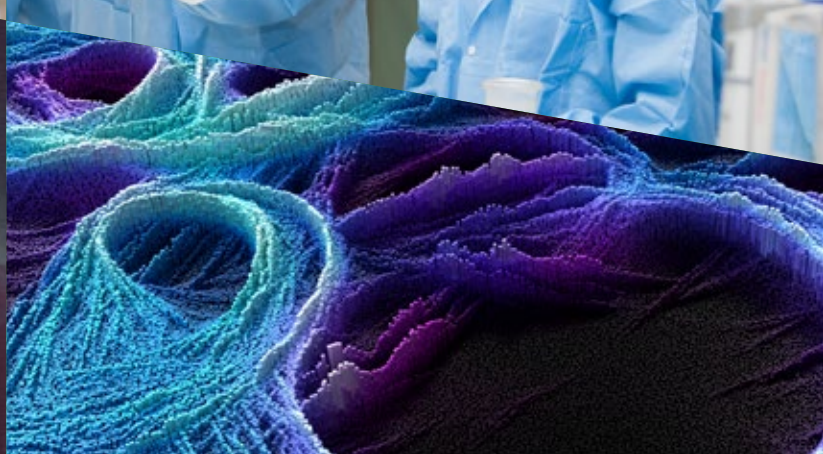
APRIL 2019

AUT

Pūtaiao i AUT

SCIENCE AT AUT

AUTUMN UPDATE



A MESSAGE FROM THE HEAD OF SCIENCE

Kia ora koutou,

Welcome to our first science newsletter for 2019. I am sure you will agree that the research we have highlighted in this issue varies from substantially beneficial to the community (new breast cancer diagnostic tools that will increase the timeliness of appropriate treatment) to the very intriguing (collaborations with NASA).

I hope there will be a lot of interest in our proposals for free professional development opportunities for teachers and in our Royal Society Medallist presentations this year.

Last year, we introduced three new majors – Psychology, Molecular Genetics and Geoscience – and a new four-year postgraduate degree that the best students can enter straight from school. There has been an enthusiastic uptake of the new degree and encouraging enrolments in this, the first year it has been offered.

Students continue to tell us that the opportunity we provide for any two Bachelor of Science majors to be completed within three years is a substantial bonus to them and their career prospects and so I am hoping that this is a message that all your students get to hear.

Ngā mihi

Professor Len Gillman
Professor of Biogeography
Associate Dean, International
Head of School, School of Science

COME SEE US!

FOR STUDENTS

MEET NEW ZEALAND'S GREATEST SCIENTISTS

Friday 16 Aug, 2pm

AUT City Campus, 55 Wellesley Street East, Auckland City – **CAMPUS MAP**

New Zealand's highest science prize, the Rutherford Medal, has been awarded annually by the Royal Society of New Zealand since 1991. A list of all recipients, whose interests cover the entire spectrum of science, can be found **here**.

The School of Science at AUT is holding a half-day event, featuring 30-minute talks by **Professor Peter Schwerdtweger** (Massey University) and **Dame Margaret Brimble** (University of Auckland), followed by a Q and A session. This is a great opportunity for students to have the chance to both listen and talk to New Zealand's Nobel Laureates.

We would like to invite the top science students from all high schools in the Auckland region. With spaces limited, we would like to invite two attendees from each school. The selection of the two students is completely up to you.

If you are based in Auckland, please indicate if you would be interested in bringing your students via the link below

REGISTER YOUR INTEREST

IGNITE 2019

City Campus 11 July

Ignite is designed for Year 12 or 13 high school students who are thinking about studying at AUT. Students will find out about university life, timetables, assessments and have the chance to discuss their study options and have any questions answered by our friendly Future Students Team.

Students will also get to take part in interactive workshops to learn tips and tricks to successful study.

Registration for this event will be open from mid-April.

FOR TEACHERS

PROFESSIONAL DEVELOPMENT

We would like to invite you and your department colleagues to our City Campus for a free session on professional development in 2019.

If you haven't already, fill out our survey below and tell us when would suit you, and which topics you would be interested in learning more about. The survey should only take about two minutes to complete.

