



# The New Zealand Statistical Association Newsletter

Number 89

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# President's Welcome

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by BEATRIX JONES



Kia ora koutou,

I hope everyone has been keeping warm and dry through the winter. While I enjoy seeing the sun rise during my bus ride to work, I also find myself daydreaming about warmer weather, sunlit evenings—and the chance to travel around New Zealand to meet with colleagues in November and December. This of course includes the NZSA meeting December 4–6, which will be held in Christchurch at the University of Canterbury. Daniel Gerhard and Elena Moltchanova are leading the organization, and have been able to confirm three excellent plenary speakers: Prof. Hans-Peter Piepho, University of Hohenheim, Germany; Dr Matt Edwards, University of Auckland (winner of last year's early career prize); and Dr Nokuthaba Sibanda, Victoria University of Wellington. Early bird registration will close 30 September, so make your plans now.

I'm pleased to announce that former NZSA president Vanessa Cave has agreed to take over as our awards committee convenor. The society has four awards: the Worsley Early-Career Award; the Littlejohn Research Award, which considers a five-year research portfolio; the Jean Thompson Award for excellence in the application of statistics in New Zealand industry; and our "sustained contribution" award, the Campbell Award. It's always a pleasure to celebrate excellent colleagues, so think about whether someone in your organization should be nominated.

As many of you may know, since the last newsletter came out, the NZSA has joined its voice with many others in calling for a more sustainable university funding model. On behalf of the NZSA, I added my signature to the letter drafted by the Otago and Victoria Student Associations and TEU branches. We also wrote our own letter to the Tertiary Education Commission CEO Tim Fowler, Education Minister Jan Tinetti, the Finance Minister Grant Robertson, and Prime Minister Chris Hipkins. You can read them on our website under "News and Events." Grant Robertson's office did write back to us when there was a subsequent funding announcement—but I think it's fair to say this will be an ongoing issue.

The NZSA has also, on your behalf, joined with the Statistical Society of Australia in commenting on the proposed definition of "statistician" (and data scientist, biometrician, biostatistician et cetera) for the next update of the Australia and New Zealand Standard Classification of Occupations (ANZSCO). In the previous description of statistician, we mainly "produce statistical reports and analyses" while mathematicians got to "solve problems in all areas of the sciences, engineering, technology, social sciences, business, industry and commerce"! We have advocated incorporating this latter phrase into our description as well. This exercise was important but also very 'meta' as the ANZSCO describes all occupations in the Australia and New Zealand labour markets, for use by government and industry in... statistical analysis of the workforce.

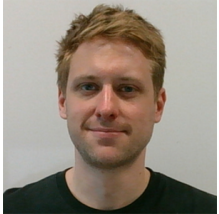
Until next time, Beatrix

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# Editorial

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by BEN STEVENSON



Kia ora koutou,

Welcome to Newsletter Issue 89! We have another bumper publication for you, filled with announcements of conferences, updates from committees, and

local news to catch up with.

I'm pleased to announce that the Mathematics and Statistics groups at both the University of Otago and Victoria University of Wellington feature in our Local News section once again. Welcome back, and it's been a little while: about five years for Otago, and six for Victoria! A big thanks to our new regular contributors, Matt Parry and David Huisjer, respectively.

Thankfully Matt and David didn't collectively provide decade's worth of updates, otherwise we might have smashed Issue 87's record as the longest newsletter in the entire history of the NZSA—a claim I can now verify because our full history of issues is now [online](#)! I announced that

we had tracked down our final few missing issues in a previous editorial, but they've only recently appeared on our webpage. The record-breaking issue was my first as editor, and its length is testament to either New Zealand's thriving statistics scene—or perhaps my lack of editorial judiciousness! Given that our list of regular contributors is growing by the issue, I am inclined to go with the former.

As always, please send any items to [newsletter@stats.org.nz](mailto:newsletter@stats.org.nz) for our next issue, planned for February 2024. In particular, I hope to recruit a couple of roving reporters to contribute articles about our NZSA Conference. The event will be held 4–6 December 2023, as advertised later in this issue. Please get in touch if you'd like to volunteer as a reporter: industry or academic, veteran or first-timer, all perspectives are very welcome.

Hei konā mai,

Ben

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# Upcoming Conferences and Lecture Series

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## Biometrics in the Bay of Islands 2023

by VANESSA CAVE AND JAMES CURRAN



You are cordially invited to the joint conference of the **Australasian Region of the International Biometric Society** and Statistics in Ecology and Environmental Monitoring. The conference is being held in the beautiful Bay of Islands from 27 November to 1 December, 2023. Registration and abstract submission are now open via the conference [website](#). Earlybird registration closes 30 August, so please register soon!

We are delighted to share our exciting list of **invited speakers**:

- **Lisa Warbrick** (Ngāti Awa, Ngāti Rangitīhi, Te Atihaunui a Pāpārangi), Te Pū Oranga Whenua, Aotearoa New Zealand.
- **Joanne Potts**, The Analytical Edge, Australia.

- **Adrian Baddeley**, Curtin University, Australia.
- **Hans-Peter Piepho**, University of Hohenheim, Germany.
- **David Warton**, University of New South Wales, Australia.

Lisa, Joanne, Adrian, Hans-Peter, and David will help explore the themes of the conference, which are statistical genetics/omics, spatial/temporal modelling, experimental design/surveys, biostatistics, agricultural statistics, demographic/population modelling, multivariate statistics, statistical consulting: best practice and collaboration, data governance/sovereignty, machine learning for environmental and ecological applications.

This conference is an excellent opportunity to mingle with fellow statisticians interested in the biosciences, and to keep abreast of the most recent developments in applied statistics.

We hope to see you there!



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## NZSA Conference 2023

by ELENA MOLTCHANOVA AND DANIEL GERHARD



The 73rd annual NZSA conference will be hosted by the University of Canterbury, Te Whare Wānanga o Waitaha, at their Christchurch Campus from Monday 4th December to Wednesday 6th December 2023. A precise schedule will be available once abstract submission closes. Registration and abstract submission are at <https://www.stats.org.nz/nzsa2023/>.

