

Clean sweep for Hamilton schools at ChemQuest

Hamilton schools took out the top five prizes at the University of Waikato's ChemQuest challenge, held earlier this month on campus.

First place went to Jordan Sahlie, Codi Merito and Nicolaas Portegys, from Hamilton Boys' High School. The students were awarded the James and Wells trophy, \$150 and a gold medal each. This was also the first time in the 16 year history of the contest that Hamilton Boys' High School has won first place.

Second and third place went to separate teams from St Paul's Collegiate, followed by another team from Hamilton Boys' High School in fourth place and Hamilton Girls' High School coming in fifth.

The annual quiz gives Year 12 chemistry students the chance to put their chemistry knowledge to the test in a pop quiz-style challenge. All the questions relied on a basic knowledge of chemistry, but many rounds also relied on good general knowledge. Questions were based on demonstrations featuring exploding hydrogen balloons, light sticks and a flying astronaut, while others involved well-known songs and movies which refer to chemistry.

"This year was quite exceptional in that all the winning teams came from Hamilton schools. This has happened in the past but is not particularly common, since ChemQuest is very well supported by both local and regional schools. Hamilton Boys' High School also won the NZIC Analytical Chemistry Competition for Year 13 students earlier in the year, so have had a fantastic year of success in chemistry," says event organiser Dr Michele Prinsep.

The after-school event was held at the University of Waikato on 16 October and was attended by around 150 students from schools from Hamilton, the wider Waikato region, the Bay of Plenty and Taupo.

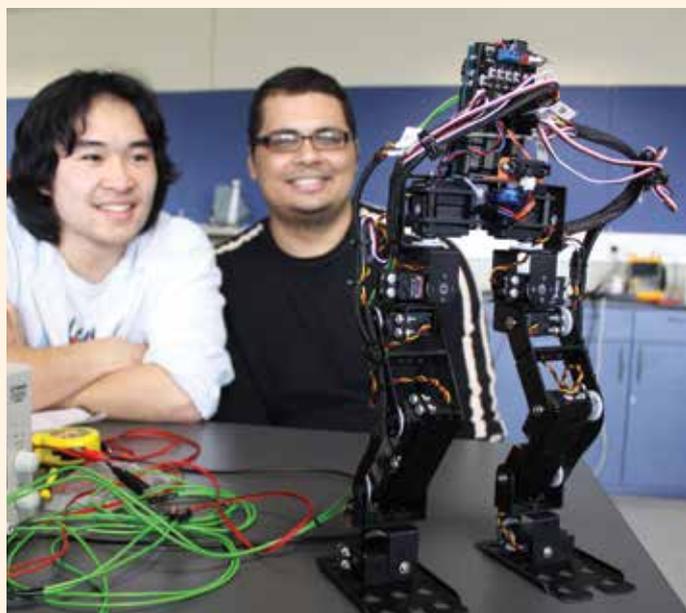


ChemQuest's Hamilton winners: Back row from left: Jordan Sahlie, Patrick Webb and Daniel Carson (Hamilton Boys' High School), Emma Walker, Sahil Patil and Kendal Buchanan (St Paul's Collegiate), Ashleigh Miles, Cecelia Lockley and Anna O'Hara (Hamilton Girls' High School). Front row from left: Adam Cameron, Sukhjit Sarah, Jordan Ogilvy and Callum Connell (St John's Collegiate). Absent: Codi Merito and Nicolaas Portegys (Hamilton Boys' High School).

ChemQuest is sponsored by the University of Waikato's Faculty of Science and Engineering, the New Zealand Institute of Chemistry, James & Wells Intellectual Property and Hill Laboratories.

View more photos: www.facebook.com/WaikatoScienceEngineering

Robot building an exciting challenge for Waikato students



Links, servo motors, a micro-controller and a whole lot of student brain power are behind the creation of an autonomous biped robot which can walk by itself.

Fourth-year University of Waikato electronic engineering students Martin Lam and Gordan Wildschut have been working on the robot since April, as part of their Bachelor of Engineering (Honours) research project.

"We were given a basic kit which only had aluminium links. We then arranged them in a specific (human-like) configuration along with the servo motors, to create the robot. Each joint of the robot is rotated by a servo, which is controlled by a micro-controller," says Gordan.

