UC SPCS Newsletter

School of Physical and Chemical Sciences/ Te Kura Matū

14th April 2022

Please send me your news articles, photos, travel diaries, conference reports or funnys by 9am each Friday.
Email sharlene.wilson@canterbury.ac.nz
You can find previous issues here https://www.canterbury.ac.nz/science/

Facebook(@PhysandChematUC)
Twitter (@UCNZ_PhysChem)
WeChat(Physical&ChemicalSciences)

Rudi's Report.

Kia ora koutou

Hope all is well, and that you are enjoying the first week of the end of term break.
This has been a challenging term, and I would like to thank everyone in the School for their hard work and dedication.

We have a number of recent things to acknowledge including the appointment of Dr. Christina Dunker as an Adjunct Senior Fellow in the School, and the invitation that Professor Ian Shaw received recently to join the NZ Panel on Emerging Food Safety Risks.

Christina will be doing a significant amount of work with Dr. Michele Bannister and Associate Professor Laura Revell.
Please join me in congratulating both Christina and Ian.

This year, we also celebrate 100 years of the International Union of Radio Science. Professor Jack Baggaley provides an excellent story and commentary on its significance.

Following on with important issues, Dr. Matt Polson has written a reminder on the importance of wearing safety glasses in the laboratory.
Finally, Jamie Steel and Samantha Alloo have been working to get feedback from students across campus regarding scholarship stipends. Please take a look at the poll, and make sure that your views are heard.

Once again, thank you for all your hard work over the last few months.
Hope you enjoy the time off, and have the opportunity to relax and recharge.

Nga mihi nui
Rudi

Professor Ian Shaw on New Food Safety Panel.

Ian Shaw has been invited to join the NZ Panel on Emerging Food Safety Risks.

The Panel is coordinated by the NZ Food Safety Science & Research Centre (a collaboration between government, industry and Maori), it will advise the government and the food industry on new and emerging issues to inform regulatory and commercial planning.

To learn more about The New Zealand Food Safety Science & Research Centre (NZFSSRC) goto their website https://www.nzfssrc.org.nz

New Zealand
FOOD SAFETY SCIENCE & RESEARCH CENTRE

Publications

Peter Jenniskens, Jack W. Baggaley et al.
Meteor showers from known long-period comets.
Icarus, vol 356, 2021, Article No.114469. https://www.sciencedirect.com/science/article/abs/pii/S0019103521001500

W.J Baggaley.
100 Years of the International Union of Radio Science.
Chapter 12, New Zealand, pp273-304 2021.
URSI Publication: https://www.ursi.org/publications.php1.

X. Qiu, A. L. Garden, A. J. Fairbanks, Protecting group free glycosylation: one-pot stereocontrolled access to 1,2-trans glycosides and (1→6)-linked disaccharides of 2-acetamido sugars, Chem. Sci. 2022, 13, 4122-4130.
https://doi.org/10.1039/D2SC00222A

Health, Safety and Wellbeing- Sharlene Wilson (H&S Administrator)

A-Z of Health and Safety at UC

2022 Professional Development

To enrol in Professional Development log in to UC People and navigate to the Professional Development tile.

Learning & Development Calendar 2022, including Health & Safety Training

21/04/2022
Te Reo Maori for the Workplace

05/05/2022
Rainbow Awareness

24/05/2022
Tangata Tū, Tangata Ora

01/06/2022
First Aid Refresher

07/06/2022
Finance Seminar - 55 years +

08/06/2022
H&S Rep Initial Training

14/06/2022
Finance Seminar - 25 to 35yrs

15/06/2022
Finance Seminar - 35 to 55yrs

16/06/2022
UC Business Case Workshop

28/06/2022
Tangata Tū, Tangata Ora

07/07/2022
Mental Health 101 Workshop

The Importance of Wearing Safety Glasses.-Matthew Polson

Recently there was an incident in the chemistry labs that, once again, highlights the importance of wearing safety glasses.

A student was using a syringe filter with a solvent filled syringe. On applying pressure to the plunger, the filter came off, causing solvent to be splashed back towards their face.
Thankfully they were wearing safety glasses and they stopped the full blast of the solvent. Even with this apparent near miss, the student rightly used the eye wash station to rinse out their eyes and clean their face.

First aid followed as, even where there is no contamination, it is desirable to use saline solution from the first aid packs to restore the salt concentration around the eyes.

As you can see from the picture, the solvent was quite aggressive on the plastic, but they did their job. Although the student didn't suffer any effects on their eyes, SPCS will now recommend anyone having any solvent near their eyes should see a doctor to check there is no damage.

Old chemists don't die, they just go tramping - **Bryce Williamson**

A short break before the climb to Park Pass (Photo by Susan Pearson)
Pictured from Left, Chemistry retired academics, Bryce Williamson, Alison Downard and Andy Pratt.

