

THE UNIVERSITY OF AUCKLAND CAMPAIGN
FOR ALL OUR FUTURES



CAN
WE...

CAN WE PREVENT ADULT DISEASE BEFORE BIRTH? ... CAN WE KNOW HOW THOUGHTS ARE MADE? ... CAN WE EMPOWER YOUNG ADVOCATES TO FIGHT INJUSTICE? ... CAN WE REDUCE INEQUALITY THROUGH EDUCATION? ... **CAN WE MAKE BETTER USE OF OUR ORGANIC WASTE?** ... CAN WE HELP WOMEN IN PRISONS TO GAIN SELF-ESTEEM? ... CAN WE BRING BACK THE DAWN CHORUS TO OUR CITIES? ... CAN WE HAVE THE BEST SCHOOL SYSTEM IN THE WORLD? ... CAN WE LEARN FROM THE MISTAKES OF HISTORY TO CREATE A BETTER WORLD? ... CAN WE BUILD A SOCIETY THAT PROTECTS ITS WEAKEST MEMBERS? ... **CAN WE BUILD A SPACE INDUSTRY?** ... CAN WE BUILD STRONGER COMMUNITIES? ... CAN WE NURTURE CUTTING-EDGE INNOVATION WITH TRADITIONAL INTEGRITY? ... CAN WE USE VISUAL TESTS TO DIAGNOSE AUTISM? ... CAN WE FACILITATE THE CREATION OF AMAZING ARTWORKS? ... CAN WE REDUCE OUR RELIANCE ON FOSSIL FUELS? ... CAN WE DEEPEN OUR UNDERSTANDING OF THE CREATIVE PROCESS? ... CAN WE MAKE EVERY BUILDING SAFE FROM EARTHQUAKES? ... **CAN WE BRING UP A GENERATION OF CRITICAL THINKERS?** ... CAN WE STOP WASTING TALENT? ... CAN WE PROLONG THE QUALITY OF PEOPLE'S VISION? ... CAN WE TURN OFF THE OBESITY SWITCH? ... CAN WE TAKE MORE GAME-CHANGING IDEAS TO MARKET? ... CAN WE PREVENT MIGRAINES? ... CAN WE ERADICATE CHILD ABUSE? ... CAN WE PREVENT PROGRESSION OF MYOPIA WITH CONTACT LENSES? ... **CAN WE BUILD A MODERN ROBUST ECONOMY?** ... CAN WE CAPTURE THE FORCE OF LIGHT? ... CAN WE IMPROVE SOCIETY THROUGH UNDERSTANDING OF INJUSTICES? ... CAN WE DEVELOP THE GO-TO PRODUCTS AND SERVICES OF TOMORROW? ... CAN WE PREPARE YOUNG NEW ZEALANDERS TO BE GLOBAL CITIZENS AND INFLUENCERS? ... **CAN WE POWER OUR DEVICES WITHOUT WIRES?** ... CAN WE CREATE CHANGE, INVITE INNOVATION AND LEAD THE WAY? ... CAN WE COMBINE CREATIVE FLAIR WITH FUNCTIONALITY? ... CAN WE DESIGN CITIES READY FOR A CHANGING WORLD? ... **CAN WE HELP MORE PATIENTS IN OUR HOSPITALS?** ... CAN WE DEVELOP EFFECTIVE INTERVENTIONS FOR ADDICTION? ... CAN WE TRANSFORM LIVES WITH CREATIVITY? ... CAN WE ENSURE ALL OUR YOUNGSTERS ARE READY FOR SCHOOL? ... CAN WE PROVE THE VALUE OF CREATIVITY? ... **CAN WE PREPARE STUDENTS TO SUCCEED IN A RAPIDLY CHANGING WORLD?