"Ultimately we set up a cartesian co-ordinate system for the robot to move around in. We would feed a set of co-ordinates to the system and it calculates all the required angles for the servos. This allows us to freely control the robot using only a simple set of co-ordinates," says Martin.

The boys' research project was part of the Carter Holt Harvey Pulp & Paper Engineering Design Show, held 15-16 October. More over the page.

Swimming stoats and prancing penguins

University of Waikato Animal Behaviour research has been in the spotlight recently due to recent discoveries made by Faculty of Science & Engineering staff and students.

How far can a stoat swim?

Stoats are generally considered capable of swimming up to about 1.5km, but the discovery of a stoat on Rangitoto Island (3 km offshore) in 2010, and another on Kapiti (5 km offshore) in 2011 suggested they may be able to get their little legs paddling for much greater distances.

University of Waikato Associate Professor Carolyn (Kim) King and a team from the Faculty of Science and Engineering decided to find out just how far.



Prof King bought ten stoats from Lincoln University, flew them to Hamilton, allowed them to jump into a water-filled flume with a continuous current flowing through it, and watched them go.

One female covered 1.8km in nearly two hours of non-stop swimming, while three others swam strongly for more than an hour and another four chalked up between 20 and 40 minutes paddling.

After their swimming efforts, the stoats were taken for blood tests to measure their blood glucose. Those which swam longest had consistently lowered blood glucose levels, consistent with hypoglycaemia induced by intense exercise.

While the results were not conclusive, the study did show that stoats were capable of swimming much greater distances than previously thought, a fact which has implications for offshore island wildlife sanctuaries once believed to be at little or no risk of invasion by stoats.

Penguin fight club

Research recently published about the victory dances of Little Blue Penguins has also been making a splash in the media.

Fieldwork carried out in Flea Bay on the Banks Peninsula by Biological Sciences Professor Joseph Waas and a team of researchers, showed that these small birds build their reputation with a noisy 'dance' performed after a fight.

It is thought to be the first time researchers have managed to establish a link between animals' after-fight antics and the effect this has on their peers.

To uncover what effect the post-fight behaviour had on other penguins, the research group recorded the braying calls a group of penguins made after a brawl. Fake eggs were then used to measure the heart-rates of nearby brooding penguins in their burrows, while they listened to the recordings.



The results showed that the voice of the winner increased stress levels, while the voice of the loser did not. This suggested that the penguins are continually building up a reputation with others in the colony.

Penguin story details sourced from Fairfax NZ News.

Interested in Animal Behaviour?

Find out more: www.sci.waikato.ac.nz/study/subjects/animal-behaviour

The seed-y side of engineering design

Planting thousands of seeds by hand is a tedious job, but with the help of University of Waikato engineering students, this task could now be much simpler for tree improvement and treestock production business ArborGen Australasia.

As part of a third-year mechanical engineering design paper, seven teams of students were asked to create a prototype that could distribute one pine tree seed in each compartment of a seedling tray in the shortest time. The inventions were tested at the Carter Holt Harvey Pulp & Paper Engineering Design Show which ran 15-16 October.

The winners on the day were Sam Brien, Jeff McDowell, Josh McIntyre and Phill Ross, whose prototype seeder was judged the easiest to use by Antoinette Roberts, an ArborGen Australasia Nursery Manager.

ArborGen Australasia previously funded a University of Waikato research project in which a group of Waikato engineers created a dibbling machine that efficiently plants pine tree seedlings so that they grow straight.

"This project took care of the second stage of the pine tree planting process, so ArborGen



Mechanical engineering students demonstrated their prototype seeders at the Carter Holt Harvey Pulp & Paper Engineering Design Show.

Australasia came back to us and asked for a machine that could mechanise the first stage, which is planting the seeds in the seedling trays," says University of Waikato engineering technician Alan Smith.

Judge Antoinette Roberts said she was extremely impressed with all seven prototypes involved and

choosing a winner was a hard decision. She based her decision on what she saw to be the best fit in terms of speed, accuracy and usability for their company, and stated that she could see a lot of potential for the winning seeder in the future.

