

Canterbury Branch of the Royal Society of New Zealand Te Apārangī August 2023 Newsletter

Dear Member,

We hope you are keeping well, warm, and safe.

New website

The big news this month is that our new website is now live, and you can find it here:
<https://www.royalsocietycanterbury.org.nz>

A huge thank you to Branch Council member **Fiona McGregor** for getting this up and running! There's still some work to do to tweak it into shape, so please let us know if you have any feedback or spot any mistakes that need fixing.

Working groups

This month we established two working groups:

Science Fair group

This group will look at how the Branch can support schools and students from low decile areas and under-represented communities to participate in the Canterbury-Westland Schools Science Fair. The Branch already contributes prizes and judges to the Science Fair, but there may be more that we can offer.

Travel/Research Grants group

This group will look at our student travel/research grants to see if the processes can be improved and will consider the applications and make recommendations to the Council.

If you have any suggestions for either of these groups, please contact us so we can have a chat with you about your suggestions.

Strategic Plan

We will soon be asking for your input to the development of a strategic plan for the Branch. Three questions you can give some thoughts too are:

1. What is our unique identity?
2. How to motivate the younger generation to join
3. What is our target population?

Finally, we have awarded more student travel grants to several students and received a report from a student who attended a conference in Japan with our help. See further in the newsletter for more on these.

Subscriptions

These have been set out. Your support for the branch is appreciated. If you did not receive an email from us about this, you can contact us at subs@canterbury.rsnzbranch.org.nz.

Students travel awards

We have given several awards in the past month. The recipients are:

Robin Krauss, Medical student (6th year trainee intern), Department of Medicine, University of Otago, Christchurch, for a five minute presentation of an ePoster, *Learning barriers and facilitators for students in general surgical rotations*, in Glasgow, UK, 26 - 30 Aug 2023

Kiri Barr-Glintborg, PhD student, Psychology Department, University of Canterbury, for a poster presentation, *Anterior thalamus, its neural efferents, and spatial working memory in rats*, at the 50th Annual General Meeting of the European Brain and Behaviour Society (EBBS), Amsterdam, 26 - 29 August 2023

Karina Kelly, Masters student, School of Earth and Environment, University of Canterbury, for a research internship in the Ecology and Genetics of Conservation and Restoration (Ecogere) team, at the Fauna Observatory, University of Bordeaux, 16 Oct - 15 Dec 2023

Rebecca Lee, PhD student, Department of Medicine, University of Otago, Christchurch, for *Long-term impacts of cannabis on resting state functional networks: are there any?*, at the Australasian Winter Conference on Brain Research (AWCBR), Queenstown, 26 – 30 August 2023

Thomas Maslin, PhD student, Department of Mechanical Engineering, University of Canterbury, for a conference poster presentation (and visit with possible international collaborators), *Opensource method for layout cell parameterization through feature recognition for procedural generation of lithography files*, at Micro and Nanoengineering '23 (MNE23), Berlin, 25 - 28 September 2023

Jade Gibson, Masters student, Environmental Science, University of Canterbury, for an oral presentation, *Standing in both worlds: exploring hapu-led biosecurity management at Whareponga*, at the Queenstown Research Week, 27 Aug - 1 Sep 2023

Below is a report from one of the grant recipients who went to Japan.

Royal Society Travel Grant report

International Federation of Automated Control World Congress, 9 - 13 July 2023
Yokohama, Japan

On the 6th of July myself and seven other University of Canterbury PhD students travelled from Christchurch to Yokohama for the IFAC World Congress 2023. Figure 1 is a photo of myself, Trudy, and Jaimey, two other recipients of the travel grant.