** ... CAN WE OVERCOME ECONOMIC BARRIERS TO BRILLIANT STUDENTS? ... CAN WE SEE INTO A VOLCANO? ... CAN WE FOSTER A SUCCESSFUL ENTERPRISE CULTURE? ... CAN WE HELP THE NEXT GENERATION OF COMPOSERS TO IMPRESS THE WORLD? ... CAN WE USE A SINGLE BLOOD TEST TO DIAGNOSE CANCER? ... CAN WE PREVENT PREMATURE DEATH AMONGST MĀORI? ... CAN WE KEEP ALL OUR CHILDREN SAFE? ... CAN WE REDUCE REOFFENDING? ... CAN WE KNOW WHAT IS IN OUR AIR? ... **CAN WE GIVE ALL STUDENTS INTERNATIONAL EXPERIENCES?** ... CAN WE MAXIMISE THE POTENTIAL OF 'BIG DATA' WHILE AVOIDING ITS MISUSE? ... CAN WE CREATE TRULY WATER-SENSITIVE CITIES? ... CAN WE MAKE TEACHING A HIGHLY VALUED PROFESSION? ... CAN WE ASSIST SCIENCE AND MĀTAURANGA MĀORI TO WORK HAND IN HAND? ... CAN WE MOVE THE DIAL ON OUR ECONOMIC PERFORMANCE? ... CAN WE BE WORLD LEADERS IN INDIGENOUS HEALTH? ... CAN WE MAKE BURN SCARS A DISTANT MEMORY? ... CAN WE REPLACE LOST BRAIN CELLS? ... CAN WE RESTORE OUR UNIQUE NATURAL ENVIRONMENT? ... CAN WE BETTER UNDERSTAND NEW ZEALAND'S UNIQUE IDENTITY? ... **CAN WE POWER NEW ZEALAND WITH THE WIND?** ... CAN WE ACCELERATE LEARNING THROUGH DIGITAL INNOVATION? ... CAN WE USE THE ARTS TO INCREASE PERFORMANCE IN THE SCIENCES? ... CAN WE SLOW DOWN THE PROGRESS OF FRONTOTEMPORAL DEMENTIA? ... CAN WE IGNITE A SPIRIT OF INNOVATION? ... CAN WE UNDERSTAND HOW THE UNIVERSE FORMED? ... CAN WE LEAD THE WORLD ON ENVIRONMENTAL POLICY? ... CAN WE HELP OUR STUDENTS TO MOVE ON TO POSTGRADUATE STUDY? ... CAN WE CELEBRATE OUR DIVERSITY AND CREATE AN INCLUSIVE SOCIETY? ... CAN WE HAVE CLEAR RIVERS AND SEAS? ... **CAN WE ATTRACT AND RETAIN THE BEST MINDS IN NEW ZEALAND?** ... CAN WE CREATE A CRIME-FREE ENVIRONMENT? ... CAN WE ENRICH INDEPENDENT EVERYDAY LIVING FOR OLDER PEOPLE? ... CAN WE USE SOCIAL DATA MORE EFFECTIVELY? ... CAN WE MAKE OUR COMPUTERS SAFE FROM HACKERS? ... CAN WE IMPROVE THE LIVES OF PEOPLE WITH SEVERE EPILEPSY? ... CAN WE MAKE EVERY HOME A GREEN ONE? ... CAN WE FOSTER THE TALENTS OF OUR YOUNG PERFORMERS? ... CAN WE REDUCE THE HIGH INCIDENCE OF HEART DISEASE AMONGST MĀORI? ... CAN WE DO JUSTICE TO OUR GLOBAL OPPORTUNITIES? ... **CAN WE EARTHQUAKE-PROOF NEW ZEALAND?** ... CAN WE PROTECT NEW ZEALAND'S CREATIVITY AND INNOVATION? ... CAN WE LEARN WHAT IS NEEDED FOR AN ETHICAL AND JUST SOCIETY? ... **CAN WE DESIGN ANTI-SKID ROADS?** ... CAN WE DELAY THE ONSET OF ALZHEIMER'S? ... CAN WE BE A WORLD LEADER IN BIOSECURITY? ... CAN WE ACCELERATE BRAIN RECOVERY AFTER STROKE? ... CAN WE IMPROVE THE WELL-BEING OF THE WORLD'S MOST VULNERABLE PEOPLES? ... CAN WE INNOVATE TO CREATE VALUE FOR ALL? ... CAN WE NURTURE THE ABILITY TO THINK AND ACT CREATIVELY? ... **CAN WE MITIGATE THE DEBILITATING EFFECTS OF CEREBRAL PALSY?