to probe and map space. Over the course of the past 400 years, a new telescope has been built once every 20 years or so, increasing performance each time by a factor of about five. Never before have we seen this monumental increase in capacity. With it, we will confront great mysteries like dark energy and dark matter, which very likely hold the key to understanding nature. A Nobel Prize or two will result from SKA-based research into the dark side of the universe.

The most valuable asset we can acquire for this work is people. Funds will attract the best research people in the world to Western Australia. If we do that, I know we will become one of the top 50 research universities in the world. Having individuals back us in this, attaching their names to what we do, means they really understand the power of what we do.

Honouring a legacy

In 1957, Perth entrepreneur Mary Raine changed the course of medical history when she bequeathed her property empire to UWA, thereby establishing The Raine Medical Research Foundation. Her gift, worth £1 million at the time and now valued at more than $30 million, set a course for medical research in Western Australia to flourish.

The Raine Medical Research Foundation has supported scores of major medical research projects, funded two centres of excellence, established fellowships and scholarships, and fostered international collaboration, including major joint ventures. Thanks to Mary Raine's foresight, people across Australia, and the world, have enjoyed the benefits of UWA's pioneering medical research. Her generosity started Western Australia on its way to improving the health of people across the globe.

Today, an interdisciplinary approach to research and learning sets UWA apart in research excellence. Innovative approaches to tackling world issues are made possible through collaboration across diverse disciplines. This, coupled with our prime location in close proximity to 60 per cent of the world's population, make us an attractive partner to other high-calibre institutions and organisations, including research and industry powerhouses in Asia and the Western world.

To think that one visionary bequest could put such wheels in motion. Now, through the *New Century Campaign*, we will build the UWA research endowment for the next generation of changemakers and academic leaders. With a lasting source of income, we will create a hub of innovation in Western Australia, drawing the greatest minds in the world to our campus.

Already, our leading research experts are working to address pressing global challenges: how to feed and house a burgeoning global population; how to cure devastating disease; how to preserve fragile environments for the enjoyment of our children and grandchildren; how to encourage cultural appreciation and understanding. Our research endowment will transform lives by creating a future of health and prosperity for all.

Professor Barry Marshall, Nobel Laureate

Honorary Clinical Professor, Clinical and Adjunct Staff (Medicine and Pharmacology, Sir Charles Gairdner Hospital), School of Pathology and Laboratory Medicine, and Co-Director, The Marshall Centre for Infectious Diseases Research and Training

In the 1990s, the world was revolutionised by the Internet. Perth and Western Australia were no longer isolated and I realised that all the opportunities we might have missed out on because of our location were now at our fingertips. Suddenly we had access to all the online resources, institutions and collaborations that we would need to conduct research at the highest level right here at UWA.

Indeed, for me, this has proven to be true. Most of my work is based at UWA, but I am in demand to collaborate with people at the highest level institutions around the world. I have found that people outside Australia generally have a very high opinion of Australians and Australian institutions. The international publicity we get is usually complimentary and Australians who travel and study overseas are always in high demand for their literacy, scientific expertise and optimistic can-do attitude in research. Fortunately, because of UWA, even the top achievers will stay, be drawn to or return to Western Australia if the opportunity is there.

UWA is well resourced with some of the best state of the art equipment and systems. This is what makes us attractive to brilliant overseas graduates interested in pursuing PhDs or postdoctoral research. My goal is to create a satellite industry of biotechnology around UWA.

I can see clearly how this is going to come together over the next few years, with a massive expansion of the health infrastructure through such developments as the Queen Elizabeth II Medical Centre and the Fiona Stanley Hospital south of the river. We will have several of the essential components in place to translate clinical research into bridging research and, ultimately, into new medical products that will transform the health of individuals both here and across the world.

Winthrop Professor Wendy Erber

Head of School/Winthrop Professor,
School of Pathology and Laboratory Medicine

I came to UWA from Cambridge in 2011 to take up the position of Head of School, Pathology and Laboratory Medicine. Although the school was only created in 2009, I was attracted by the opportunity to work with some of the best cancer pathologists and scientists in Australia. Over the past two years, the school has more than doubled in size. We have seen a vast increase in undergraduate student numbers, while at the same time redesigning our medical program for graduate degrees.