Figure 1: Josie, Trudy, and Jaimey at IFAC outside the conference center in Yokohama

The conference was held at the Pacifico Conference center. Over 1500 people from all over the world attended the congress speaking on a wide variety of topics related to control engineering. The UC Biomedical engineering group delivered 21 papers in the Open Invite Biology and Medicine Society (BMS) section. During my time at the conference, I attended several sessions both related and unrelated to my area of research. I was amazed at the incredibly varied number of applications of controls and automation engineering. On the first day of the conference, I attended the BMS AGM. The new chair and board members were introduced and spoke on the goals for the Society over the next 5 years. The main topic of the AGM was discussion of the upcoming BMS conference in 2024 in Germany. The board discussed several topics they wish to invite, as well as having a specific section for emerging female researchers – a session I would be very eager to present at. It was great to meet several other researchers from BMS at the AGM and I hope to keep in touch with them for future collaboration.

My paper titled Novel Assistive Devices for Umbilical Artery Catheterisation, was selected for the Control, Mechatronics, and Imaging for Medical Devices and Systems in Medicine IV session. Figure 2 is a photo of my presentation. The selection of papers in this session included novel design and validation of low-cost insulin pumps, a novel method for breast cancer detection, and mathematical techniques to estimate vertebrae volume – all incredibly interesting topics! It was a privilege to speak among so many talented engineers at the for-front of novel, cutting edge biomedical engineering.

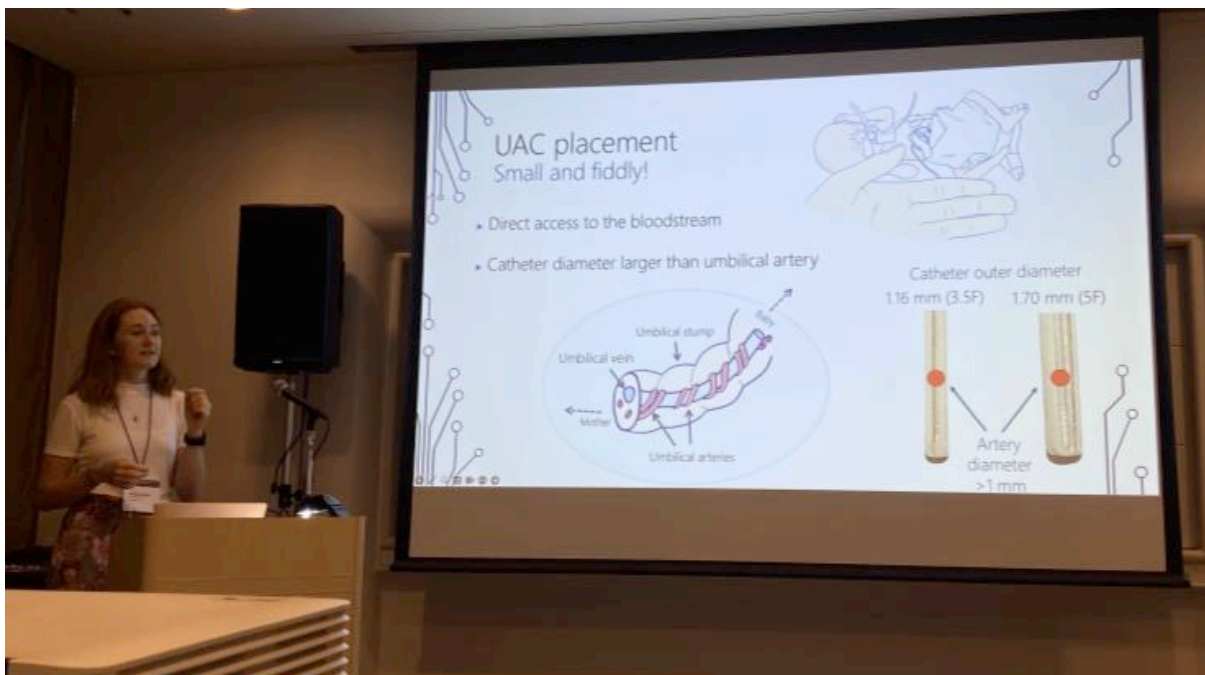


Figure 2: Presenting my research in umbilical arterial catheterisation.