** ... CAN WE IMPROVE NEW ZEALAND'S RELATIONS WITH OTHER COUNTRIES? ... CAN WE REIMAGINE BUSINESS SUCCESS? ... CAN WE UNDERSTAND THE VALUE OF MARINE RESERVES? ... CAN WE PREPARE OUR STUDENTS FOR THE 21ST CENTURY OF WORK? ... CAN WE ENSURE ALL PREMATURE BABIES HAVE A NORMAL LIFE? ... CAN WE ENSURE GOOD GOVERNANCE FOR THE FUTURE OF NEW ZEALAND? ... CAN WE CREATE BETTER MUSEUMS? ... CAN WE MAKE EXERCISE A PRESCRIPTION FOR HEALTH? ... **CAN WE POWER OUR HOMES WITH ELECTRIC CARS?** ... CAN WE INCREASE EDUCATIONAL ACHIEVEMENT BY TEACHING THROUGH THE ARTS? ... CAN WE USE NON-INVASIVE BRAIN STIMULATION FOR THE RECOVERY OF STROKE SURVIVORS? ... CAN WE BE A SUSTAINABLE COMMUNITY? ... CAN WE DRAMATICALLY IMPROVE CANCER SURVIVAL RATES? ... CAN WE USE THE ARTS TO BUILD OUR SENSE OF NATIONAL IDENTITY? ... CAN WE UNCOVER NEW INSIGHTS INTO OUR PAST THROUGH ARCHAEOLOGY? ... CAN WE CREATE WORKPLACES THAT WORK? ... CAN WE PREPARE FOR THE IMPACT OF CLIMATE CHANGE? ... CAN WE OPTIMISE NUTRITION FOR ALL MOTHERS AND BABIES? ... **CAN WE INCREASE THE PUBLIC'S UNDERSTANDING OF ADVANCED TECHNOLOGY?** ... CAN WE BETTER UNDERSTAND THE HUMAN CONDITION THROUGH LITERATURE? ... CAN WE CHANGE THE WAY WE MEASURE SUCCESS IN SCHOOLS? ... CAN WE RADICALLY REDUCE THE INCIDENCE OF HEART DISEASE AND DIABETES? ... CAN WE ENSURE HEART HEALTH FOR FUTURE GENERATIONS? ... CAN WE FUTURE-PROOF OUR FIRMS? ... CAN WE REDEFINE OLD AGE? ... CAN WE CREATE LEGISLATION THAT EFFECTIVELY PROTECTS THE ENVIRONMENT? ... **CAN WE CREATE 5G CELLULAR TECHNOLOGY?** ... CAN WE CONTROL EPIDEMICS OF SEXUALLY TRANSMITTED INFECTIONS? ... CAN WE MAKE CREATIVITY FUNDAMENTAL TO LEARNING? ... CAN WE LEAD THE WORLD IN PERINATAL RESEARCH? ... CAN WE ENSURE EVERY YOUNG PERSON HAS ACCESS TO GREAT TEACHERS? ... CAN WE PRODUCE A GENERATION OF AWARD-WINNING FILMMAKERS? ... **CAN WE HELP DESERVING STUDENTS TO ACHIEVE THEIR ACADEMIC DREAMS?** ... CAN WE HARD-WIRE OUR COMPANIES FOR SUCCESS? ... CAN WE FOSTER CREATIVE WRITERS AND AUTHORS? ... CAN WE BRING THE ARTS INTO BUSINESS? ... CAN WE CREATE A SAFER FUTURE? ... CAN WE MAKE OUR HEALTH SYSTEM MORE EFFICIENT? ... CAN WE MEASURE THE IMPACT OF CULTURAL INSTITUTIONS ON OUR SENSE OF SELF? ... **CAN WE INVEST IN NEW ZEALAND'S LONG-TERM SUCCESS?**