TAKE THE SURVEY NOW

PROGRAMME HIGHLIGHTS

The first intake for our new four-year (480 points) **Bachelor of Advanced Science (Honours)** has been exceptional, with 22 high-performing students currently in the programme in its very first semester. Claire & Mitchell have chosen to progress from their Bachelor of Science to this programme.

Claire Ellis

"My career goal is to be a researcher, finding new patterns in our environment and working towards a more sustainable future. The Bachelor of Advanced Science (Honours) is the best route to achieve this goal because as part this degree you conduct your own research. Practice makes perfect.

"My honours research this year focuses on the succession of two Auckland regional parks over a 10-year period, before pest proof fencing was added."

Mitchell Baber

"I heard really good things about the new Bachelor of Advanced Science (Honours), and I like that it expands on the topics I really enjoy, like conservation in New Zealand and biogeography. I've had some really inspiring lecturers throughout my studies, and I'm excited about getting to do my honours research project under the guidance of such amazing staff.

"For my research project, I'm planning to focus on the Pericoptus, a New Zealand native scarab beetle. I chose this topic because we did some work on this genus in my applied conservation papers, including doing a DNA analysis on them. That was really cool, but there are still many questions to be answered about the Pericoptus.
I feel that there's a really exciting year ahead."

WHY STUDY THIS DEGREE?

This new degree has several advantages over the standard route of doing a three-year Bachelor of Science followed by a one-year Bachelor of Science (Honours): Students completing the Bachelor of Advanced Science (Honours) with satisfactory grades will have direct entry into a PhD.

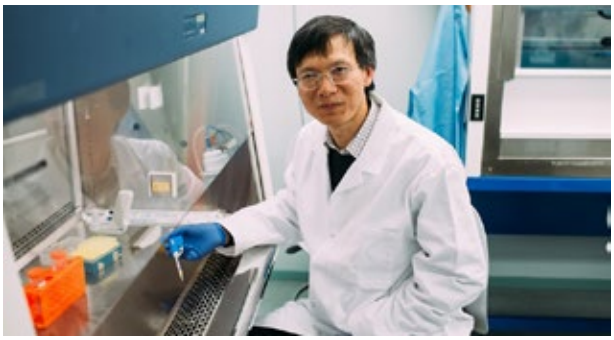
It gives high-performing students the opportunity to take on a greater challenge by completing a larger proportion of papers at higher levels than is possible by taking a Bachelor of Science followed by the Bachelor of Science (Honours).

The new degree contains a 60-point research component, whereas the standard Bachelor of Science (Honours) only has a 45-point dissertation.

Students completing the Bachelor of Advanced Science (Honours) with satisfactory grades will have direct entry into a PhD.

IN THE NEWS

New way to predict best treatment for breast cancer patients



A study is being led by AUT scientist **Dong-Xu Liu** to find ways for doctors to predict whether hormone therapy or chemotherapy would work in breast cancer patients or whether a different treatment altogether was needed.

It has been found that the cancer related protein (SHON) could allow doctors to predict treatment options for patients.

READ THE FULL STORY

New connections in material science and nanotechnology

AUT scientists **Dr Marcus Jones** and **Dr Jack Chen** have been made associate investigators at the **MacDiarmid Institute for Advanced Materials and Nanotechnology**.

Both Marcus and Jack teach chemistry at AUT.