We are very pleased to advise the following plenary speakers have been confirmed:

- Prof Hans-Peter Piepho, University of Hohenheim
- Dr Matt Edwards, University of Auckland
- Dr Nokuthaba Sibanda, Victoria University of Wellington

The registration fees are as follows:

- NZSA or SSAI members: \$350 for early-bird registration, \$400 otherwise
- Student member: \$250 for early-bird

registration, \$300 otherwise

- Non-member: \$450 for early-bird registration, \$500 otherwise

The early-bird registration deadline is 30 September 2023.

For most of its first 100 years the University was situated in the centre of Ōtautahi Christchurch (now the Arts Centre) but moved to its current location in 1975, a spacious, purpose-built 76-hectare site in the suburb of Ilam. The 'new' University campus has a central complex of libraries, lecture theatres, laboratories and student accommodation surrounded by playing fields, woodlands and the renowned Ilam Gardens. Ernest Rutherford, Canterbury's most distinguished graduate, studied at the University in the 1890s. He discovered his scientific ability during a year of postgraduate research before taking up a scholarship to Cambridge. He would go on to win the Nobel Prize in chemistry and in 1917 became the first person to split the atom.

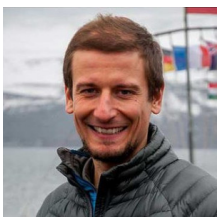
UC now has a diverse range of study options, offering over 120 qualifications in more than 150 subject areas. Ten local accommodation facilities provide board for more than 2 200 students.

We look forward to seeing you all in December.

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## MIGARS 2024

by GABOR KERESZTURI



2024.

The International Conference on Machine Intelligence for GeoAnalytics and Remote Sensing (MIGARS) will be in Shed6 in Wellington, Aotearoa New Zealand from 8-10 April

MIGARS is a technically co-sponsored conference by IEEE-Geoscience and Remote Sensing Society and IEEE-Computational Intelligence Society (CIS).

MIGARS aims to bring together researchers, industry professionals, and students from around the world to share and showcase recent

developments at the interface of machine learning, computational science, and remote sensing, and their implementations in agriculture, forestry, geosciences, minerals/mining and land and water monitoring from space.

Paper submissions are now open until 15 October

2023. The topics and important dates can be found on our website: <https://conferences.co.nz/migars2024/call-for-papers/>.

See you all at MIGARS in Wellington!

Should you have any questions, please email it to Gabor Kereszturi at [g.kereszturi@massey.ac.nz](mailto:g.kereszturi@massey.ac.nz).

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## Ihaka Lecture Series 2023

by PAUL MURRELL



In March 2017 the Department of Statistics at the University of Auckland launched an annual lecture series named after Associate Professor Ross Ihaka in honour of his contributions

to the field.

The theme of the 2023 Ihaka Lecture Series is **Bringing numbers to life**. For many, data visualisation is an entry point into either providing or understanding statistical information. Data visualisation provides a powerful tool for turning numbers into something that anyone can consume, whether for communication, for exploration, or just for pleasure.

The 2023 Ihaka Lecture Series brings together three speakers whose work focuses on making data visualisations that communicate well, provide user interaction, and look spectacular.

### Live in Auckland:

- 📍 MLT2/303-102, Building 303, 38 Princes Street, University of Auckland
- ☕ Refreshments available from 6:00pm
- 🕒 Lectures begin at 6:30pm
- ✓ Register [here](#)

### Lecture 1 Interactive graphics and data analysis

- 👤 Prof Antony Unwin
- 📄 First Professor of Computer-Oriented Statistics and Data Analysis, Augsburg University, Germany
- 📅 Thursday 28 September 2023

### Lecture 2 Unpredictable paintings: Making generative artwork in R

- 👤 Dr Danielle Navarro
- 📄 Pharmacometrician, Certara, Australia
- 📅 Thursday 12 October 2023

### Lecture 3 What's Behind the Map: The Process of Data Visualisation

- 👤 Dr Chris McDowall
- 📄 Surveillance and Intelligence Specialist, Te Whatu Ora, Aotearoa New Zealand
- 📅 Thursday 19 October 2023

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## New Zealand Mathematics and Statistics Postgraduate Conference 2023

by SAMUEL BASTIDA, SAPIR BEN-SHAHAR, MARK BISHOP, LAIA EGEA CORTES, ELLEN HAMMATT, MALCOLM JONES, DIAMANT PIREVA, SHONAUGH WRIGHT, AND RUOFEI XIE

The New Zealand Mathematics and Statistics Postgraduate society organizes an annual conference for students from around Aotearoa.

This year, the conference will be held 29 November to 1 December, 2023, in Wellington.

While maintaining a high standard of excellence, with superb plenary speakers, the NZMASP conference is a more relaxed and social student conference which emphasizes networking and developing friendships alongside the sharing of knowledge. Most of New Zealand's universities are separated from each other by a considerable distance.

For the last two decades, the NZMASP conference has been instrumental in creating friendships and connections between mathematics and statistics postgraduate students from these different

universities which last well beyond their studies. The conference serves as a platform for students to deliver their research to a general mathematics audience, and many cherish this event for the constructive feedback they receive in preparation for international conferences and provisional year reviews.

On the statistics side of things, Charlotte Jones-Todd from the University of Auckland is an invited speaker. Further details about the conference are available at <https://nzmasp2023.wordpress.com/>.

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# Stories of Interest

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## NZSA Awards

by VANESSA CAVE, CONVENOR OF THE AWARDS COMMITTEE



The composition of the **NZSA Awards Committee** has recently changed, with Matthew Schofield standing down and new members joining. Many thanks to Matthew for his dedicated service as the Convenor of the NZSA Awards Committee since 2018. Welcome to our new committee members: Matt Edwards, Jie Kang, and Claudia Rivera.

### Call for Nominations

The NZSA recognizes our members contributions to the New Zealand statistical community through the Campbell, Littlejohn, Worsley and Jean Thompson awards.

The **Campbell Award** is the premier honour bestowed by the NZSA and is awarded in recognition of an individual's contribution to the promotion and development of statistics in New Zealand.