During the conference there were several opportunities to network with other researchers in the biomedical engineering space. I met several others from the UC Biomedical engineering extended research group from all over the world, including Hungary, Germany, and Belgium. A lot of the research conducted at the research institutions in Europe is heavily

AI and computational mathematics based. These skills will be extremely useful in my PhD research, and I discussed with several people the potential for future collaboration. Overall, I had a wonderful and informative time at IFAC. It was an excellent opportunity to present my research to several others and received several comments of praise on my presentation. I'd like to take this opportunity to thank the Canterbury branch of the Royal Society for contributing towards my trip to Japan for this conference. I wouldn't have been able to attend without their support. Thank you

Christchurch event

The members trip to the rebuilt Observatory Tower (1896) and the Teece Museum of Classical Antiquities in the University of Canterbury Classics Department at The Arts Centre Te Matatiki Toi Ora is full. We are now just waiting to hear back on a date for the 1st week of September. Those who indicated their interest in the trip will be advised once we hear back about the date.

Timaru events

We have two talks planned in Timaru in October and November:

12 October at 6.30 - 9.30 pm

Emeritus Prof. Malcolm Clark, Southern Cross University
Wastes, changing psychologies for better resource use

16 November at 6.30 - 9.30 pm

Dr Amit Sarkar, Ara Institute of Canterbury, Christchurch
Development of a Smart City/AI Strategy: A communities input

The venue for both of these talks is at **Ara Timaru, BlockTG, Room 105/6**.

CO₂ monitor

Don't forget our CO₂ monitor, which you can borrow. It's been in use regularly and we arrange for you to pick it up and borrow it. A guide to recommended CO₂ measurements can be found at <https://www.rnz.co.nz/news/in-depth/470690/whose-breath-are-you-breathing>. All we ask in return is that you post your findings on either the Branch Facebook page or Twitter.

News from other Branches and RSNZ Te Apārangi



[Deep sea mining test may have had lasting impacts – Expert Reaction](#)

A deep sea mining test that lasted just two hours may have reduced fish and shrimp populations in the surrounding area a year on, according to international research.

In 2020, Japan performed the first successful test extracting cobalt crusts from the top of deep-sea mountains to mine cobalt – a mineral used in electric vehicle batteries. An investigation on the environmental impact of this first test reports a decrease in ocean animals both in and around the mining zone.

@SMC



[A changing world needs arts and social science graduates more than ever – just ask business leaders](#)

From commerce to public policy, cuts to New Zealand’s university humanities departments will have repercussions well beyond the so-called ‘ivory towers’.

Richard Shaw @The Conversation



[New Kōtuitui: New Zealand Journal of Social Sciences issue](#)

A new issue of *Kōtuitui: New Zealand Journal of Social Sciences Online* [open access] has been published. It includes research articles on [single-use plastics](#) and how investment toward the top of the "waste hierarchy" in reuse could contribute to a more circular economy; the impacts of harmful [media coverage of tangata whenua in Aotearoa](#); New Zealand [attitudes to consuming insects](#) and the disparity in young people’s access to extracurricular activities, known as the [activity gap](#), and what can be done about it.

Authors affiliated with any of the 42 universities in Australia and New Zealand may be eligible to publish their articles **Open Access** at no cost in *New Zealand Journal of Agricultural Research*. [Find out](#) if you’re eligible.



Video available for Beyond Growth: How do we create an economy that doesn't cost the Earth? A recording is now available for the Beyond Growth panel discussion. At this event, UK ecological-economist and writer, **Tim Jackson** discussed his latest book '*Post Growth: Life After Capitalism*' with specialist in disaster risk reduction **Christine Kenney**, and public policy expert **Jonathan Boston**.

Broadcaster and environmentalist **Lynn Freeman** chaired the conversation.

This event was hosted by Royal Society Te Apārangi with support from the [British Council New Zealand and the Pacific](#).

