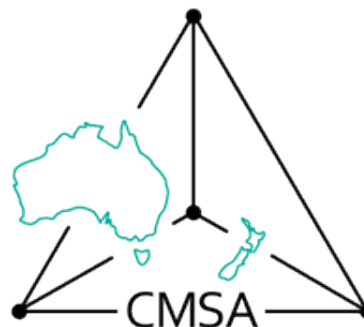


# Combinatorial Mathematics Society of Australasia

Newsletter 69: April 2024



Incorporated 8 July 1996

## Introduction

Thanks to all CMSA members who have sent information for this newsletter.

Please send news as soon as you have anything of interest to CMSA members and the combinatorial community, even if no newsletter is imminent. Email items to the Newsletter Editor: [kevin.mcavaney@ozemail.com.au](mailto:kevin.mcavaney@ozemail.com.au). Only in plain text please.

Closing date for Newsletter 70: 30 June 2024.

Old newsletters can be found [here](#).

## Workshop and conference announcements

### 46ACC December 2024

The 46th Australasian Combinatorics Conference (46ACC) will be held at The University of Queensland, Brisbane, Australia, 2–6 December 2024.

It will include invited talks, contributed talks in parallel sessions, the conference dinner, a presentation of the CMSA Anne Penfold Street Student Prize for the best student talk at the conference, an excursion, and the CMSA Annual General Meeting. Registration will automatically include a one-year membership of CMSA, if not already a life member.

Researchers in any area of discrete mathematics and its applications are warmly invited to attend and contribute a talk.

The invited speakers for 46ACC are:

- Alice Devillers (University of Western Australia)
- Melissa Lee (Monash University)
- Florian Lehner (University of Auckland)
- Anita Liebenau (UNSW Sydney)
- Jie Ma (University of Science and Technology of China)
- Sam Mattheus (Vrije Universiteit Brussel)
- Anita Pasotti (Università degli Studi di Brescia)
- David Wood (Monash University)

Organising Committee: Sara Davies, Barbara Maenhaut, Darryn Bryant.

Early bird registration deadline: 1 November 2024.

Deadline for submission of abstracts: 15 November 2024.

Contact: [46acc@uq.edu.au](mailto:46acc@uq.edu.au)

Website: <https://46acc.github.io>

## Combinatorics in Christchurch

This meeting will be held at The University of Canterbury, Christchurch, New Zealand, 4–6 June 2024. It aims to bolster the combinatorial community in New Zealand by bringing together mathematicians working in combinatorics and related fields.

Keynote speaker: Bill Martin (Worcester Polytechnic Institute, USA)

Invited speakers:

- Carmen Amarra (University of the Philippines Diliman)
- John Bamberg (The University of Western Australia)
- Gary Greaves (Nanyang Technological University, Singapore)
- Anita Liebenau (University of New South Wales Sydney)
- Jeroen Schillewaert (University of Auckland)
- Sho Suda (National Defense Academy of Japan)

Organisers: Jesse Lansdown, Geertrui Van de Voorde.

Contact: [jesse.lansdown@canterbury.ac.nz](mailto:jesse.lansdown@canterbury.ac.nz)

Website: <https://combinatoricsinchristchurch.github.io>

## More combinatorics conferences

[International Symposium on Combinatorial Optimization \(ISCO2024\)](#),  
University of La Laguna, Tenerife, Canary Islands, Spain, 22–24 May 2024

[Combinatorics 2024](#),  
Carovigno, Italy, 3–7 June 2024

[The Legacy of Ramanujan 2024](#),  
Penn State University, USA, 6–9 June 2024

[9th Gdańsk Conference on Graph Theory](#),  
Gdańsk, Poland, 16–21 June 2024

[13th International Workshop on Coding and Cryptography \(WCC 2024\)](#),  
University of Perugia, Italy, 17–21 June 2024

[35th International Workshop on Combinatorial Algorithms \(IWOCA 2024\)](#),  
Ischia, Italy, 1–3 July 2024