ESO telescope captures surprising changes in Neptune's temperatures

https://www.eso.org/public/news/eso2206/

An international team of astronomers have used ground-based telescopes, including the European Southern Observatory's Very Large Telescope (ESO's VLT), to track Neptune's atmospheric temperatures over a 17-year period. They found a surprising drop in Neptune's global temperatures followed by a dramatic warming at its south pole.

"This change was unexpected," says Michael Roman, a postdoctoral research associate at the University of Leicester, UK, and lead author of the study published today in The Planetary Science Journal. "Since we have been observing Neptune during its early southern summer, we expected temperatures to be slowly growing warmer, not colder."

Astronomers looked at nearly 100 thermal-infrared images of Neptune, captured over a 17-year period, to piece together overall trends in the planet's temperature in greater detail than ever before.
Read the full article https://www.eso.org/public/news/eso2206/

Congratulations to Sara.

Congratulations to Sara Salehitaleghani who successfully defended her PhD thesis last week. Sara's thesis is entitled "Scanning Tunneling Studies of Topological Insulators" and she was supervised by Simon Brown.
Cheers
Jon

Welcome to Aggie Lawer.

(Post Doc with Dans group)

"I completed my PhD in Chemistry at the University of New South Wales, Australia (2017) under the supervision of A/Prof Luke Hunter.

I then moved to the UK, to take up a year of postdoctoral position in the group of Dr Will Unsworth at the University of York.
After completing my first postdoc, I worked with Dr Allan Gamble in the School of Pharmacy, University of Otago.

My research interest is in the interface between synthetic organic chemistry and chemical biology. I will join Dan Foley's group and my research project will focus on the development of kinase inhibitors for cancer treatment."

Aggie is sitting in ER502-024.

'They're everywhere' - Microplastics found in human blood

https://www.1news.co.nz/2022/03/29/theyre-everywhere-microplastics-found-in-human-blood/

A recent study by scientists in the Netherlands has for the first time shown microplastics are showing up in human blood.
Microplastics are miniature plastics, generally smaller than 5mm in width.

The study - published in the journal Environment International surveyed 22 people and found microplastics in the blood of 17.

Sally Gaw, professor of environmental science at the University of Canterbury told Breakfast "It's likely that was a European study, we could have more, we like carpet in New Zealand and quite often carpet is a plastic as well".

There are a number of factors which lead to humans ingesting microplastics, Gaw said. "It depends whether people put things in their mouths or not, people who chew their pens well of course you're gonna have microplastics." Read more https://www.1news.co.nz/2022/03/29/theyre-everywhere-microplastics-found-in-human-blood/

Ph.D Stipend Poll- **Samantha Alloo and Jamie Steel**

Postgrads, do you disagree with unfair pay?
A large representative group are actively advocating for pay equity across all University funded postgraduate scholarships.

Fill out The Poll, be heard, provide feedback, and help assist change for equity!

Scan the QR code for the Poll.

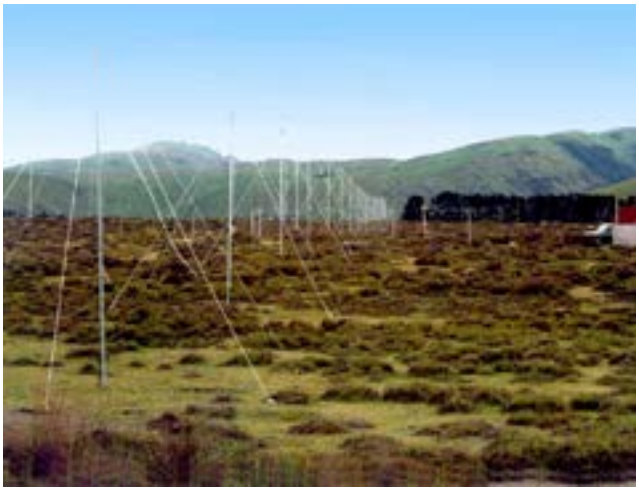
URSI Centenary - Jack Baggaley

The International Union of Radio Science was founded in 1919 and a founding member was Sir Ernest Rutherford who was on the UK Radio Research Board and organised early investigations in radio and ionospheric research. The photo shows Rutherford (right) discussing ionospheric topics with Dr. J. A Ratcliffe at the Cavendish Laboratory ~ 1935 (there's an amusing story about the notice stating 'Talk Softly')..

The photo shows Rutherford (right) discussing ionospheric topics with Dr. J. A Ratcliffe at the Cavendish Laboratory ~ 1935

URSI decided to produce a Centenary publication – though Covid interrupted progress. As a member of the NZ URSI Committee, I produced a Chapter for this extensive publication detailing the radio and radar related research (including radio astronomy) work with comprehensive publications carried out at Universities and Government Departments in NZ over the past 100 years (with input from Grahame Fraser on UC work).