From the Otago Institute

Don't forget that the podcast 'Talking About' is up and running. The show is produced through Otago Access Radio and available through all the usual podcast avenues and from the OAR and OI websites <https://oar.org.nz/talking-about/>. They also have a Facebook group 'Otago Institute for the Arts and Sciences', which anyone can join.

Other items of interest

THE COTTER MEDICAL HISTORY MUSEUM

The collection of items in the museum was designated as being of National Significance by Te Papa in 2017. It contains the largest number of historical medical artefacts in any New Zealand collection.

The museum holds a wide range of surgical instruments, machines, devices, medicines, nursing memorabilia, photographs, archives and books.

Annex Road entry to the museum

The museum is situated on Christchurch's Hillmorton Hospital campus and is open to the public by request.

Phone (03) 339 2870
info@cottermuseum.co.nz
www.cottermuseum.co.nz

Registration is open for [Oceania MathsJam Gathering 2023!](#)

Oceania MathsJam Gathering (OMG for short) is an annual weekend get-together for like-minded maths enthusiasts to discuss interests, share maths puzzles, games, insights & ideas, network and generally have fun in a relaxed atmosphere. A spinoff of [MathsJam](#), OMG welcomes all abilities and backgrounds, from recreational puzzlers to professionals. In short, anyone who enjoys maths! It's also a great [professional development opportunity](#) for teachers. OMG23 will be held at Spencer Park in Christchurch, NZ over the weekend of October 13th-15th. Register online at www.mathsjam.nz today.



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Links to articles of interest

[How to eliminate urban 'shade deserts'](#)

Cities must work to provide cooling cover and [eliminate the 'shade deserts' that disproportionately affect low-income communities](#), argue three urban-geography and climate researchers. Shade is one of the most efficient and cost-effective ways to reduce heat-related health risks outdoors. And it's simple to create with trees, buildings, canopies, shade sails, awnings and walls — but it is “frequently overlooked in urban planning and climate-change mitigation strategies,” the trio writes.

[How an ancient solar flare illuminated the start of the Viking Age](#)

Improved radiocarbon dating aided by a solar flare in the year 775 sheds light on the early days of Vikings and global trading in medieval times.

[New Zealand's maritime territory is 15 times its landmass – here's why we need a ministry for the ocean](#)

Elizabeth Macpherson, University of Canterbury; Karen Fisher, University of Auckland
New Zealand's marine policies are scattered across multiple laws and regulatory institutions. A dedicated ministry would overcome this fragmentation and help protect vital ecosystems and resources.

[How an ancient solar flare illuminated the start of the Viking Age](#)

Improved radiocarbon dating aided by a solar flare in the year 775 sheds light on the early days of Vikings and global trading in medieval times.

[A changing world needs arts and social science graduates more than ever – just ask business leaders](#)

Richard Shaw, Massey University

From commerce to public policy, cuts to New Zealand's university humanities departments will have repercussions well beyond the so-called 'ivory towers'.

[Climate extremes make NZ's supply chains highly vulnerable – it's time to rethink how we grow and ship food](#)

Alan Renwick, Lincoln University, New Zealand

New Zealand's food system – from production to delivery – has been built around efficiency rather than resilience to climate change and natural disasters. But there are solutions.

[Working from home has worked for people with disability. The back-to-the-office push could wind back gains](#)

Sue Williamson, UNSW Sydney; Helen Taylor, Australian Defence Force Academy; Vindhya Weeratunga, Australian Defence Force Academy

Avoiding the office commute is just one reason why working from home suits many workers with disability better. Employers need to take a nuanced approach to workplace flexibility.

You can keep updated by on the branch's Facebook page Canterbury RSNZ Branch or twitter @CanterburyRSNZ.If have any suggestions for speakers, field trips ideas, or even contribute something in the newsletter please contact us and I am always willing to discuss anything regarding the branch with you.

Roger Fagg, Branch President

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