The **Littlejohn Award** is the NZSA's research award, recognising excellence based on publications during the five calendar years preceding the date of the award.

The **Worsley Award** recognises outstanding recent published research from a New Zealand statistician in the early stages of their career. In particular, applicants must be within seven years of confirmation of their PhD, or their highest completed degree.

The **Jean Thompson Award** recognizes excellence in the application of statistics in New Zealand industry, including business, Crown Research Institutes, government agencies and departments, media, etc. The award celebrates the insightful use of statistical thinking and practice in solving practical problems and creating value.

**Nominations for the 2023 awards are currently open!** Nominations (or queries about these awards) should be emailed to Vanessa Cave, Convenor of the NZSA Awards Committee at [vanessa.cave@auckland.ac.nz](mailto:vanessa.cave@auckland.ac.nz). **The closing date for nominations is Sunday 15th October.**

Congratulations to the 2022 winners: Len Cook (Campbell Award), Ting Wang (Littlejohn Award), Matt Edwards (Worsley Award) and Ian Westbrooke (Jean Thompson Award). Their citations can be found in the [previous newsletter](#).

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## Meet the NZSA Executive

by BEN STEVENSON

For each newsletter issue I interview a member of the current NZSA executive committee, giving them an opportunity to introduce themselves, tell us their about their role on the committee, what they do for work, and perhaps what they do in their own time.

For this issue, our column is a little different to usual. I invited Harold Henderson to be our subject, because he is leaving the executive committee at the end of this year. He reflects on his decades of service below.



## Harold Henderson



*How long have you served on the NZSA Executive Committee, and which roles have you held?*

I have been a long-time member of the executive. I served as joint editor of the newsletter (1989–1993), President (1993–1995), membership convenor since 1999 (ably assisted by colleague Catherine Cameron), and member of the awards committee since 2004.

I'll be stepping down from the executive committee at our AGM this year. I've really enjoyed my time on the committee.

*What have you enjoyed most?*

It's been great interacting with so many interesting people through the years. I thoroughly recommend getting involved in association activities and serving on the executive committee.

I've also enjoyed being in teams organising conferences. These include the joint International Biometrics and NZSA conference at the University of Waikato in 1992. There were 461 delegates representing 36 countries. Also in 2001 I was part of a team that organized the Australasian Biometrics and NZSA Joint Conference in Christchurch.

Many of you have probably been in a photo I've taken at our conferences.

*Yes, you snapped one of me at my first ever conference, and it's **still online!***

*What is your current job or connection with the NZ statistics community?*

My work life since 1979 has been as a statistician at AgResearch Ruakura. That has been great too! I've been in a phased retirement since 2018 and am now on a casual contract.

*Here's my most important question. When you proofread these newsletters you manage to find an astonishing number of typos, despite my best efforts at catching them myself. Are you willing to continue acting as one of the official Newsletter proofreaders?*

I've had a long association with the newsletter. When a paper copy was distributed to members a team of us at Ruakura used to stuff envelopes with newsletters for mailing. I liaised with the printer so, with colleague Catherine Cameron, proofread the newsletter.

Thanks Ben for your kind comments on this. I'm happy to continue proofreading.

*That's a relief! How will you spend the extra time you'll have, now that you won't need to attend Executive Committee meetings?*

I'll now have more time to enjoy our lifestyle block just out of Hamilton, body surfing at **Raglan**, and barbershop singing.

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# Updates

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## Student and Early Career Statisticians' Network

by JIE KANG AND RORY ELLIS

There is just one small update from the Student and Early Career Statisticians' Network for this issue. We have a new Auckland representative, Michael Walker. Here is Michael's biography.

### Michael Walker

My name is Michael Walker a third-year university student from Auckland. I'm pursuing a double major in Biology and Statistics, something I am very excited about! I have a passion for all things biology and love to uncover hidden information and trends using the power of statistical analysis.



I am excited to represent my fellow early career statisticians and hope that I can help them connect to each other and to exciting opportunities.

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## NZSA Mentoring Program

by LISA THOMASEN



### Cohort 2

Cohort 2 of the NZSA Mentoring Program is in full swing. A few stats on Cohort 2:

- 14 mentors, 9 of whom were involved in Cohort 1
- 22 mentees, 5 of whom were involved in Cohort 1
- 10 mentoring pairs
- 4 mentoring groups with 2–3 mentees
- 1 peer mentoring group with 3 mentees
- 2 people involved as both mentors and mentees

- 33 people attended 2023 launch webinar in March
- 22 mentors/mentees attended meet and greet sessions in May

After the success of last year's program, it is exciting to see many new people getting involved with the program this year. There are also 12 people who are involved for a second year which is a great testimonial to the benefits of the program.

Mentors and mentees were matched throughout the month of April, with the program kicking off in May. Meet and greet sessions were held in early May for both mentors and mentees to give participants the opportunity to get to know others in the program and discuss tips for getting the most out of mentoring. Follow up meet and greet sessions have also been scheduled for early

August.

This year the options were expanded from mentoring pairs to a variety of different options.

### Group mentoring

This year there are 4 mentoring groups consisting of 1 mentor and 2 or 3 mentees. Feedback from last year indicated mentees felt there was a lot they could learn from each other, as well as from their mentor. The expectation of these groups is that they meet up together, rather than the mentor having one-on-ones with each of their mentees.

### Peer mentoring

This year there is one peer mentoring group made up of 3 mentees. They are encouraged to facilitate discussions between themselves. I will be interested to see how this works without a mentor involved as to whether this is something offered in future cohorts. The advantage of offering peer mentoring is that mentees can still be involved in the program even when there is an imbalance of mentors and mentees.

### Being a mentor *and* a mentee

Two of this year's participants are involved in the program as both a mentor and a mentee. Both individuals were involved in the program last year, one as a mentor and one as a mentee. I will be interested to hear from both individuals how manageable it is to commit to two mentoring relationships at the same time.

### Technical discussion groups

This year's survey included the option of technical discussion groups. There was a lot of interest in this option, but I decided not to pursue this option this year. Everyone who selected this option, was also interested in at least one other mentoring format. There is also a very diverse set of technical areas that people are interested in. I think there would be benefits to offering technical discussion groups in future. I am keen to see if there is anyone else who would be interested

in helping to organise the technical discussion groups in parallel with the mentoring program.