An invitation to
join with us,
for all our futures.

Can we change the future together?

We live in a period of unprecedented and rapid change. Disruption, risk and opportunity confront us in equal measure. Such exceptional times call for exceptional responses – radically new ways to think and act.

Research universities have a unique role in meeting this challenge. Only they generate new knowledge *and* provide the highest levels of formal education. They create – immediately, and for the longer term – opportunities for our society to adapt to the technological revolution and the changing nature of work; to respond to explosive new diseases and intractable old ones; to give all our young people access to high quality education; to address the needs of an ageing population; and to limit and adapt to climate change and environmental pressures.

For the University of Auckland, this has special meaning as we prepare future generations, and future leaders, for a very different world.

Through teaching, research and innovation, and especially in areas where we have proven strengths, we seek to advance our levels of achievement and increase our contribution to society.

The generosity, trust and support of past donors has already enabled us to make significant contributions to our community.

Now the University has launched a new campaign to build partnerships and raise funds to support this important work. It will provide the enhanced resources and strengthened capability needed to have a lasting impact on the challenges we face – to ask audacious questions, and to be ambitious in our search for answers.

Only by working together can we answer the challenge. Will you join us?



Engineering is changing
lives more quickly now
than at any other time
in our history.



Driven by the type of engineering on which our nation has been built, we are now entering an era of unparalleled opportunity for New Zealand. From ingenuity in refrigerated exports to Bruce McLaren taking on the motor racing world, over the last 100 years we have a history of success. How we now seize the opportunity to accelerate the development and application of engineering will define the prosperity and well-being of our country for the next century.

Specifically, as you will see in the following pages, we have the chance to apply our engineering ingenuity to create new opportunities for New Zealand. Rapidly advancing technologies and the beginnings of a new space age industry are opening up possibilities that could transform our country. Equally, our expertise in engineering is going to be critical for building a resilient country in the face of potential devastation caused by our geographic location on the “ring of fire”.

We are a country that is rich in the precious resources of creative talent and our natural environment. It is now imperative that we combine these resources with the cutting edge technologies that will enhance our lifestyle and create value for all New Zealanders. To achieve this, we are working hard in partnerships across industry, society and government.

However, as the world continues to become more competitive, we must intensify investment in the areas of real strength, where we have the potential to make dramatic and lasting change. As New Zealand’s leading Faculty of Engineering, situated within a University that is recognised internationally for outstanding innovation, we are committed to finding creative solutions to build a better world for tomorrow.

Will you help us take up the challenge?

PROFESSOR NICOLAS SMITH
DEAN OF ENGINEERING

Can we supercharge our primary produce markets?

The story of the New Zealand economy is a story of engineering innovation in the food sector.

The *Dunedin*'s first shipment of frozen meat to London in 1882 paved the way for a trade in meat and dairy products that has underpinned our economy ever since. New Zealand's major innovations in process technology have meant that we have been able to respond to the needs of our export markets. Pivotal was the development of air-blast carcass freezing, which enabled mass preservation of meat. Later, in the 1950s, the continuous carton freezer allowed production of frozen boneless beef for the US market following a dramatic rise in hamburger consumption.

Today, the primary sector contributes around half of New Zealand's total export earnings, with about 30 percent of our export earnings coming from the dairy sector. Our economy is highly vulnerable to fluctuations in global supply and demand, and to food safety issues, such as food diseases or contamination.

Researchers in Chemical and Materials Engineering are developing new ways to process food that are safe and retain more of its original fresh flavour and taste. High-pressure processing and pulsed electric field processing were pioneered in our Faculty.

Dairy industry co-operative Fonterra is using software developed with our Faculty and other partners to achieve real-time quality control in milk powder plants. These applications estimate quality measures that are important to consumers, such as the ability of a powder to dissolve, as the food is being processed. This unique technology is key for optimising the value of premium export products.

The same department is also working on designing ways to turn food waste into valuable chemicals. In one example they are working on treating dairy waste water to recover phosphorous – a key element in agriculture and

one which is being depleted in traditional sources – while at the same time cleaning up our waterways. In another waste-to-wealth project, they are working towards turning food waste into acetic acid, better known as vinegar.

Innovation in engineering can benefit our health as well as our economy and environment. Our researchers have shown that by increasing the textural complexity of food, we can trick the brain into thinking that we feel full sooner, decreasing the amount of food we eat – and potentially helping to alleviate the obesity epidemic.

