



Rudi's Weekly Report.

Kia ora koutou

Hope you had a good week. This has been a very eventful week. The VC of the University, Professor Cheryl de la Rey came to visit the School, and we had an opportunity to introduce the school, our research, and our vision for the future. Professor de la Rey explained her vision, and some of her plans for UC – the future looks bright.

This week, we also had the UC open day, which by all accounts was a resounding success.

I would personally like to thank all the staff and students from the School

which volunteered their time to make this event such a memorable occasion. The sessions on Physics and Astronomy were oversubscribed, and the sessions on Chemistry and Medicinal Chemistry were full. The Physics, Chemistry and Astronomy demonstrations were very well attended – well done everyone! One of the best feed backs was from a parent who said: “I wish I was going back to uni”.

This week, the staff profile is Jodie Johnston, one of our rising stars in biological chemistry – please make sure you take a look.

Last, but definitively not least, please join me in welcoming Professor John

Finke from the University of Washington to the School. John arrived this week, and will be contributing to our Biochemistry and Medicinal Chemistry courses. Welcome John!



Hope you have a great weekend and have a chance to relax before the beginning of the term.

Nga mihi nui
Rudi

Thank you for another successful Open Day | Rā Tōmene- Intercom

Thousands of prospective UC students, their parents, friends and whānau poured onto campus for Open Day | Rā Tōmene 2019 yesterday.

Our guests toured the campus, our halls of residence, our state of the art learning facilities and found out all there was to know about studying or supporting someone studying at UC.

The beautiful Christchurch winter day saw around 5,400 visitors arrive on

campus, an increase of 29% on last year. 150 visitors tucked into muffins during their bus trip from the airport to campus and we gave out 1,500 hash browns, and 2,000 packs of mini donuts on the trails. Attendance at the information sessions increased by 60%.

To help us make Open Day | Rā Tōmene bigger and better in future, we would like your feedback. Take a moment to complete our survey [here](#)>



SPCS Te Kura Matū Seminar Series

Time/Date	Speaker	Talk Title	Location
Wed, 17 Jul 2019 12:00:00 NZST	Dr Stuart Ryder	Homing in on Fast Radio Bursts	Room 701, Level 7, West Building University of Canterbury
Fri, 19 Jul 2019 11:00:00 NZST	Ivanhoe K. H. Leung	Combating infectious diseases through structural and mechanistic studies	Room 701, Level 7, West Building University of Canterbury
Fri, 26 Jul 2019 11:00:00 NZST	Sivasinthujah Paramasivam, PhD Chemistry Candidate	SYNTHESIS OF N-GLYCANS FOR IMMUNOLOGICAL STUDIES	Room 701, Level 7, West Building University of Canterbury



Safety, Health and Wellbeing

Date	Training	Duration
Jul-19		
Fri 12 July	First Aid Revalidation	9am - 4pm
Fri 19 July	Fire Extinguisher & Evacuation Training *FULL*	9am - 12pm
Tues 23 July	Risk Management	9am - 12pm
Thurs 25 July & Fri 26 July	Comprehensive First Aid *FULL*	2 days 9am - 4pm
Aug-19		
Fri 23 August	First Aid Revalidation	9am - 4pm
Sep-19		
Fri 13 September	First Aid Revalidation	9am - 4pm
Mon 16 September	Fire Extinguisher & Evacuation Training	9am - 12pm
Wed 25 & Thurs 26 September	Comprehensive First Aid	2 days 9am - 4pm
Oct-19		
Mon 7 October	Risk Management	9am - 12pm
Wed 9 October	First Aid Revalidation	9am - 4pm
Tue 15 October	Fire Extinguisher & Evacuation Training *FULL*	9am - 12pm
Nov-19		
Thurs 6 November	Workplace H&S Risk Assessment (replaces Stage 2 H&S Rep training)	9am - 4.30pm
Fri 22 November	First Aid Revalidation	9am - 4pm
Thurs 28 November	Field Activities	9am - 12pm
Dec-19		
Tue 3 & Weds 4 December	Health & Safety Rep (initial training)	2 days 9am - 4.30pm
Thurs 5 December	First Aid Revalidation	9am - 4pm

Keeping safe on Campus UC Security

You can help make the campus safer and more secure for everyone by:

- Recognising and avoiding potentially risky situations.
- Reporting any thefts or suspicious behaviour to Security.

Tips to help you take charge of your own safety

- Be alert and walk purposefully. Confidence deters attackers.
- Use the recommended walking routes on campus at night - [Safe walk map](#)
- Avoid lonely or gloomy places, walk with friends or stay with a crowd.
- Be wary of strangers, on foot or in cars, asking directions - it is better to be rude than to be in trouble.
- If someone follows you, go to a place where there are other people.

Recommended Walking Routes at Night



<https://www.canterbury.ac.nz/media/uc-policy-library/SafeWalk-map.pdf>

- Respect your intuition. Don't allow rationality to override your 'sixth sense' - it could protect you from danger.
- When you're socializing, play smart. One drink too many could make you vulnerable.

For more tips on keeping yourself and others safe goto <https://www.canterbury.ac.nz/support/onsite-services/security/advice-and-tips/>

Staff Profile

Jodie Johnston

For all of us in our respective fields there is those moments, when you have made a breakthrough or had an insight and feel in the right place and privileged to be there. For me a memorable one was during my PhD in Auckland when I set eyes on the electron density of my first protein structure and started to unravel the puzzle of building in the pieces. It occurred to me then, I was the first person to “see” this particular protein in such detail and reinforced to me the utter amazingsness of the chemistry inside the large macromolecule I had grappled with for over a year to get to this point. I guess you can say at that point (if I was not already before!) I was a convert to the field that merged biology and chemistry and to the field of structural biology particularly. I have had moments like that since, particularly when we managed to capture covalent reaction intermediate structures for the first time and those moments do make up for the times when the science does not quite work as expected.