View more photos:

www.facebook.com/WaikatoScienceEngineering

UltraFast field trip

Waikato University Computer Science students gained an insight into UltraFast Fibre during a recent class field trip.

The visit to the UltraFast Fibre exchange in Hamilton was hosted by UltraFast Fibre's engineering manager and network specialist.

The students gained an insight into the New Zealand fibre roadmap as well as the Hamilton fibre network and setup, and were able to make real-world comparisons between the work being done and their 'Carrier and ISP Networks' Computer Science paper.

Ultrafast Fibre Ltd was established by WEL Networks Ltd in 2010, in order to help fulfil a Government initiative to rollout ultra-fast broadband across New Zealand. Ultrafast Fibre is building a 3,000km fibre network across the central North Island. The network will enable kiwi businesses and homes to connect to a new generation of ultra-fast broadband.



Sport and study combo

As his study comes to an end, Michael Fowke has taken up work and sporting opportunities on the other side of the world; opportunities that opened up as a result of his time at the University of Waikato.

In mid-September, the Hillary Scholar and badminton star made the journey to the Netherlands to work with agriculture and horticulture research company BLGG in Wageningen. The company uses ADAMS - Advanced Data mining and Machine Learning System - software developed at the University. Michael will finish the final course-work for his degree, a Bachelor of Engineering specialising in software, while he is overseas.

Michael had previously been awarded two summer research scholarships in the Computer Science department working with the ADAMS software, and it was this experience that has helped pave the way to the job at BLGG.

"I feel very lucky. Everything's coming together perfectly," he says. "The best thing about being a Hillary Scholar is that I haven't had to choose study over sport, I was able to do both."

Michael says his biggest achievement in badminton to date is winning the men's singles final at the National Badminton Championships in Auckland earlier this year, taking down his coach and top seed T J Weistra for the first time.

Weistra is a former Dutch international and world senior title winner, and has been Michael's coach for as long as Michael can remember. It is through Weistra that contact has been made with badminton club BC Amersfoort, where Michael will play while he is in the Netherlands.



Best of both worlds: Hillary Scholar Michael Fowke is living in the Netherlands to work and play badminton.

The former Hillcrest High School student is looking forward to playing badminton in Europe "where the competition is taken very seriously". He sees playing the European season as the perfect lead-up for a shot at representing New Zealand in the 2014 Commonwealth Games in Glasgow.

Sir Edmund Hillary Scholarships are the University of Waikato's most prestigious scholarships and are awarded to students who are high academic achievers who are also achieving in the arts or sport. Scholars have their course fees covered, receive specialist coaching and mentoring and take part in personal development and leadership programmes.

Find out more: www.waikato.ac.nz/about/hillary

Waikato launches MOOC on data mining

The first MOOC (massive open online course) from a New Zealand university was launched by the University of Waikato recently, in one of the most exciting fields of contemporary computer science – data mining.

For Waikato's Department of Computer Science, the choice of Data Mining with Weka for a MOOC was an obvious one - students around the world are already familiar with the software and have written and uploaded tutorials on YouTube.

"The open source Weka software was developed here at the University, and it's been downloaded over half a million times," says University of Waikato Professor Ian Witten.

Through this MOOC, the University of Waikato has made available the expert knowledge of its researchers and teaching staff in a structured online environment. Extracts from the book Data Mining: Practical Machine Learning Tools and Techniques – co-authored by Professor Witten and now in its third edition – is available within the course and students who pass two tests will receive a statement of completion.

A series of videos simply and clearly explain how the course works, what students will need to complete it and what they will get at the end of it.

Data mining –also known as machine learning – has enormous potential as more and more of daily life is conducted online, generating

vast amounts of information. Until recently, analysing that data in a way that was useful and relevant has been beyond most people's capability.

But not anymore. With the rise of software such as Weka (Waikato Environment for Knowledge Analysis), huge quantities of raw data can be sifted and analysed, extracting information on every aspect of life, from traffic flows on city streets to which restaurants people are eating at. The Weka workbench, an organised collection of state-of-the-art machine learning algorithms and data preprocessing tools, has been used in a wide number of applications.

The current course has closed. Read more at: www.weka.waikato.ac.nz

Chemistry

Create positive change for future generations with a degree in Chemistry at the University of Waikato.