Materials Engineering is also working on a project that could improve nutrition and health for the elderly. As people age their bite force decreases, making many foods difficult to eat and leading to malnutrition. The team's work will help in designing foods that look, taste and feel good – and are easy to eat.

Chocoholics might be surprised to learn that the reason that chocolate “works” – at least from the perspective of a materials engineer – is because it melts at 37°C, body temperature. Changing the micro structure of chocolate to make it shelf-safe in the heat of tropical countries has the potential to open up new markets. Finally, chocolate could also be used to deliver nutraceuticals. For example, by replacing some of the sugar particles with cod liver oil we could support healthy joints.

Refrigeration turned the advantages of a temperate climate into a major economic resource in the late 1880s. Engineering innovation could again determine our country's economic trajectory. Our goal now is to establish a Chair in Food Safety and Food Technologies. By supporting research excellence in our Faculty we can add further value to our backbone industries – and develop “blue sky” pursuits.

Will you help our engineers to create a more robust economy?

“The world is being reimagined more comprehensively and at a faster rate than ever before. In this world, innovation will be the differentiating factor for success. We have an amazing opportunity to succeed by continuing our proud record of innovation, and building on our natural advantages as a country.”

CHRIS LIDDELL CHAIRMAN OF XERO AND THE NEXT FOUNDATION





“We must proceed with courage towards the goal of a more resilient New Zealand. Can we engineers enhance our dialogue with other professions? The optimum solution to minimising disaster can only be gained by conversation and the cooperation of all involved.”

SIR RON CARTER FORMER CHAIRMAN OF BECA, WHO SERVED ON THE ROYAL COMMISSION THAT REPORTED ON THE CANTERBURY EARTHQUAKES

Can we disaster-proof New Zealand?

“A magnitude 8.7 earthquake struck off the east coast of the North Island at 10.08am today, followed less than half an hour later by tsunami waves eight metres high. Multiple fatalities have been reported due to the collapse of buildings and other structures across the Hawke’s Bay region and damage is widespread along the east coast of the country. Power and communications are down in many areas...”

This is news that no-one wants to hear. But a “next event” in New Zealand is inevitable. We just don’t know what type of natural event it will be nor when or where it will occur. The location of the fatal Christchurch earthquake of 2011 took the country by surprise. Yet around 60 percent of earthquakes of magnitude 6.2 or less take place on unknown faults.

The repercussions of even a smaller quake in Auckland are potentially devastating because of the high number of older buildings. From an economic viewpoint, while the Christchurch earthquake resulted in losses of 20 percent of the national GDP, the impact of a significant event in Wellington or Auckland would be far greater.

We cannot halt the occurrence of earthquakes, tsunami, volcanic eruptions or cyclones, but we can prevent these natural events from wreaking disaster on our communities.

The question is: How do we build a more resilient New Zealand?

Our work in the Faculty of Engineering is leading efforts to make our country safer in the event of a significant natural event, collaborating with experts in other institutions here and overseas, and informing government policy.

Following the devastating Canterbury earthquake, academics from our Faculty joined specialist teams to check quake-ravaged buildings and photograph “perishable data” – before it was lost forever. This important field research built on knowledge gained from a seven-year project to develop guidelines for seismic assessment and retrofit of earthquake-prone buildings and fed into the recommendations of the Canterbury

Earthquakes Royal Commission of Inquiry in 2012. It has informed new guidelines on unreinforced masonry buildings, which are found in cities and towns all over the country. By strengthening our buildings we can make our country more resilient in any type of natural event.

In purpose-built facilities at the University’s Newmarket Campus, a concrete structure that represents the wall of a 10-storey building is being used in simulations of the motion during an earthquake. Testing is underway to validate new building standards, find out at what point a structure should be demolished rather than repaired and understand whole-building system responses in a significant event. We have developed innovative devices such as a sliding hinge joint that allows for dissipation of energy at joints between beams and columns in steel buildings.