Learn more about their research focus

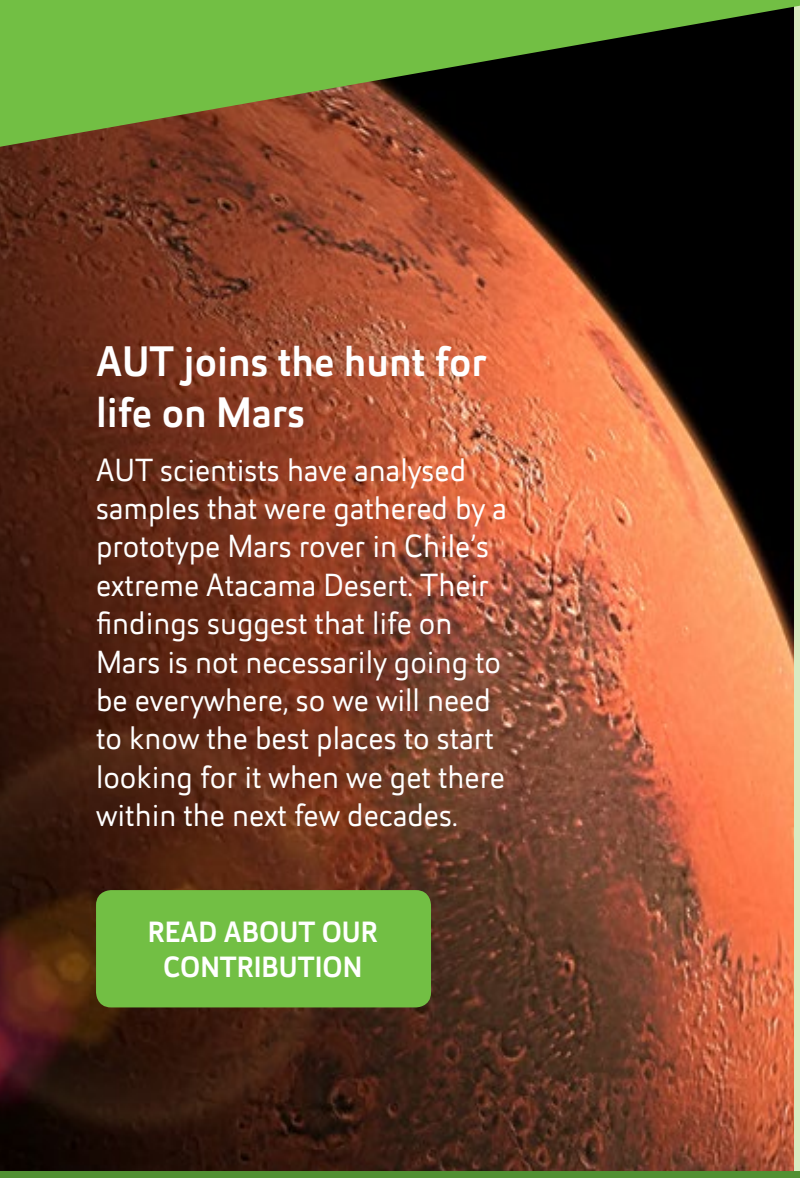
Grasslands need more than just climate change for growth

For a planet beset by the negative impacts of climate change, it has long been assumed there would be at least one significant benefit: rising carbon dioxide levels would lead to extra growth in the world's grasslands.
But new research published in the journal Nature Plants shows that for these expectations to be met it needs to rain in the right places at the right times. And that is not going to happen.

Get in touch with co-author and AUT scientist **Sebastian Leuzinger** to know more.

MEET ONE OF OUR PHD STUDENTS KHINE THIDA

IN THE NEWS



AUT joins the hunt for life on Mars

AUT scientists have analysed samples that were gathered by a prototype Mars rover in Chile's extreme Atacama Desert. Their findings suggest that life on Mars is not necessarily going to be everywhere, so we will need to know the best places to start looking for it when we get there within the next few decades.

READ ABOUT OUR CONTRIBUTION

Elemental

You may have discovered this gem already but it's too good not to share again. Chemistry Professor Allan Blackman & Alison Balance from RNZ have come together to take us on a journey through the periodic table of elements. The series ties into the #IYPT2019 celebrations to mark the 150th anniversary of the discovery of the Periodic System by Dmitri Mendeleev.

SUBSCRIBE TO THIS PODCAST ON rnz.co.nz/chemistry

New kai for paua

AUT marine biologists and researchers have created paua food that can potentially grow the iconic New Zealand mollusc faster reducing time to market. Working with the farming industry, marine biologist **Professor Andrea Alfaro** has developed species-specific probiotics, which help prevent disease spreading among the farmed populations.
Food waste is a huge cost as most of the pellets dissolve in the water before the paua eat them, so PhD student **Sara Masoomi** developed a method of encapsulating the food in a tasty-to-paua seaweed polymer that does not wash away. This gives the paua time to reach the food and delivers the probiotics to the animal's stomach for maximum absorption.

Check out the video

CONTACT US

In collaboration with the AUT Future Students Team, our science staff offer the opportunity to come into your school to talk about AUT's undergraduate programmes.

To find out more please contact the Future Students Team:

secondary.schools@aut.ac.nz

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