Which degrees include Chemistry as a major?

You can study Chemistry as a major in the Bachelor of Science or Bachelor of Science (Technology). Chemistry can also be taken as a second major or supporting subject within most degrees at Waikato University.

What subjects do I need to study at school?

The normal entry level into 100 Level Chemistry papers is 16 credits at NCEA Level 3 in Chemistry. NCEA Statistics, Calculus and Biology are also highly recommended.

What papers can I expect to take in my first year?

During your first year of full-time study you will take a selection of eight papers. To major in Chemistry this must include CHEM111 - Structure and Spectroscopy, which covers analytical and inorganic chemistry, plus CHEM112 - Chemical Reactivity, which includes physical and organic chemistry.

What about papers in my second year and beyond?

From year two you have the opportunity to branch off into your area of interest. Papers cover a wide range of topics including organic chemistry, inorganic chemistry, physical chemistry, environmental chemistry, geochemistry, and forensic, toxicological and medicinal chemistry.

Grab a copy of the Chemistry brochure

Check out the Chemistry brochure, which outlines in more detail the study options available. Download the brochure from www.sci.waikato.ac.nz/about-us/chemistry or request a hard copy via science@waikato.ac.nz

Career Opportunities

AGRICULTURE

BIOCHEMISTRY

BIOSECURITY

BIOTECHNOLOGY

BREWING

CHEMICAL TECHNOLOGY

CONSERVATION

DENTISTRY

ENGINEERING

ENVIRONMENTAL SCIENCE

FOOD & DAIRY

FOOD TECHNOLOGY

FORENSIC SCIENCE

FORESTRY

GOVERNMENT

MARINE STUDIES

MATERIAL SCIENCE

MEDICINE

MICROBIOLOGY

PHARMACEUTICALS

PHARMACY

PYROTECHNICS

TEACHING

Student ambassador: Alice Wang



Multiple scholarships, a year working in London and a highly regarded Bachelor of Science (Technology) (BSc(Tech)) degree from Waikato, have made study an exciting journey for former Hillcrest High student Alice Wang.

"I majored in Biochemistry for my undergraduate studies but I took a lot of Chemistry papers. I'm now completing my Master of Science in Chemistry, and my research will focus on the characterisation of bioactive compounds from marine natural products and their biological modes of action within a cell."

"In the final year of my BSc(Tech), I got the amazing opportunity to go to the UK to complete one of my work placements. I spent 12 months at Tata Global Beverages in London, where I really enjoyed working in research and development. I also took the opportunity to travel around Europe in my spare time."

The London placement was a highlight for Alice and she says the opportunity was an amazing chance for her to put the theory she had learnt in class in to practice. The work placement programme is coordinated by the University's Co-operative Education Unit. Most placements are paid and all contribute to course credit.

New chemistry papers



From 2014 the Level 100 papers offered in Chemistry are changing. Following on from this, changes will also roll out to Level 200 papers in 2015 and Level 300 papers in 2016.

Majoring in Chemistry?

As stated to the right, CHEM111 and CHEM112 are the two compulsory Level 100 papers when majoring in Chemistry. These replace CHEM101 and CHEM102 (currently available this year). Entry into each paper is 16 credits at NCEA Level 3 in Chemistry.

Majoring in another subject, but need Chemistry?

Students who require some Chemistry background for a major other than Chemistry, should consider taking the brand new paper CHEM100 - Chemistry for Life and Environmental Sciences. The entry for CHEM100 is NCEA Level 1 Science.

Engineering change in industry waste

Following undergraduate and postgraduate engineering study at the University of Waikato, Aaron Low has taken his knowledge of materials and process engineering to a whole new level at Bakels Edible Oils in Mount Maunganui.

"Bakels refines edible oils for local and international markets. My role as a process optimisation engineer involves increasing productivity and product quality, while reducing the amount of waste being produced. I've made a good start, but there are still plenty of exciting opportunities for further improvements," says Aaron.

"Specific projects I've been involved with include investigating novel



ways to generate energy from a solid waste produced on site, and investigating the use of waste oil from our site as an alternative fuel. This has the potential to save Bakels a lot of money as the price of fuels and waste disposal increases."