[30th British Combinatorial Conference](#),  
Queen Mary University of London, UK, 1–5 July 2024

[Discrete Mathematics Days 2024](#),  
Alcalá de Henares, Spain, 3–5 July 2024

[SIAM Conference on Discrete Mathematics \(DM24\)](#),  
Spokane Convention Centre, Spokane, Washington, USA, 8–11 July 2024

[Summit280](#),  
Eötvös University, Budapest, Hungary, 8–12 July 2024

[Combinatorial Designs and Codes \(CODESCO'24\)](#),  
University of Seville, Spain, 8–12 July 2024

[Graphs and Groups, Complexity and Convexity \(G2C2\)](#),  
Hebei Normal University, Shijiazhuang, China, 11–25 August 2024

[10th Polish Combinatorial Conference \(10PCC\)](#),  
Bedlewo, Poland, 15–21 September 2024

[11th Latin American Workshop on Cliques in Graphs \(LAWCG 2024\)](#),  
Ceará, Brazil, 20–23 October 2024

47th Australasian Combinatorics Conference (47ACC), Victoria University of Wellington, New Zealand, December 2025. Dates TBD.

## Recent news

### Report on 45ACC

The 45th Australasian Combinatorics Conference was hosted at The University of Western Australia (Perth), in the week 11–15 December 2023. There were 77 participants, from all over the world: the Phillipines, Germany, USA, Netherlands, New Zealand, Japan, Croatia, Ireland, Canada, Singapore, Thailand, Belgium, and Australia.



There were 9 invited speakers:

- Sara Davies (The University of Queensland) *The Hamilton decomposition problem*
- Gary Greaves (Nanyang Technological University) *How to design a graph with three eigenvalues*
- Krystal Guo (University of Amsterdam) *Algebraic graph theory and quantum walks*
- Nina Kamčev (University of Zagreb) *Common and Sidorenko linear patterns*
- André Kündgen (California State University San Marcos) *The Saturation Spectrum of odd cycles*
- Padraig Ó Catháin (Dublin City University) *Quadratic forms in design theory*
- Tibor Szabó (Freie Universität Berlin) *New Ramsey multiplicity bounds and search heuristics*
- Geertrui Van de Voorde (University of Canterbury) *'Segre-type' theorems: combinatorial characterisations for algebraic objects*
- Gabriel Verret (University of Auckland) *Local actions and eigenspaces of vertex-transitive graphs*

We also had 56 contributed talks, including 19 student talks eligible for the Anne Penfold Street Prize. The prize went to Dorde Mitrović (University of Auckland) for his talk *Automorphism of direct products of circulant graphs*. The photo shows Binzhou Xia presenting the award to Dorde.



The inaugural CMSA Prize was awarded to Nina Kamčev (University of Zagreb). This prize was recently constituted by CMSA Council to be awarded at CMSA annual conferences to early career researchers for their outstanding research contribution to any area of combinatorics. The photo shows Tibor Szabo presenting the medal to Nina.



The conference excursion was a trip to the port city of Fremantle, and a tour of the old Fremantle Gaol, which was built in the 1850s. There were also informal trips to the beach and to all the great things Perth has to offer. The conference dinner was held at UniClub on the UWA campus.

The main organisers were John Bamberg, Alice Devillers, Michael Giudici, Luke Morgan, and Gordon Royle, but they were excellently assisted by locals in Anton Baykalov, Lei Chen, Vishnu Arumugam, Jacob Smith, and Saul Freedman.

Finally, none of it could have happened without the practical and financial support of the School of Physics, Mathematics, and Computing (UWA), the Institute of Combinatorics and its Applications, and the trading company Optiver.