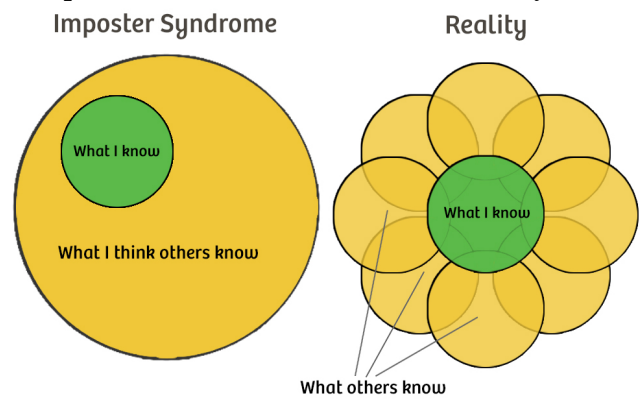
### Lunch 'n' learns

I am planning to offer 2 or 3 lunch 'n' learn sessions this year. Once organised, these sessions will be promoted via the NZSA mailing list and S&ECS social media pages. Please get in touch if you have a topic idea or would like to help facilitate one of these sessions.

### Imposter syndrome

Have you ever experienced imposter syndrome? Mentoring and talking about it can help minimise its effect. You'll soon realise everyone, (including you!) has their own niche.

My mentoring group and I recently had a discussion on imposter syndrome. It's likely that many readers of this newsletter have felt this at some point in their career, if not recently.



Here are my tips for minimising the effects of imposter syndrome in your life:

- Focus on your progress—elephants are eaten one bite at a time!
- Stop comparing yourself to others
- Give yourself the benefit of the doubt
- Talk to others about how you're feeling
- Minimise your time on social media
- Feel the fear and do it anyway—don't let imposter syndrome stop you!
- Offer to help or mentor someone less experienced—**sign up to be a mentor in 2024!**

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# Statistics Education Teams

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## Statistics Education Research

by MAXINE PFANNKUCH



### People in Statistics Education Research

Congratulations to Anna Fergusson for the successful completion of her PhD thesis, *Towards an integration of statistical and computational thinking: Development of a task design framework for introducing code-driven tools through statistical modelling*, ([link](#)), the calibre of which was recognised through placement on the Dean's List.

Congratulations also to Amy Renelle for the completion of her PhD thesis, *A multidimensional analysis of randomness misconceptions: Triangulating teachers' concept knowledge flexibility, opinions of the concept of randomness, and use of multisensory learning*, ([link](#)).

Maxine Pfannkuch, pictured here with Chris Franklin, ASA K-12 Ambassador, at the 2023 USCOTS conference, where she received the George Cobb Lifetime Achievement Award for timeless and continuing contributions to the improvement of statistics education (<https://www.causeweb.org/cause/lifetime/2023>). The conference was held at Penn State University, Pennsylvania, at the beginning of June. At the opening session of USCOTS, Maxine gave a five-minute talk along with eight others on the conference theme “communicating with/about data.” Before the USCOTS Conference the Inaugural Research Satellite Conference was held, at which Maxine gave the closing session presentation.



Maxine Pfannkuch (right) alongside Chris Franklin (left) with the George Cobb Lifetime Achievement Award.

### CensusAtSchool Project

The CensusAtSchool project, under the co-direction of Rachel Cunliffe and Anne Patel, launched its eleventh biennial online census for Years 3–13 students on February 13 2023. Over 34 220 students have taken part so far and the expectation is that it will become the biggest CensusAtSchool ever. Pip Arnold is the resource developer. See <https://new.censusatschool.org.nz/> including the live dashboard to see who is participating and a selection of student responses.

### Statistics Education Conference Involvement

Pip Arnold participated in SRTL-13 as a discussant in June 2023 in Maleny, Queensland, Australia and also gave a presentation at the World Statistics Congress in Ottawa in July 2023. Chris Wild was a keynote speaker at the IASE Satellite

Conference in Toronto in July 2023, at which Anna Fergusson also gave a presentation. Many people are now preparing papers to submit within the next six weeks for two upcoming conferences: OZCOTS in Wollongong, Australia in December 2023 and ICME-15 in Sydney in July 2024.

The IASE Roundtable conference will be held in Auckland at the beginning of July 2024. Anna Fergusson is leading the local organising team. See <https://iase-web.org/Conferences.php?p=Upcoming>.

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## Statistics Education Committee

by MIKE CAMDEN



### Congratulations to Maxine

The 2023 George Cobb Lifetime Achievement Award in Statistics Education was presented to Maxine Pfannkuch at the USCOTS Awards Session, on Friday 2 June this year, in Pennsylvania USA.

Chris Franklin reports that she was honoured to give the US introduction for Maxine at the award ceremony: *“The video introduction from Aotearoa New Zealand with Chris Wild and all was a hit. Maxine is an amazing ambassador for New Zealand, and for the George Cobb lifetime award.”*

The Tribute Book (<https://www.causeweb.org/cause/lifetime/2023>) shows how Maxine is respected and welcomed around the world. We are very fortunate, here in Aotearoa New Zealand, that Maxine has contributed so much to the statistical education community, and that she’s still doing so.

Congratulations and thanks, Maxine, and thanks also to the people who made and supported the nomination.

### More about members

We congratulate Anna Fergusson and Amy Renelle on completing their PhDs.

We welcome Stephanie Budgett (University of Auckland) to the committee. She is already working hard with us on probability and pedagogy issues.

The NZ Association of Mathematics Teachers has arranged for copies of Pip Arnold’s new book, *Statistical Investigations: Te Tūhuratanga Tauanga* to go to all secondary schools. See <https://www.nzcer.org.nz/nzcerpress/statistical-investigations-te-tuhuratanga-tauanga>.