Researchers in our Faculty are now working to develop the best possible response models in advance of the next event. We are working closely with Auckland Council to develop a resilience model for Auckland, incorporating lessons learnt from studying recovery after bushfires in Australia, the Wenchuan earthquake in China, and the Christchurch earthquake. It’s not enough to have a ready supply of bottled water and batteries. We need effective governance, reliable infrastructure and co-ordinated communities. Our Centre for Disaster Resilience, Recovery and Reconstruction is internationally recognised for its work in developing the “Build Back Better” international framework, part of a blueprint for reducing disaster losses adopted by the UN in 2015.

Our oceans, mountains and volcanic plateaux are part of New Zealand’s unique and beautiful landscape. But we must never forget that our place on a seismic hazard zone also makes us vulnerable to nature’s challenges. We need to invest now in academic leadership roles that will help us all build a country that is resilient to the next challenge, wherever it may come from.

Will you help to ensure that the next major natural event is not the next national disaster?

Can we pioneer a new world of design and innovation?

In a suburban mechanic's garage in Auckland in the 1940s a young boy used to tinker with tools and pester his father's staff with questions. He later went on to study engineering at the University of Auckland. By the 1960s he had become a Kiwi legend, known around the world for his exceptional talent as both a racing car driver and designer, and for his ability to build high-performance teams. His name was Bruce McLaren.

Today, in the Faculty of Engineering, that same sort of curiosity, competitiveness and team spirit drives our Formula SAE teams – students who design, construct and race cars in an annual international competition.

Our Engineering researchers too are fuelled by a need to ask – and answer – difficult questions. They are changing the way that we work and live. Their impact can be seen in businesses and communities across the country and as far afield as Germany, where BMW is using devices developed by our researchers for measuring properties of carbon fibre textiles, and in the US Navy, which utilises testing done in our facilities.

An enormous opportunity exists for New Zealand's economic growth through innovative research and product development, one which can best be realised by bringing together engineers, scientists, creative designers and business people.

At our Newmarket Innovation Campus we're working with industry and research partners, who are increasingly co-locating on site. Through the NZ Product Accelerator we're networked with more than 400 businesses around New Zealand and offshore, developing new products and services, building supply chains and using research to assist exporters to get a competitive advantage.

In one project, researchers are advancing a new type of refrigeration system, changing the surface design at the