A past Hamilton Boys' High School student, Aaron chose to study at the University of Waikato

for its interesting subjects, small class sizes, good location and excellent reputation.

"It meant I could remain close to family. I also liked Hamilton because it was central to good locations for outdoor activities like tramping and hunting."

Aaron's fascination with reducing waste in industrial processes began as an undergraduate student completing his Bachelor of Engineering degree in Biochemical Engineering*. His fourth-year project involved developing methods to remove colour from red blood cell concentrate, a waste product from meat processing. Due to the success he found, he was asked to stay on for a PhD, during which he worked on removing the colour and smell from bloodmeal (another by-product from meat processing) and converting that material into a bioplastic.

"I achieved this and obtained several journal publications, a provisional patent and attended several international and local conferences."

"In the short term I want to gain as much practical experience as possible, to complement what I learnt at university and reduce the effects of waste and fuel in New Zealand industrial practices. Further into the future I hope to become a university lecturer, as I enjoy teaching, research and interacting with students."

*Note: Since Aaron's time at the University of Waikato, the Bachelor of Engineering is now a Bachelor of Engineering (Honours) and Biochemical Engineering is now Chemical & Biological Engineering.



Keeping Queensland's coasts clean

From coordinating a 'Say No to Plastic Bags' project, to the biannual 'Mackay Coastal Clean Up', life working for emerging not-for-profit organisation Eco Barge Clean Seas Inc. in Queensland has made years of study all worthwhile for University of Waikato graduate Fiona Clarkson.

"Eco Barge Clean Seas Inc. is what I like to call an 'up and coming' environmental not-for-profit organisation based in the Whitsunday region. My work involves co-ordinating a range of new projects for the organisation and helping out with our core role of removing marine debris from the Whitsunday Islands," says Fiona.

The marine debris removal trips allow Fiona and her colleagues to visit islands within the Great Barrier Reef marine park, which are inaccessible to most tour operators.

"Even the seemingly pristine and protected corners of the world are seriously impacted by conservation issues like marine debris."

The former Fairfield College student took a gap year, which she spent working in the hospitality industry, before deciding to study at Waikato because of its proximity to her family, friends and Raglan beach.

"For my undergraduate studies I completed a degree in Sport and Leisure with supporting papers in Biological Sciences. This allowed me to combine my love for the adventure tourism industry with practical scientific knowledge, particularly in ecology. More and more tourism operators are now leaning towards the 'eco' element in their operations."

Before beginning her Master of Science (MSc) Fiona worked as an eco tour guide in Raglan for a kayak company. Her masters research was based on the population of genetics and ecology of endemic shrub epiphyte *Pittosporum cornifolium*.

"My MSc both extended my scientific knowledge base and allowed me to spend time outdoors. It was great! I got to go kayaking, on bush walking expeditions and even tree climbing. My masters also led me to my previous job as an environmental research assistant for the Environmental Research Institute at the University of Waikato, which in turn led me to my current position here in Queensland".

Read more graduate stories:

www.sci.waikato.ac.nz/study/student-profiles

Current student experiences

Choosing a career can be difficult. Often the best research you can do is to talk to or read about others who have been in the same situation. Check out four of Science & Engineering's 2013 Student Ambassadors below. Read more about their study choices and those of others at www.sci.waikato.ac.nz/study/student-profiles



Kirsten Nel

Degree: Bachelor of Engineering (Honours)

Subject: Electronics

School: Fraser High School, Hamilton

"At the end of our second and third years Waikato staff help us to find paid work placements which are carried out over the summer holidays. The work load ratio in terms of theory vs practical is pretty even, which means that we spend just as much time learning as we do putting those concepts into practice."



Sanjay Patel

Degrees: Bachelor of Science/Bachelor of Business Analysis

Subjects: Chemistry and Finance

School: Kerikeri High School, Kerikeri

"Practical work is such a nice change from theory and can be quite fulfilling. In the first year we built and raced boats in an engineering paper, while last summer I was granted a \$5000 Summer Research Scholarship, that went towards research in which I used computational chemistry to investigate phosphine-ozone complexes in the atmosphere."