Members Chris Wild, Pip Arnold, and Anna Fergusson presented in July at the IASE Satellite in Toronto or the World Statistics Congress in Ottawa. Please see the Statistics Education Research page for details. Chris’s plenary at the Satellite is titled *Walking Backwards Into the Future*. See <https://www.stat.auckland.ac.nz/~wild/talks/IASE2023/>. He asks, among other things, “how can we future-proof our children/students and build resilience in anticipation of a rapidly and unpredictably changing landscape?”

Pip Arnold attended the **SRTL conference** in Brisbane at the end of June. The conference topic was data and data-ing. Pip was a discussant, presenting her thoughts on what data and data-ing was as a result of the presentations and discussions at the conference.

### Refreshments

On May 15, the Ministry of Education published the refreshed English and Mathematics and Statistics learning areas of the New Zealand Curriculum. They are on the **Curriculum Refresh**

[website](#). We made extensive submissions into the writing process, and put further work into probability. Most of what we recommended is in this 'final draft', but was subject to the Ministry's constraints on length of the document. The Ministry will release supporting resources this year.

The fully refreshed curriculum for all eight learning areas will be ready for implementation from early 2027, but the Maths and Stats is ahead, and is influencing the development of the new NCEA standards. At NCEA Level 2, we have two subjects (Maths, and Stats), with four Achievement Standards each. This gives us an opportunity to be world leaders at this level. The Review is at [this link](#).

The Ministry's Literacy & Communication and Maths Strategy "aims to lift educational outcomes for all ākonga in Aotearoa New Zealand." Within this, the 'Common Practice Model' includes a plan for the pedagogy for Maths and Stats. The Phase 1 document is released, and the Ministry's team is working on Phase 2 for release later this year. We've made extensive inputs into both phases, with the intention of having the key features of statistical pedagogy built in. See [this link](#).

NZQA invited feedback on its biennial review of the New Zealand Scholarship Subject List. We replied: "We are clear that Scholarship Statistics is a very positive part of the Aotearoa New Zealand school system, and our strong view is that it needs to stay." We think that it asks for a level of statistical thinking that challenges and is appropriate for learners at that level, and that the recent examinations have assessed

the appropriate level of statistical thinking. Its approach can be adapted and enhanced when the Curriculum Refresh and the new NCEA Level 3 standards are in place.

Scholarship Stats has a Performance Standard and Descriptors, available at [this link](#).

### More issues

We've renewed contact with counterparts in Australia. Peter Howley reports from there that their new school curriculum values and recognises statistics more than it was previously, with statistics mostly entering at years 4 and 5. Their resource at [www.statstuneup.com.au](http://www.statstuneup.com.au) will be useful to anyone needing a tune-up.

We're considering two projects that would involve some costs. The projects are a handbook on probability, and a series of videos of workshops on the areas that teachers would most like support in. We've considered a protocol for seeking funds from NZSA, talked with the NZ Institute of Physics about their methods of resource creation, and enquired about other sources of funding.

The NCTM (National Council of Teachers of Mathematics, USA) annual conference will be in the last week of October. They have a pre-conference half day session on statistics and data science at K-8, sponsored by the joint ASA-NCTM conference. Chris Franklin is presenting. The joint committee continues to discuss how to bring more awareness to teacher educators and teachers of the open source peer reviewed resources available at the ASA website, and international resources such as the NZ Census at School website.

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# Local News

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## Fonterra

by LISA THOMASEN



The Fonterra R&D statistics team has been reduced to two. Rory Ellis finished up in our team at the end of May and moved back down to Christchurch with his family to

start a new role as a data scientist for MBIE. We gave Rory a send off by meeting for burgers in Taupō. We picked a particularly grey and blustery day and could barely see the lake despite the cafe we chose being on the lakefront. We also had a round of bowling to round out the afternoon.

Roger, Matt and I spent three days in June sharing our stats knowledge with this year's Fonterra Graduate Technical Program students. It was refreshing to share our passion for experimental design rigour and using appropriate data visualisations to present the stories hidden in the numbers.

I'm curious to know how many other statisticians

within the NZSA community have had suggestions from their upper managers that statisticians could be replaced by some mashup of ChatGPT and Wolfram Alpha. I know I have significant biases in this area, but I feel this approach is akin to removing the barrier from the top of the cliff and replacing it with an ambulance at the bottom.

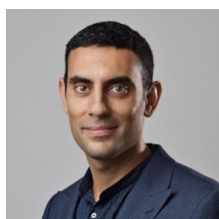


*From left: Roger Kissling, Lisa Thomasen, Rory Ellis, and Matt Schroder at Rory's farewell lunch.*

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## Foodstuffs

by MAZEN KASSIS



In previous pieces, I've written to you about the fact we at Foodstuffs North Island are on a data and analytics journey. To better appreciate the progress we've made, context is important.

Our organisation, a 100 percent New Zealand-owned cooperative, is over 100 years old and our Foodies whānau of 24,000 have a

duty to serve about 3 million Kiwis per week. Change anywhere can be challenging but in an environment like ours, describing it as a "challenge" can sometimes be an understatement. Nevertheless, within the last 12 months, we've witnessed the introduction of brand-new data disciplines, never seen before in our organisation, such as data engineering and data governance, which I interpret as a sign of increasing organisational maturity.

Furthermore, such changes seem to be occurring at a faster rate than ever before. In the coming couple of months, we expect to put into production our new cloud infrastructure, which I referred to in my NZSA Newsletter update in March 2023, signalling a revolution in data and analytics at Foodies. So, things on the infrastructure and skills side are shining.

The focus now needs to be on a third horizon, the cultural one. Embedding good practice in the use and maintenance of our data assets is important. Having access to the best data in the world is of limited value if no one knows how to use it, or if the quality of the data is not maintained. You can scream and shout “we want AI, and we want it

now!” as much as you want, but we, as statistical people understand that the value of AI lies in data and the equation “garbage in equals garbage out” rings true now more than ever.

Exposure to the cultural side of data and analytics is something I believe I would have significantly benefitted from during my university life, but something that sadly was not baked into the curriculum. Speaking to recent graduates nowadays, it seems not much has changed. It might be time to properly consider how to equip students with this critical knowledge and skills, to help them affect meaningful change earlier in their careers and set them up for success in the long term.