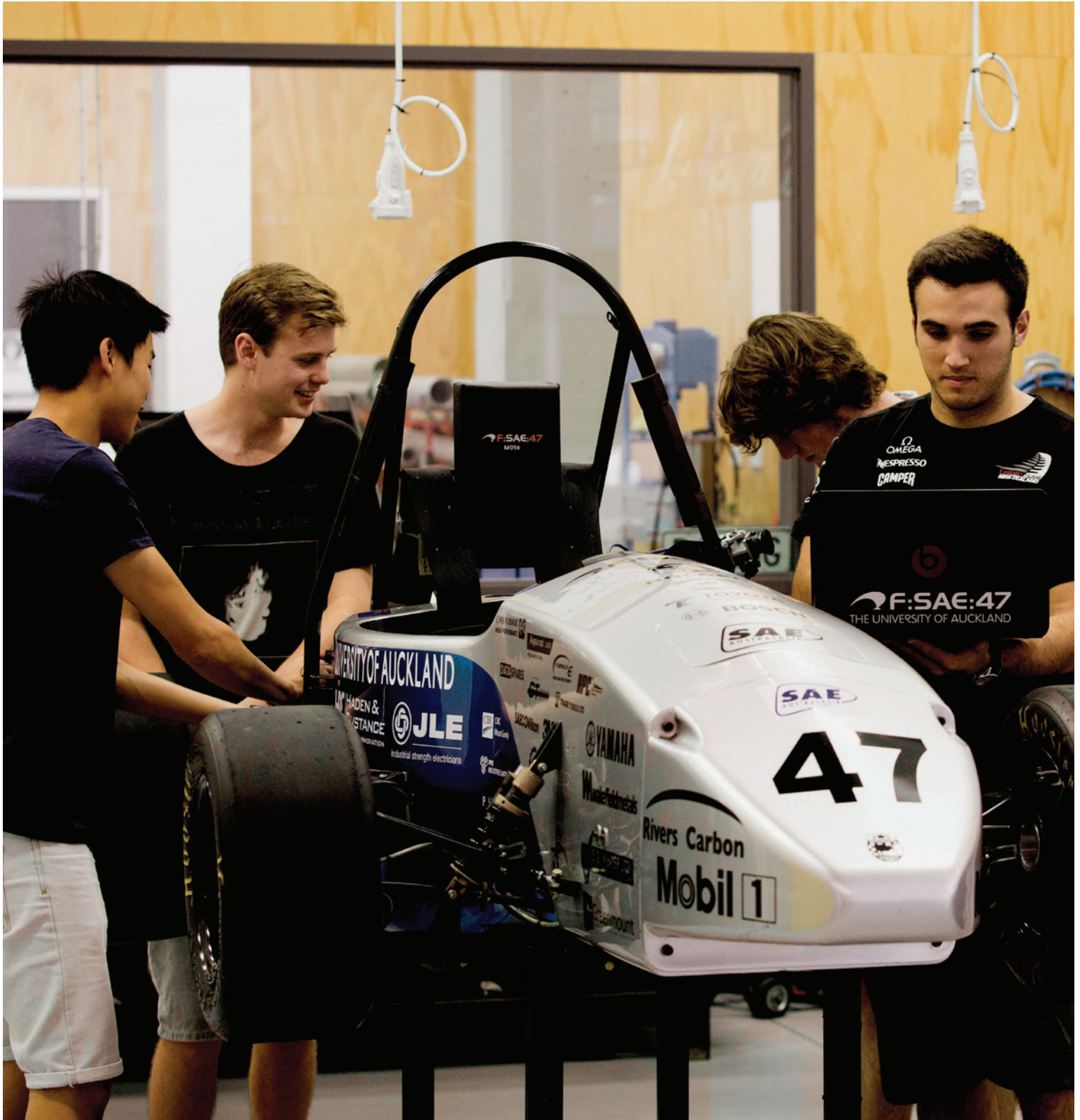
sub-micron level, for use in appliances, air conditioning and meat refrigeration companies and dairy factories. We are designing and manufacturing fire retardant materials for use in fire engines which are manufactured in Lower Hutt and exported to Australia, and developing thermo-setting composite materials for use on aeroplanes – materials which don't emit toxic gases if they catch fire. We are producing novel plastic materials, seen in McDonald's playgrounds and Disney parks, and high performance carbon fibre for use in superyachts.

We are also exploring additive manufacturing of short runs with partners such as Air New Zealand, whose spare parts are currently coming from Europe or North America at a high cost.

Another key area is automation. Already robots utilising expertise from our Faculty have been used in the health sector, assisting older people at home after being discharged from Middlemore Hospital by reminding them to take their medication, and checking vital signs before a consultation with a doctor at Gore Health. In the agritech sector, we're working with industry on robots to pollinate or pick apples and kiwifruit. The new focus is on how humans and robots work together. And the opportunity for New Zealand is in not only using automation in our own industries but in developing this advanced technology for export.

Bruce McLaren was founder of the McLaren motor racing team and the youngest ever grand prix race winner. His is a global success story that we must recreate for a new generation. Together we can build a Bruce McLaren Centre inspired by Bruce's success to create an innovation hub and inspire exceptional engineering talent and achievement, locally and globally.

Will you help to inspire the new knowledge required to address the challenges of tomorrow?



“In 1958 my father became the youngest driver to win a F1™ championship race, a record he held for over 40 years. After his death in 1970, the mechanics at the factory were told to stay at home as a mark of respect. But every single person returned to work. When asked why, they said that Bruce wanted to build cars and win races and that was what they were going to do, ‘for Bruce.’”

AMANDA MCLAREN DAUGHTER OF BRUCE MCLAREN



Can we propel New Zealand into a new space age?

The first Moon walk, on 20 July 1969, was one of the most significant technological events in the history of humankind. The achievement in itself was a triumph. Its importance was also due to the spin offs from the programme that sat behind it, the thousands of technologies that are now routinely used in day-to-day living – CAT scanners, computer microchips, freeze-dried food, memory foam, home insulation, to name just a few.