Lindi Engelbrecht

Degree: Bachelor of Engineering (Honours)

Subject: Chemical & Biological Engineering

School: Sacred Heart Girls' College, Hamilton

"The small class sizes in comparison to other universities mean you aren't just 'another number'; lecturers actually know your name."

Highlights of her study so far have included scholarships, awards and completing engineering design projects.

"It has been very humbling and gratifying to receive scholarships and awards, and engineering design projects have added an exciting element to the degree. In my first year we competed in the boat design challenge, in my second year we did an automated compost unit and so far in my third year we've completed a distillation design."



Ashleigh Weatherall

Degree: Bachelor of Science (Technology)

Subject: Animal Behaviour

School: Mahurangi College, Warkworth

"My goal is to improve the welfare of captive animals and conserve endangered species."

Ashleigh chose Waikato for its proximity to her home, and because she could complete a major in Animal Behaviour with supporting papers in physiology.

"Highlights from my study so far have been shaping hens' behaviour in the Ruakura animal lab and observing capuchin monkeys' behaviour at the Hamilton Zoo during a class field trip."

Statistics

The word statistics conjures up images of tables of number or graphs. However, the subject statistics is much more than that - it is the science of collecting data and extracting information from that data.

Statistical analysis is used to make informed decisions in most areas of human endeavour, such as agriculture, industry and commerce, law, medicine, forestry, psychology, insurance and economics.

More than that, an understanding of statistics is essential to critical thinking: a skill that is useful in everyday life. Studying statistics makes you more aware of how data can be used and misused to persuade you to vote for a political party, to purchase consumer goods, to form opinions on social issues, and many other everyday decisions.

Which degrees include Statistics as a major?

You can study Statistics as a major within a Bachelor of Science. Statistics can also be taken as a second major or supporting subject within most Waikato degrees.



What subjects do I need to study at school?

To enrol in 100 Level papers for the Statistics major you will need 18 credits at Level 2 NCEA Mathematics, or 14 credits at Level 3 NCEA Statistics, Calculus or Mathematics.

What type of papers can I expect to take in my first year?

During your first year you must complete either STAT121 - Introduction to Statistical Methods OR STAT111 - Statistics for Science, as well as MATH101 - Introduction to Calculus, and MATH102 - Introduction to Algebra. In addition you must select four electives which are recognised as science papers and one elective from any subject.

What about papers in my second year and beyond?

From year two you will move onto more advanced topics, theory, and applications of statistics; such as statistical data analysis, Bayesian statistics, design and analysis of experiments and surveys, and statistics for quality improvements. There are also two specialisations available - Economics and Databases.

For more information visit www.cms.waikato.ac.nz and check out the Computing and Mathematical Sciences Faculty Handbook.

2013 Census – NZ population statistics



Statistics New Zealand is the country's major source of official statistics and as a government department, holds a Census every five years. The most recent Census of Populations and Dwellings was held on 5 March 2013. It took a snapshot of the people in New Zealand and the places we live.

Population information from the Census helps determine how billions of dollars of government funding is spent in the community. It is used to make decisions about services such as hospitals, schools, roads, public transport, and recreational facilities.

The statistics noted below, are just a few which have been released in October, ahead of the full reports which will be released in December. All statistics are measured against the 2006 Census.

Population statistics

- Since the 2006 Census, New Zealand's 'usually resident' population count as at 5 March 2013 was 4,242,048 – an increase of 214,101 people (5.3%).
- All regional council areas showed population growth or steady populations between 2006 and 2013, except for Gisborne, which had a small decline of 843 people.
- Auckland was the fastest-growing region, increasing 8.5% to 1,415,550 as at the 2013 Census – the equivalent of adding a city about the size of Tauranga to the region.

Information sourced from www.stats.govt.nz

Research case study: Statistics proves secret weapon in fight against invasive species

Clever use of statistics is helping to keep a small island off New Zealand's southernmost tip rat-free.

Pearl Island is the first island in the world where simultaneous eradication of all three invasive rat species has been attempted, but subsequent monitoring detected the presence of rats nine months after the initial eradication.

The question for the ecologists was: were these rats survivors from the original rat population or had they reinvaded from nearby Stewart Island?

By analysing material from captured rats, a team of statisticians including Dr Steven Miller from the University of Waikato, found they were likely to be reinvaders, which suggested that while the initial eradication had been successful, rats were swimming to Pearl Island at a much greater rate than anticipated.