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## Plant & Food Research

by DUNCAN HEDDERLEY



things.

There is not much to report from Plant and Food. We were not badly affected by the flooding, although Sean Husheer in Hawkes Bay was busy for a while, helping to fix

Olivia Angellin-Bonnet gave a talk online to the NZSA/SSAI Early Career Researchers group at the end of June. She talked about a number of ideas from software engineering (data and code versioning, unit testing, workflow management systems) which she has been applying.

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## Luma Analytics

by OLIVER STEVENSON



Despite the ongoing turbulent Auckland weather, it has been a bright start to 2023 for Luma Analytics. Since our last NZSA update, I am pleased to report that we have made good on our promise to move into a new office space to accommodate our growing team. Now based on the waterfront of the Auckland CBD, the team is enjoying ocean views while reflecting on the latest Databricks update or discussing the merits of R versus Python for different machine learning

problems.

Workwise we've continued to grow our data science and modelling portfolio, most recently assisting a client with stress testing and econometric modelling in the financial sector. Given the somewhat uncertain economic environment the country is currently operating within, this has been an interesting and unique opportunity for the team to consider how changes in various economic indicators might affect the local economy under a range of hypothetical scenarios.



Strategically, our team has also enjoyed learning more about and advising on the implementation of data mesh architectures across large organisations. As the industry continues to evolve and data becomes more central to business decision-making, we have observed first-hand the bottlenecks that can occur with organisations that have centralised data teams. Thinking about data as a product that may be used beyond a specific team or domain enables large businesses to develop more robust processes around structuring and maintaining data sets, reports, and models. This in turn, can allow for more accurate and more efficient sharing of data both internally within a business, and externally with the public and other organisations.

Finally, in the last few months Luma Analytics celebrated its 5th birthday, which was a great opportunity to reflect on our journey from an initial idea, to a startup, to now a fully-fledged data and analytics consulting business. It has been a real team effort getting to where we are

today and we are very thankful for our talented and innovative team (both past and present), who are constantly pushing boundaries and embracing innovation to move faster and do more with data. A special thanks must also go to our clients, customers, and partners who have been on the journey with us. It has been a real pleasure to be working with and trusted by some of the biggest brands and companies in the market!



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## Te Papa Atawhai, Department of Conservation

by ELLEN CIERAAD



Our regular online Stats Café remains a popular event. The sessions are attended by 3–40 staff each month and generally include a feature presentation followed by discussion, and sometimes an added bite size tips and tricks feature. Over the last few months we've covered a variety of topics. In March, Graeme Elliott talked about analysing bird counts in area with different management histories in South Westland. David Burlace presented some of his work looking at impacts of droughts on assets, and provided a demo of how to connect R to ArcGIS using the `arcgisbinding` package. Ian Westbrooke discussed statistical methods for Data Assessment and Environmental Significance, based on an example from DOC's annual reporting and an application in the Environment Court/RMA context. We also heard from Jen Germano and Richard

Earl about impacts of climate change on New Zealand's native frogs, and Kate McNutt talked in detail about DOCs Inventory and Monitoring toolbox, which helps staff set up monitoring and observational studies.

We have started running the data science courses again, using a hybrid online-MOOC (massive open online course) set up: R basics and Visualisation in R using `ggplot2`. Participants work, at their own pace, on the Harvard edX online courses of the same name, and then we provide a weekly online wrap-around support session in-house. In these sessions, we go through some of the content, answer questions and do live online coding using conservation-related examples. The R basics course was very well received, and people enjoyed the combination of the online content with more targeted conservation-based and interactive in-house sessions. We're in the

middle of the visualisation course, and are aiming for a similar set up there.

In September, Ian Westbrooke and I are teaching the Designing Studies for Monitoring and Observational Studies course in-person. Science and technical staff at Te Papa Atawhai Staff often have university degrees where the focus in

(ecological) statistics courses and similar has been on experimental design and hypothesis testing. Using a combination of lectures, case studies and discussions, focussed around participants' own projects, this course aims to upskill staff in practical design issues for observational studies, including monitoring—where controls and randomisation are often not as straight-forward.

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## Statistics Research Associates

by ROBERT DAVIES



SRA is slowly morphing into a social group of old colleagues and we are often joined by Len Cook and Shirley Pledger at our Wednesday lunches. David Harte and Alistair Gray are still actively involved in paid-for projects, Peter Thomson has research projects with Victoria University and John Maindonald is putting the

finishing touches on his book "A Practical Guide to Data Analysis Using R" - fingers crossed that it will be out early next year. Co-authors are W John Braun and Jeffrey L Andrews from the University of British Columbia.

We have resumed visits to David Vere-Jones at Parkwood Retirement Village in Waikanae every couple of months following the Covid lockdown.

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## Biostatistics Centre on Dunedin Campus, University of Otago

by ANDREW GRAY



It has been another busy six months since the last of these columns. The highlight must be Professor Robin Turner's Inaugural Professorial Lecture (Approaching Significance) in April. We're very proud of Robin and extraordinarily grateful for her leadership, particularly given the challenges faced over the five years she has been here. If you missed her lecture you can watch it at <https://youtu.be/ZAFcqfALxQM>.

The next big event on the horizon for us is the first New Zealand Biostatistics Conference (<https://events.otago.ac.nz/2023-biostatistics-conference/>), which takes place 21–22 November. The conference is organised by the Biostatistics Centre

and supported by the University of Otago, the Caucus for Women in Statistics, and Stata. As well as keynotes and invited talks from Professor Michael Hudgens, Research Associate Professor Claire Cameron, Robin, and Stata's Dr Chuck Huber, we will have a wealth of fascinating talks from biostatisticians, other researchers with an interest in biostatistics, and research students. We hope to see many of you there.

We've continued our popular series of biostatistics workshops (including Robin's enjoyable and educational Introductory Biostatistics for Health Researchers course and our longest running workshop, expertly delivered by Dr. Ari Samaranayaka as always, on Stata). We have a special pre-conference workshop (20 November) for health researchers, medical professionals,

and postgraduate students who want an introduction to some of the fundamental aspects of biostatistics. Following the conference, Michael Hudgens will be running a two-day workshop on causal inference on 23–24 November.