My background before that had been a Masters in synthetic organic chemistry and a BSc in chemistry and biology so it wasn't such a surprise when I met my main PhD Supervisor Prof Ted Baker and was introduced to the world of unraveling the molecular mysteries of proteins I would find a place which was a natural fit. It was also an amazing lab to work in, large and full of people from all countries who came to work with Ted and learn and also Heather Baker an amaz-

ing lady who taught me much of what I currently know about wrangling protein crystals. I learnt a lot from all of them and made life-long friends along the way. The team culture was something I greatly valued and when I moved on from Auckland to UC I told Ted I hoped to carry some of that legacy of support, facilitation and leadership with me as I established my new group.

Due to family reasons I had stayed in Auckland after my PhD and adding to those (more chaos is good right!) I added three children of my own to the mix. I juggled small children and research science and grew up both as a Mum and a scientist concurrently, developing my own independent funding streams and research programs along the way.

My current interests are broad ranging from understanding protein communication networks, cooperativity and the fundamentals of protein behaviour and catalysis to medicinal and chemical biological applications, screening for small molecule inhibitors of proteins for use as therapeutics and chemical probes of biological function. I also have a developing interest in using proteins as tools and engineering them to make them better at these side-jobs. Though much of this work focuses on microbial proteins, partic-



From Left: My graduation picture shows ,my sister in law TM, Me, My 2 supervisors (Prof Vic Arcus, Prof Ted Baker) and then my Mum with her first guide dog Chloe.

ularly those from human pathogens I am keen to pick up new areas as my research portfolio develops.

In terms of teaching, since I started at UC I have picked up or developed a range of papers from teaching organic chemistry in the engineering program, to colours and fragrances and cosmetic applications into product design, to chemical biology. I am told Medicinal chemistry is in my near future and await to see what is next.

I was involved in a large amount of outreach when based in Auckland and at UC I have also become involved in outreach in the chemistry space taking chemistry into the intermediate schools for a couple of terms a year.

Jodie also decorates cakes for the kids for their birthdays. See the wonderful creations below with her very proud children.



Rory with his 8th, prehistoric world birthday cake.



Rowan with her 5th birthday Unicorns and Candy birthday cake.



Thea plus cat and 13th birthday cat in the moonlight cake

PhD position - Rivers as vectors of microplastic pollution

Sally Gaw

A fully funded PhD position is available in the College of Science at the University of Canterbury.

The student will be part of larger NZ MBIE Endeavour funded project which addresses the role of rivers as dynamic transport vectors of plastic pollution. This PhD project will focus on microplastic pollution by examining the sources and fate of microplastics in an urban catchment.

The successful PhD candidate will be responsible for determining the relationship between different microplastic sources and the types and sizes of microplastics in an urban river. The candidate will also investigate

the fragmentation potential of different plastic polymers and increase our understanding of microplastic formation. This will involve microplastic analysis using Fourier Transform Infrared Spectroscopy (FTIR), analysis of plastic degradation, and genetic analysis of biofilm communities using Next Generation Sequencing.

The ideal candidate will have experience working in freshwater or marine environments, skills in spectroscopy or bioinformatics, and strong experimental/laboratory skills. There will be travel between Christchurch and Wellington for field work. The position begins in July 2019 and includes

funds covering a stipend, tuition and operating costs. There will be opportunities to seek additional funding and the student should be comfortable with grant applications. Domestic and international students are encouraged to apply. Applicants must meet the University of Canterbury entrance requirements.

To apply, please send a cover letter stating your interests and experience relevant to the project and a CV to Dr. Sally Gaw

Sally.Gaw@Canterbury.ac.nz

PhD position - Modelling aerosols and clouds over the Southern Ocean

Laura Revell

Clouds and aerosols have a significant effect on the climate system, yet are notoriously difficult to simulate in Earth system models. Present-day models simulate large biases in clouds and aerosols over the Southern Ocean. These biases cascade to biases in radiation, sea surface temperature and storm tracks in the Southern Hemisphere – and ultimately to simulated rainfall and extreme weather events in New Zealand. Aerosols over the Southern Ocean are mostly comprised of sea salt, sulfate and marine organics. Depending on composition and size, aerosols can activate to cloud condensation nuclei and seed cloud formation. Our previous research has shown that aerosols and cloud microphysics are sensitive to the choice of sulfate chemistry scheme and sea salt aerosol parameterisation.

We are seeking a PhD student to work on improving the representation of aerosols and cloud microphysics in the New Zealand Earth System Model, which is based on the UK United Model. The successful candidate will hold a Masters degree in physics, chemistry, mathematics or a related discipline e.g. environmental science. Strong written and verbal communication skills in English are essential, and prior programming experience is highly desirable. Previous experience e.g. using Python and/or Fortran will be advantageous.

This studentship is fully funded and will be jointly supported by Dr Laura Revell and Professor Adrian McDonald at the University of Canterbury, Christchurch, New Zealand. This

project will provide opportunities to travel nationally and internationally, and work with a team of climate modellers based at the University of Canterbury, the National Institute of Water and Atmospheric Research and UK Met Office.

To apply, please submit the following:

- Cover letter
 - CV describing previous research experience and programming experience.
 - Academic transcript
 - Evidence of proficiency in English, if applying from outside New Zealand (see <https://www.canterbury.ac.nz/enrol/international/english/>)
 - Contact details of two academic referees
- to Dr. Laura Revell
laura.revell@canterbury.ac.nz