Research is central to the School of Pathology and Laboratory Medicine and one of the areas in which we are focussing is cancer pathology. In Western Australia, 10,000 patients are diagnosed with cancer of one type or another every year. My own research focuses on accurately identifying different types of cancer, matching the best treatments and improving methods to monitor outcomes.

There are major challenges in this work but, with appropriate resources, UWA's new Translational Cancer Pathology Laboratory will significantly impact cancer survival rates. Current cancer therapies are based on a 'one size fits all' approach. They are toxic for patients and expensive for our society. At UWA, our hope is to define more precisely the disease in each patient, leading to 'personalised pathology' and, ultimately, patient-specific cancer therapies that offer a high chance of survival.

This important work will excite the next generation of research and clinical scientists. By teaming up with other groups in Australia and overseas, we aim to raise our research quality, capacity and impact. We will increase our international profile and become a centre for cancer diagnostic excellence.

None of this will happen without money. It requires highly talented researchers, the latest technology and state of the art equipment. And the technology keeps changing and improving. Additional funds will ensure that UWA stays at the forefront of cancer pathology, for the benefit of patients. Such support shows that our work is valued. It says that donors recognise that we are making a difference by improving patient health and saving lives.

We have the skill, enthusiasm and drive to make real breakthroughs in cancer diagnosis and patient longevity. Investing in us is investing in the future.

Building for the future

Rare is the individual who has what it takes to be a research star. These are inspired, dedicated individuals, driven to make a difference. For every brilliant discovery there are a hundred failed attempts. Hour upon hour of painstaking observation, meticulous sampling, repetitive testing, rumination, and trial and error go into finding the next big thing. Researchers must have vision and imagination – and the tenacity and endurance of an elite athlete.

The right environment is critical to drawing the very best researchers to our campus. Some are here already. We must keep them. Some will come for the promise of working with established masters in their fields. For all of them, the work is paramount. The freedom, facilities, technology and support to chase an answer are what matter above all, and the superstars of research will go wherever they can find these.

UWA is committed to creating a world-class research environment, one that will attract the great thinkers of our time. Testing environments, equipment, information systems, field support: none of these lights up the imagination like a cure for cancer, but they are all vital to finding the cure. The *New Century Campaign* will ensure that UWA is the university of choice for those brilliant, questioning research minds to create the future we all want to see.

We invite you to create the future by supporting the people who will change lives: exceptional UWA researchers.

Selected gift opportunities:

- $5 million endows a prestigious academic Chair
- $2.2 million provides an endowment for a postdoctoral fellowship
- $1 million endows a PhD award

Winthrop Professor Shaun Collin

Winthrop Professor/WA Premier's Research Fellow, The Neuroecology Group, UWA Oceans Institute and the School of Animal Biology

I was drawn back to UWA to take up a WA Premier's Fellowship. My appointments within the School of Animal Biology and the Oceans Institute offer an exciting research environment where I can focus on understanding how animals perceive their world and how this knowledge can help us conserve and manage the unrivalled biodiversity in Western Australia.

In our work, we use innovative neurobiological techniques such as molecular genetics, electrophysiology, anatomy and behaviour to study the ways in which animals detect and process key elements of their physical environments. By studying their central nervous systems, we've learned how to predict animal behaviour, establishing UWA as one of the world's leading sensory neurobiology authorities. Understanding how animals perceive and process their sensory world under different environmental conditions is vital to their survival and underlies the sustainable conservation of biodiversity.

Maybe our most important research integrates the fields of neuroscience and ecology in understanding the neural bases of behaviour in a range of animals, including fish and sharks. We are interested in how sharks perceive light, odour, sound, electromagnetic fields and water currents, and how they use this information to find food, avoid predators, navigate and find reproductive partners. One of our major goals is to develop effective shark deterrents to protect humans, while avoiding the need to cull sharks so they can continue their important role as apex predators in a complex marine ecosystem.