Biostatisticians in the Centre were very successful with the latest HRC funding round, including Research Associate Professor Jill Haszard (*Whakatipu rakatira: improving sleep as a vehicle to grow healthy future leaders*), Ari (two projects: *Stepped rehabilitation for people with persistent shoulder pain* and *Hinapōuri ki Hīnātore: Improving mental health outcomes and services*), Robin (*Connected: Who benefits from online delivery of mental disorder treatment*), and myself (*A molecular triage test to reduce colposcopy referrals after HPV testing*). Jill is also involved with Dr Lisa Daniels' HRC Emerging Researcher Grant.

The Centre has continued to contribute to its series of articles on biostatistics in the New Zealand Medical Students Journal, with the latest (and eighth) one being *The review process from a biostatistics perspective* (authored by Claire, Ari, and Robin). You can read this at <https://nzmsj.scholasticahq.com/article/73287>.

Emeritus Professor Peter Herbison (who welcomed many of us to the biostatistics group over his 40 years here) has been made a life member of the Cochrane Collaboration in recognition of his outstanding service and

contributions.

A very satisfying illustration of the ability of research projects with a biostatistician as a member of the team having an influence on policy was a project Ari was involved on that looked at the impact of removing prescription charges. Ari also celebrated his 25th anniversary at the University of Otago. Just 15 more years to catch up with Peter, Ari!

We greatly enjoyed a visit from Claire and Ari's colleague from years past, Professor Markus Neuhäuser (now at the Koblenz University of Applied Sciences). Markus gave a thought-provoking seminar on using propensity scores for the analysis of observational studies.

There have been far too many accomplishments from our research students to list all of them here. As a selection, we were delighted for Lou Fangupo (supervised by Jill) who was awarded an exceptional PhD thesis (*Supporting the development of a novel, culturally relevant sleep intervention for whānau (families) with pēpi (infants) in Aotearoa New Zealand*), and also to see Nan Xin Wang (supervised by Claire) and Malama Tafuna'i (supervised by Robin) graduate with their PhDs, and Nisa Widyastuti (also supervised by Robin) pass her PhD viva.

There are many other things that could be listed here, but, as usual, I'll suggest that you look at our Twitter/X page [@biostatsotago](#) to see the rest (and perhaps follow us at the same time)!

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## Department of Mathematics and Statistics, University of Otago

by MATT PARRY



The Department of Mathematics and Statistics is pleased by two recent international appointments of members of the Statistics Group. Matt Schofield has started as co-Editor for Biometrics. This is for a three-year term and Matt steps into the shoes vacated by Alan Welsh. In this role, Matt is currently attending a workshop on

Academic Publishing at Academica Sinica, as well as making research visits in Taiwan and Japan.

The other Matt, Matt Parry, has been elected to the Council of the International Statistical Institute (ISI). Matt is keen to represent New Zealand and the South Pacific in this role. Matt was unable to attend the recent World Statistics Congress of the ISI in Ottawa, but he was able to attend a Joint Council remotely, where a number of issues

around a revamped Declaration on Professional Ethics were discussed.

We are delighted to be hosting student Andy Pohl for a short visit. Andy is currently at the University of Calgary, where he is carrying out PhD studies in biomechanics and statistics. Along with local supervisor, Matt Schofield, he recently entertained a group of visiting secondary school students with an account of his studies and his

use of statistics.

Finally, we are very proud of Jess Allen, who received an Outstanding Student and PhD candidate Presentation Award at the European Geosciences Union General Assembly. Her presentation was on spatiotemporal variation in low frequency earthquake recurrence. Jess is currently a PhD student being supervised by Ting Wang.

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## School of Mathematics and Statistics, Victoria University of Wellington

by DAVID HUISJER



There have been a number of changes affecting the Statistics and Data Science group at Victoria University of Wellington since our last report appeared in the NZSA newsletter, including several changes this year. At the start of 2023, everyone was excited to see most of the limitations due to COVID lifted. Among other things, now we are able to have in-person exams for the first time in three years!

At the end of 2022, Ivy Liu stepped down as our Head of School (which also includes the Mathematics group) after four years, during which she guided us with great care and leadership through some very challenging times. For the first six months of 2023 Ivy was on research leave in Singapore and Taiwan. Despite being abroad, Ivy still managed to be on the organising committees of the 2023 IMS International Conference on Statistics and Data Science (ICSIDS) and the Women in Data Science New Zealand 2023 event, at which she also presented.

During 2022 we had several changes in personnel. Both Estate Khmaladze and Stefanka Chukova retired. In fact Estate and Stefanka each joined VUW in the same year, 2001, so our group has benefitted from over two decades of important contributions from them both. We also recently hired a ‘young’ upcoming academic, yours truly, David Huisjer. This gives me the

opportunity to introduce myself. I did my PhD at Auckland University working on Bayesian Statistics in Astronomy. My main interests are applied statistics (Astronomy and Geochemistry), Bayesian statistics, and MCMC methods.

In July 2023 Pete Smith returned from a half year sabbatical, during which he visited the University of Oxford, the University of Bristol, the University of Galway, the University of Glasgow, Queen’s University Belfast, and the University of Melbourne. Pete is a recipient of the IEEE 2023 Neal Shepherd Memorial Best Propagation Paper Award. Nokuthaba Sibanda (the current NZSA Secretary) was a speaker at the Women in Data Science New Zealand 2023 event. Nokuthaba also lectured at the AMSI Winter School 2023 at Queensland University of Technology in early July and will be presenting at the Wellington headquarters of the Royal Society Te Apārangi in August 2023 on “Perspectives on biostatistics and post-graduate research”. As the Associate Dean of Postgraduate Research in the University’s Faculty of Engineering, Nokuthaba will certainly be able to offer some pertinent well-informed perspectives!