"Using DNA profiling is much easier than relying on physical tagging to identify rats," says Dr Miller. "But there's lots of uncertainty when you're matching genetics of different populations, and this is where statistics comes in handy."

"You're weighing up probabilities to determine the best management strategy. One of the most successful rat eradication programmes has been in the Bay of Islands where genetic analysis contributed to the decision to tackle rats on all the islands at the same time."

Career Opportunities

BIOMETRICS

GOVERNMENT STATISTICS

INDUSTRIAL STATISTICS

INSURANCE AND FINANCE

MARKET RESEARCH

MEDICAL STATISTICS

METEOROLOGY

TRADE ANALYTICS

New videos out soon



Interested in studying science or engineering at Waikato? Want to experience our facilities and campus without leaving home? Now you can.

See Science

Join current student Aaron Huesser as he gives you a taster for what it's like to study science at Waikato. Originally from Francis Douglas Memorial College in New Plymouth, Aaron began his time at the University with a Bachelor of Science majoring in Earth Sciences and Environmental Sciences. He then moved on to a Master of Science focusing on petroleum and

sedimentary geology.

From the Chemistry and Physics labs, through to tree climbing, lake experiments and Antarctic research equipment, you'll see a little bit of everything, first-hand from a student who's right at the centre of it.

Explore Engineering

Bachelor of Engineering (Honours) student, Elizabeth Geddes will show you why she chose Waikato and why you should too. Start your tour in the School of Engineering's Large Scale Lab, check out the autonomous biped robot in the electronics workshop and head down to the University's Village Green where students meet to hang out. You'll enjoy all this and more with former Whangarei Girls' High School student Elizabeth as your guide.



The videos will be available soon on our home page.

Visit www.sci.waikato.ac.nz

2014 wall planners out now



The new 2014 Science & Engineering Wall Planners have been sent to all HOD Science teachers in our catchment area. Each planner includes secondary school term dates, University of Waikato semester dates, public holidays and all our Faculty events.

The wall planner was designed by Sam Marelich a Bachelor of Communication Studies/ Bachelor of Media and Creative Technologies student, formerly of Hamilton Boys' High School. It replaces the Nearing Zero Calendar, which has traditionally been available.

Careers advisors and teachers, if you would like an extra copy, please email science@waikato.ac.nz to make your request.

As this is the first time we have created a wall planner, we would appreciate any feedback you may have. Please email feedback to the email address above.

What's on - 2014

16 MAY 2014

University Open Day

Attend mini-lectures and info sessions on degrees, check out the science and engineering labs and enjoy interactive activities throughout the Waikato University campus.

10-11 JUNE 2014

Waikato Experience Biology Days

Year 13 Biology students and teachers are invited to attend seminars and lab work covering topics such as DNA technology, human evolution, biotechnology, and animal behaviour/plant responses to the environment.

Visit www.sci.waikato.ac.nz/webdays

12-13 JUNE 2014

Osborne Physics and Engineering Days

Talks and practical demonstrations focus on applications of physics, and provide students with examples of how the physics they are learning at school can be used in real life.

Visit www.sci.waikato.ac.nz/ospendays

18 JUNE 2014

NZIC Analytical Chemistry Competition

Teams of Year 13 students are set an analytical task, requiring accurate and careful analysis of an unknown substance.

Visit www.sci.waikato.ac.nz/chemcomp

9 JULY 2014

Science Open Day

This event offers students and their parents the chance to explore the areas of science available to study at Waikato University through hands-on workshops.

Visit www.sci.waikato.ac.nz/scienceopenday

10 JULY 2014

Engineering Open Day

Spend the day on campus with staff and students, experiencing engineering through hands-on workshops.

Visit www.sci.waikato.ac.nz/engopenday

Contact us

Science & Engineering

Phone +64 7 838 4625

Fax +64 7 838 4218

Email science@waikato.ac.nz

Toll free 0800 438 254

www.sci.waikato.ac.nz

Computing & Mathematical Sciences

Phone +64 7 838 4322

Fax +64 7 838 4155

Email cms@waikato.ac.nz

www.cms.waikato.ac.nz



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