Our research on sharks requires us to develop laboratory-based testing regimes which must then be taken into the field. Clearly, there are safety issues and anything less than the best equipment is not an option. Research funding will allow us to continue to test and enhance shark deterrents and, from there, to develop mitigation strategies. We can expand our research to more species, under a larger range of environmental conditions and, ultimately, give people the peace of mind to enjoy safely Australia's beautiful beaches and ocean waters off our coastline.

Having our research singled out for support is an exciting and humbling prospect. It would motivate us to work even harder toward our critical goals.

Associate Professor Sarah Murray
Juris Doctor Coordinator
Faculty of Law

I love being a researcher at UWA. I am supported and continually inspired — and I get to work at a University ranked within the top 100 in the world.

I am a constitutional lawyer, interested in the challenges that change presents to our legal system. The world is moving so fast and this puts ever-new expectations and pressures on our courts and judges. Through my research, I've looked at innovations, such as judicial mediation, and how such reforms might be accommodated within Australia's constitutional framework. We need to make sure that legal institutions evolve, retain their constitutional legitimacy and still serve society's needs.

I strive to establish UWA as a cutting-edge contributor in this field. Additional research funding would allow me to broaden my scope, collaborating internationally and learning from how other countries deal with the changing nature of their courts. UWA could bring internationally-renowned, multidisciplinary scholars together to explore common challenges facing the judiciary. For me, having someone offer financial support is inspirational. I am moved to think bigger and to find answers that have a real impact.

Investing in leadership

Reflecting the aims of our founders, UWA is firmly rooted in the community. Throughout our first century, our growth has been intertwined with and has shaped the growth and prosperity of the State. In 1913, Mining Engineering was one of UWA's founding professorships. Today, we provide leading research that underpins Western Australia's position as the nation's economic powerhouse.

The creation of a vibrant academic community is the cornerstone of a great university. With this, UWA will continue to contribute to the economic and social development of society, at home and abroad.

Endowed chairs

We can maximise our past successes by investing in the gifted academic leaders who will extend our frontiers of knowledge and create the future. These are the experts at the top of their game; exceptional thought leaders who bring with them significant levels of research funding, elevated international reputation and collaborative opportunities, as well as brilliant early-career researchers eager to learn from the best. Equally important, these senior researchers have what it takes to find that next big thing: the discovery that will change the world.

The *New Century Campaign* will create a series of endowed chairs in areas of strategic importance, based on our strengths, our unique opportunities and our goals. We will extend the boundaries of knowledge through an internationally recognised network of researchers and practitioners.

Postdoctoral fellows and PhDs

UWA aims to attract PhD students and ambitious postdoctoral fellows from around the world by providing them with unrivalled research environments. This requires a vibrant academic community, a shared belief in the value of inquiry and an overriding confidence in our ability to be the best.

The Forrest Foundation, newly created through a history-making gift of $65 million from Andrew and Nicola Forrest, is a unique scholarship endowment designed to attract and encourage those capable of the world-class exploration and discovery necessary to establish Perth and Western Australia as a hub in the knowledge-based economy. The Foundation will support ground-breaking research through the provision of PhD scholarships and postdoctoral fellowships, with PhD scholarship recipients to be known as Forrest Scholars and postdoctoral fellowship recipients, Forrest Fellows.

Perhaps the most visionary element of the Forrest gift is an aspect that stands to multiply its impact: the creation of a community of scholars. Forrest Hall will be home to early-career researchers as they tackle the challenges of our time — a place that fosters interdisciplinary creativity and collaboration. With your support of funding for PhDs and postdoctoral fellows, UWA will fill Forrest Hall with the Nobel Prize winners of the future.

Winthrop Professor Jo McDonald
Rio Tinto Chair of Rock Art Studies/Director,
Centre for Rock Art Research and Management

I came to UWA to undertake a fellowship research project that involved studying rock art in two of the great deserts of the world: the Western Desert in Australia and the Great Basin in the USA. UWA had a unique appeal because of its location, but also because the cultural and scientific significance of this work was recognised and would be well resourced in the Centre for Rock Art Research and Management.