Budhi Surya was promoted to senior lecturer last year. This year Budhi has been invited to give a keynote address in September 2023 at an International Conference on Statistics and Data Science in Indonesia, and also has an invitation to present on actuarial science at the University of Melbourne’s Department of Economics. John

Haywood is co-supervising three PhD students from the School of Biological Sciences and in June 2023 one of them, Rose McGruddy, won first prize for the best student presentation at the NZ Honey Bee Research Symposium in Rotorua for her talk, *Using dsRNA for varroa mite control in beehives*. Rose also won first prize at the same conference in 2022—so Rose and her research are becoming quite well known.

I am proud to share the news that David Cox won one of two 2022 Tertiary Teaching Excellence Awards in the Innovation in Learning, Teaching and Curriculum category of the Te Whatu Kairangi–Aotearoa Tertiary Educator Awards. David has been instrumental in developing and delivering some of the bigger statistics and mathematics courses at VUW. Quoting the Ako Aotearoa: “David’s success is evidenced by increasing pass rates, better results for Māori and Pacific learners, and the testimonies of his learners, their whānau, and his peers”.

Along with the whole tertiary education sector in New Zealand, Victoria University has been hit hard financially in recent years—and particularly in 2023. A large number of job losses (or voluntary redundancies) seem inevitable at VUW, and the potential loss of colleagues from across the institution is worrying and unsettling for

everyone. Despite the financial challenges, the University was able to launch Te Whiri Kawe, the Centre for Data Science and Artificial Intelligence (CDSAI) in June 2023. This has been a centre in the making for over four years! The people driving this initiative were CDSAI Director Mengjie Zhang with Deputy Directors Bing Xue from the School of Engineering and Computer Science, plus Richard Arnold and Ivy Liu from the School of Mathematics and Statistics.

To conclude, please allow me to be a bit cheeky and add a bit of advertising. The next IEEE International Conference on Machine Intelligence for GeoAnalytics and Remote Sensing (MIGARS) will be held here in Wellington in April 2024. The general chairs are Alejandro C. Frery (Victoria University of Wellington) and Gabor Kereszturi (Massey University). The conference is a unique effort to explore the confluence of advances in machine intelligence approaches in geoscience, geoanalytics, and Remote Sensing. The conference focuses on connecting researchers from these domains, looking for the potential use of intelligent computational approaches for geo-data-based applications, and serving society at large. For more details, which will be updated over time, see <https://conferences.co.nz/migars2024/>

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## Department of Mathematical Sciences, Auckland University of Technology

by PATRICIO MATURANA-RUSSEL



We are delighted to announce that AUT’s new joint Master of Analytics programme with China Jiliang University (CJLU) starts on 9 October 2023. The programme will be taught by both AUT and CJLU lecturers at the CJLU campus in Hangzhou, China. On completion of study, students will receive AUT’s Master of Analytics degree.

Our department is hosting Dr Lizbeth Naranjo Albarrán from the Department of Mathematics at the National Autonomous University of Mexico

in her one-year sabbatical leave. Lizbeth is undertaking joint research work with Victor Miranda and Patricio Maturana-Russel on generalized additive models and other topics.

Nuttanan (Nate) Wichitaksorn has been invited to give a talk at the 6th International Conference on Econometrics and Statistics (EcoSta 2023) during August 1-3, 2023, hosted by Waseda University, Tokyo, Japan. Nate will virtually present joint work with his PhD student, Rewat Khanthaporn, on Bayesian Estimation of Vine Copula.

Our Mathematical Modelling and Analytics

Research Centre has been conducting a series of seminars during this year. In one of them, Dr Jose (Pepe) Romeo from SHORE and Whariki Research Centre, College of Health, Massey University,

shared part of his work at the centre. The title of his talk was “Estimating child maltreatment cases that could be alcohol-attributable in New Zealand: An application of survival analysis”.

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## Department of Statistics, University of Auckland

by PRIYA PARMAR



Our heartiest news and congratulations go to Maxine Pfannkuch—the recipient of the 2023 George Cobb Lifetime Achievement Award in Statistics Education at the United States Conference on Teaching of Statistics Awards Session. The Department held a celebration on campus for Maxine (who was overseas accepting her award) which included speeches by Chris Wild and James Curran.

student, our own Dr Anna Fergusson for successful defence of her thesis “Towards an Integration of Statistical and Computational Thinking”.

The organisational skills of Stephanie Budget were again well utilised as she brought together Thomas Lumley, Anne Patel, Priya Parmar, David Chen, Lars Thomsen, Kate Less and Heti Afimeimounga to represent the Department once again at Museum of Transport and Technology’s STEM Fair held at the beginning of April. This year’s highlight event was creating and launching paper planes, timing their descent, and fitting a real-time predictive model. Despite popular belief, the red paper plane was not the fastest.



*A celebration for Maxine!*

This is the first time someone from outside USA won the award, and our Dean of Science specially commended Maxine on her international impact perfectly fitting the awards criteria as “an individual who, over an extended period of time, has made lasting contributions with broad impact to the field of statistics education especially, but not limited to, the teaching and learning of college-level statistics”.

Congratulations are also in order for Maxine’s



*Lars Thomsen creating his aircraft.*

The University of Auckland hosted the Incredible Science event which saw several primary and intermediate schools get a short (and sweet) “hands-on” taste of the sciences. David Smith and Priya Parmar kept students engaged with analytic brainstorming sessions, colour probability dice

game and equally colourful (but perhaps more flavourful) fruit bursts.

We hope to see those children become future statistics students to add to our growing list. The most recent March graduation featured 214 statistics grads. Congratulations to our PhD graduands, Kevin Cheng, Anjali Gupta, Tong Chen, and our very own Anne Patel (another successful supervision by Maxine Pfannkuch), 18 Master of Data Science, 27 Master of Professional Studies (Data Science), 1 MA, 8 MSc (Statistics),

3 PGDip (Statistics), 3 GDip (Statistics), 7 BSc(Hons - Statistics), 16 BSc (Statistics) and 127 BSc (conjoint statistics).

Soon-to-be graduands include Dr Yifu Tang who was highly commended with defence of their thesis “Bayesian nonparametric spectral analysis of time series”. Other successful PhD completions include Dr Yixuan Liu, Xiaomeng Zheng, Yujin Kim, Amy Renelle, David Chan, and our very own Dr Anna Fergusson.