The first work at UC was in 1937 by Sir F.W. White who had worked at the Cavendish Lab in Cambridge with Rutherford who established at UC a radio propagation programme with support from Rutherford. Fred White studied the behaviour of the ionosphere using data on aurorae, radio fadeouts and magnetic storms available from the adjacent Magnetic Observatory in Christchurch. The ionosonde radars that he first established at Canterbury operated from 1937, then at Godley Head from 1942 and finally from 1987 to 2014 at a site in Eyrewell Forest. An ionosonde has been operating at Scott Base from 1956 (for the International Geophysical Year IGY) to the present. In the early1950s Jack Ratcliffe visited Christchurch to encourage the continued operation of ionosondes – essential for long distance radio communication and for our understanding of the Sun-atmosphere association (now recognised as important input to the topic global climate change). The major thrust at Canterbury of URSI related work has been mapping the behaviour of upper atmospheric winds and radar studies of meteoric ionization.



The 27 MHz co-linear array at Birdlings Flat for meteor trajectory and orbit mapping.

In photo of Rutherford and Ratcliffe in the Cavendish Lab at Cambridge a 'Talk Softly Please" notice is displayed.' Rutherford was known to have a 'loud booming voice' – so the implication is that the notice is present to ask him to modify his voice: however the notice is not specifically directed at him! The lab used an electronic counter to record particles from various radioactive sources. The counter used a bank of thyratrons (gas-filled triode valves) to count the particle flux and the device was very sensitive to vibrations and noise.
To minimize miss-counts the public notice was installed.

The Christchurch ionosonde when operating at Eyrewell.

The Scott Base. ionosonde mast (left) and winds radar mast (right).

University opens doors in Open Christchurch

https://www.canterbury.ac.nz/news/2022/university-opens-doors-in-open-christ-church-.html

Explore the unique nooks and crannies of a modern university, plus parts of its original city campus, as the 149-year-old University of Canterbury (UC) opens its architecturally designed doors for Open Christchurch 2022.

You're invited to tour four of the University of Canterbury's distinctive buildings on its Ilam campus on Sunday 1 May, during Open Christchurch's live architectural weekend in Ōtautahi.

Join a celebration of our architecture on the Ilam Campus to discover and explore high-tech John Britten, brutalist Forestry, colourful revolutionary Rehua, and soaring enduring Puaka-James Hight (Central Library).

The 2022 Open Christchurch architectural festival includes the University's original campus, purpose-built in Gothic Revival style for Canterbury College from 1873, now home to the Arts Centre, on Worcester Blvd. This heritage site is opening the Great Hall, the rebuilt Observatory, and Physics & Biology buildings for the festival weekend.

Run by Te Pūtahi Centre for Architecture and City Making, Open Christchurch celebrates Christchurch's most exceptional architecture by opening over 40 buildings to the public for free on 30 April & 1 May. Check out which other buildings are opening their doors in our city here: www.openchch.nz.
Please goto the link for more details on the specifics of the tours. https://www.canterbury.ac.nz/news/2022/university-opens-doors-in-open-christchurch-.html

2022 Open Christchurch Ilam campus buildings:

PUAKA-JAMES HIGHT (CENTRAL LIBRARY), University Drive, central Ilam Campus
SUNDAY, 11am–2pm
ARCHITECT: Ministry of Works, 1969-74

FORESTRY, Forestry Rd, central Ilam Campus
SUNDAY, 11am–2pm
ARCHITECT: Hall & Mackenzie, 1970

REHUA, Forestry Rd and Arts Rd corner, central Ilam Campus
SUNDAY, 11am–2pm
ARCHITECT: Athfield Architects, 1996 & 2019

JOHN BRITTEN, 69 Creyke Rd, central Ilam Campus
SUNDAY, 11am–2pm
ARCHITECT: Warren & Mahoney, 2009

Library News-John Arnold

Please try out the new SciFindern and give us your feedback.

You can find the link to the database, user guides and the survey for feedback at https://bit.ly/31C33G8 (Biochemistry Subject Guide) or https://bit.ly/2AuJ7Kg (Chemistry Subject Guide)

New books and ebooks:
* Astronomy http://bit.ly/xntPcH
* Chemistry http://bit.ly/2GYps4U
* Physics http://bit.ly/wafgjA
* Teaching support from UC Library https://bit.ly/3C8pCCm
* Adaptable new-titles-list generator http://bit.ly/1brTI3E

Teaching support from UC Library
https://bit.ly/3C8pCCm
Open-access agreements (including APCs free or discounted)
https://bit.ly/3KoUFgz

The Internet Is Not What You Think It Is: A History, a Philosophy, a Warning [Interview]
(LARB)
https://bit.ly/3LO0LYd

On the Lighter Side
Impossibly Tiny Doodles...
(artist Visothkakvei; My Modern Met)
https://bit.ly/3vmkh7R

Assoc. Prof. Greg Russell

Library Liaison Officer for Chemistry
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