One of the questions I am most interested in is how people and societies have responded to the stresses of environmental change through time — and how art, and specifically rock art, has acted as a mechanism for coping and communication. My research looks at people and their cultures, including the way they perceive themselves and the world around them. I'm also interested in how and when people first arrived in Australia, and how modern humans moved out of Africa and into the new worlds of Australia and the Americas. Rock art has the potential to answer such significant genetic and archaeological questions. It offers insight into how information is shared and used in human societies and, in the context of changing climate and environmental landscapes, where Australia fits relative to her Southeast Asian neighbours.

I hope my research helps people appreciate rock art for its beauty but also for the role it plays in human social development. That understanding will help us build a strong society for the future. In Western Australia, we have some of the most spectacular rock art in the world — a deep time record of cultures and of the aesthetic practised by Aboriginal people throughout time. In rock art, we see firsthand the Aboriginal community's outstanding skill in living successfully in this country for 50,000 years. The potential of rock art interpretation to drive cultural tourism for Aboriginal communities is significant. This is a major asset that will provide Indigenous peoples with a sustainable contemporary economy.

Of course, undertaking research in remote areas requires resources, as do the digital technologies for researching, dating, interpreting and displaying rock art. The equipment and techniques are expensive. Financial reward is not something that archaeologists join the profession for but, without a doubt, all of us know the necessity and benefit of well-resourced research. I believe Australian rock art deserves world recognition. The time and money this requires is a sound investment in the future.

Tristan Clemons
PhD candidate

I chose to do my PhD at UWA because I was excited by the potential of the project that was offered to me and by the quality of the facilities and supervisors with whom I would be working. I am researching the development of multifunctional nanoparticles for applications in drug delivery. What that means in lay person's terms is that we are developing new nanoparticles to increase the effectiveness in drug delivery for treating disease.

I have five supervisors for my PhD, all of whom bring a different skill set and expertise. They have all had highly successful careers and are experts in research, disease treatment and rehabilitation. They are all go-getters with fantastic ideas and a real zest for making great things happen. I am so fortunate to have this mix of wisdom, experience and enthusiasm in my supervisors.

The equipment I use here at UWA includes transmission electron microscopes, flourescent microscopes and state of the art chemistry and tissue culture laboratories. These are high-end precision instruments, at the leading edge of nanotechnology research. I work in the Bayliss Building, which has been set up to encourage collaboration between the two traditional disciplines of chemistry and biochemistry. It's a fun and energetic place to be.

My research will lead to improvements in the treatment of such devastating conditions as cancer, heart disease and spinal cord injuries. Cancer and heart disease are among the leading causes of death in Australia and those who suffer from severe spinal cord injuries still have no way to return to full function. I aim to make a difference to these patients through my research. I feel it is of unquestionable benefit to society to treat cancer without the debilitating side effects of chemotherapy; effectively reduce the mortality resulting from heart attacks; and improve the functional outcomes of those confined to a wheelchair after a spinal cord injury.

I have been fortunate throughout my PhD that UWA supported the commercialisation of a nanoparticle construct for drug delivery which I co-invented. My dream is to see my work in the laboratory one day translate into the clinic. My hope for UWA is that it will continue to grow so that other students, like me, can experience the thrill of scientific research and so they, too, can make a difference.

Funding says that others believe in my potential and the real potential of my work. Great research minds are always coming up with new ideas and exploring new concepts. It's what we are taught to do — to think outside the box. As a result, we have heaps of ideas but only so many resources to follow them through. Many never see the light of day. In a perfect world, we would have the capacity to bring every viable idea to fruition, resulting in significant breakthroughs for the world.

Recognising your generosity

The University of Western Australia recognises and celebrates the generosity of our graduates and friends. This proud tradition continues today. We would be delighted to assist you to explore how you can contribute to creating a brilliant future, with and through UWA, in whatever way speaks to you.

For major donors, we are pleased to offer a range of naming opportunities.

We look forward to talking with you.

Contact us

Hackett Foundation
Development and Alumni Relations
M361, The University of Western Australia
35 Stirling Highway
Crawley WA 6009

T +61 8 6488 8000
F +61 8 6488 1063
E createthefuture@uwa.edu.au

All images by Craig Kinder@f22photography.

www.campaign.uwa.edu.au

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