Humanity is now on the cusp of a new space age. It is highly likely that astronauts will again walk on the Moon, after an absence of over forty years. It's even possible that the Moon will provide a launching pad for sending rockets to Mars and for further exploration of the Solar System. As well as the mega projects of governments, commercial and private ventures are becoming increasingly common, and the notion of space tourism is set to move from science fiction to reality.

As space technologies develop and decrease significantly in cost, New Zealand is developing its own space industry. Because satellites are launched towards the east to use the spin of the Earth for orbital velocity, New Zealand's geographical location alongside the wide open expanse of the Pacific Ocean makes us ideally situated for this developing industry. The NZ Space Agency, formed in 2016 within MBIE, is encouraging New Zealand's participation in the global space economy. To exploit this exciting opportunity, our nation needs a workforce for this industry.

A new student competition based in the Faculty of Engineering is aimed at ensuring this happens. The Auckland Programme for Space Systems requires students to work in multi-Faculty teams to design and build a CubeSat-sized satellite that will be sent into orbit, as well as formulating the idea for the purpose of the mission and mapping a business model around it. It draws on expertise from astrophysics to archaeology,

encompassing the STEM subjects – science, technology, engineering, and maths – plus arts, creative arts and industries, and business. New Zealand company Rocket Lab has undertaken to help launch the winning satellite on one of its Electron rockets, from its launch facility on the Mahia Peninsula, south of Gisborne.

We are already contributing to the space race through our expertise in lightweight materials. Our graduates are working in industry, for example designing composite structures at Rocket Lab. Students in our Faculty are designing a launcher system for CubeSats, structures which have to be exceptionally lightweight, rigid and strong, and able to withstand substantial g-forces, vibrations, and both high and low temperatures during launch.

We must ensure that New Zealand is poised to take advantage of our place in the physical world and the opportunity for more businesses to become involved in space by building a critical mass of students who will go on to lead the field.

Will you help to launch a New Zealand space industry?

“I've always loved the idea of space, it's something that has intrigued me since I was a little kid. A few years down the track I would love to be working in the space industry, playing a part in satellite manufacturing and design or working on ground systems, as this is what interests me especially after the knowledge I have gained through my engineering degree.”

ASHANI PERERA WHO IS STUDYING FOR A BACHELOR OF ENGINEERING IN MECHATRONICS AND A BACHELOR OF COMMERCE MAJORING IN FINANCE



Can we work in
partnership?

Achieving the audacious and aspirational requires commitment and continuity, and the security of knowing that support is there – in a shared vision, in advocacy and in philanthropy. There are many ways to assist the University’s people and their work.

Philanthropically supported fellowships, academic positions and chairs attract and sustain academics of international standing, to lead teaching and research that will change society for the better.

Research grants allow those academics and postgraduate researchers to do innovative work that would otherwise not be possible.

Philanthropic funds support innovation and enterprise and provide opportunities for research to be rapidly applied in the community.

Scholarships, internships, international study experiences and enhanced learning environments attract exceptional students, not just from New Zealand but from throughout the world, and allow them to flourish.

All these will help create the leaders of tomorrow and drive the translation of discovery into the revolutionary technologies and innovation that will shape New Zealand’s future.

We are inviting you to join us today for a better tomorrow.

Can we start now...
for all our futures?



Ways to support the Campaign

There are a wide number of ways in which alumni and friends of the University can provide support for its mission – to educate present and future generations and generate transformational research and innovation. They include philanthropic gifts, mentoring, volunteerism and advocacy.

Philanthropic support

Making a financial gift, at whatever level, is valued support and can be carried out in a number of ways:

- A current use gift for immediate use, for example to support a scholarship or research project.
- A pledge to give an agreed amount over a specified number of years, or indefinitely.
- An endowment to provide support in perpetuity (invested with the University of Auckland Foundation, a percentage of the income is used each year while the balance is reinvested to maintain the value of the original gift).
- A gift to the University in your will.
- Donations through annual and specialist appeals.

The University of Auckland Foundation and the University of Auckland are both New Zealand registered charities. We acknowledge with thanks the participation of the University of Auckland students who took part in the photography for this booklet.