### **CMSA Seminars**

Recent seminars in this online series were by:

- Huy Tuan Pham, Stanford University, 6 March 2024
- Ahad Zehmakan, Australian National University, 20 March 2024

For talk titles and abstracts and forthcoming seminars visit <http://combinatorics-australia.org/seminars.html>

### **CMSA Council**

At the CMSA AGM on 12 December 2023, the following people were elected to Council for 2024: Thomas Britz (President), John Bamberg (Vice-President), Sara Davies (Secretary), Daniel Horsley (Treasurer), Jeroen Schillewaert, Rajko Nenadov, Nick Brettell, Jeanette McLeod, Ian Wanless, Anita Liebenau, Florian Lehner, Brendan McKay, Melissa Lee.

### **An Outreach Opportunity**

Maths Challenge is a unique open style annual problem-solving program designed to support and encourage mathematically gifted students from years 3 to 10 and their teachers. It is produced by the Australian Mathematics Trust and has been running for 33 years. There are over 15000 entries in a typical year. The problems and teacher guides are prepared by a committee of up to 16 committed volunteer teachers, educationalists, and mathematicians. More details are available in my ZDM paper [Mathematics Challenge for Young Australians](#). There is currently a vacancy on the committee for a mathematician who is keen to foster enthusiasm for mathematics amongst our future analytical thinkers. If interested, please contact the Committee Chair [kevin.mcavaney@ozemail.com.au](mailto:kevin.mcavaney@ozemail.com.au)



## University of WA

Emeritus Professor Cheryl E Praeger AC FAA was appointed a Fellow of the International Science Council (ISC) in December last year in recognition of her outstanding contributions to promoting science as a global public good. The ISC is an international non-government organization created in 2018 and headquartered in Paris, France. It stimulates and supports international scientific research and scholarship on major issues of global concern. Cheryl's ISC citation is at <https://council.science/profile/cheryl-praeeger/>.

## University of Auckland

In December 2023 Marston Conder was awarded the New Zealand Mathematical Society's Kalman Prize for Best Paper. This prize is awarded for 'an outstanding and innovative piece of research in the mathematical sciences published by a member or members of the NZMS' in the previous five years, namely the paper *Edge-transitive bi-Cayley graphs*, co-authored with Jin-Xin Zhou, Yan-Quan Feng and Mi-Mi Zhang (Beijing Jiaotong University), and published in the Journal of Combinatorial Theory, Series B 145 (2020) 264–306.

## University of NSW Sydney

Zhi Yee Chng, from the School of Mathematics and Statistics, has recently been awarded a PhD for his thesis titled *On the Ramsey results of tree graphs versus generalised wheel graphs*. The abstract is available at <https://doi.org/10.26190/unsworks/25518>. His supervisors were Thomas Britz, Ta Sheng, Kok Bin Wong and Anita Liebenau.

## Monash University

The School of Mathematics has available a 2-year postdoctoral research position in structural graph theory. The successful applicant will work with Professor David Wood in the Discrete Mathematics Research Group on a project in graph product structure theory. The application deadline is 14 April 2024.

## Joint tri-society Meeting

There will be a joint meeting in Auckland NZ, 9–13 December 2024, of the New Zealand, Australian, and American Mathematical Societies. Expressions of interest/proposals for special sessions are invited. It is expected that these will be co-organized by mathematicians from different countries. Required information is name of the session, organisers' contact details, a brief summary of the session's scope, a sample list of 8–10 potential speakers (plenary, invited, or contributed). Send proposals to [melissa.tacy@auckland.ac.nz](mailto:melissa.tacy@auckland.ac.nz)

## The Australasian Journal of Combinatorics

[AJC](#) is a 'diamond open access' journal: online and free for readers and authors. There are three volumes per year, closing in about February, June and October. Each volume has three parts. [Volume 88, Parts 1, 2, 3](#) are now available, as are all volumes back to Volume 1.

Visit [here](#) to register for email notices whenever new papers are published.

Submissions to the Australasian Journal of Combinatorics may be sent to [ajc@maths.uq.edu.au](mailto:ajc@maths.uq.edu.au). Only pdf files are required at submission stage.

The Journal is now indexed by Scopus from Volume 13 (1996) onwards, and by Clarivate Analytics 'Emerging Sources Citation Index' from 2015 on.

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