

**From:** [Statistical Society of Australia](#)  
**To:** [Marie-Louise Rankin](#)  
**Subject:** Stats Matters & Events  
**Date:** Thursday, 14 March 2024 3:14:39 PM



## STATS MATTERS & EVENTS

14 March 2024

Welcome to this week's newsletter. Obviously, I could not let the significance of publishing a newsletter on 14 March slide by without referring to Pi Day!

Pi Day only became "a thing" in 1988. It was founded in 1988 by Larry Shaw, an employee of the San Francisco science museum, the Exploratorium. Larry and his colleagues at the Exploratorium celebrated the first Pi Day by marching around a circular space and then consuming fruit pies.

Over the years, Pi Day has gained popularity worldwide as a fun and educational celebration of mathematics. It's often marked by various activities, such as reciting digits of pi, baking and eating pies, and engaging in mathematical discussions and competitions.

Sadly, the creation of Pi Day in 1988 was too late for me to reap the benefits as a student. My children, however, loved Pi Day! Their teachers regularly honoured the occasion by bringing pies to school, making learning about pi a whole culinary experience. While this may have confused the children about the spelling of the word, it certainly piqued an interest in the most studied number in mathematics.

As we celebrate Pi Day today, let's reflect on the beauty of its intricate connection to the world of statistics. While pi may be infinitely irrational, the joy it brings to mathematicians and statisticians is perfectly rational. And on Pi Day, that's reason enough to celebrate with a slice of pie (or two)!

Happy Pi Day everyone.

[Marie-Louise Rankin](#)

Executive Officer

*Read newsletter in your [browser](#)*

---

### **In this newsletter:**

[UNESCO report on unveiling gender disparities in AI and charting a path to inclusive innovation](#)

[Addressing the mathematics education gap for Aboriginal and Torres Strait Islander students: Working with ATSIMA](#)

[On the principles of professional statistical practice](#)

[Advancing prostate cancer care: Two Canadian MRI-guided trials transform diagnosis and treatment worldwide](#)

[Join the ECSSC2024 Committee – Apply before 22 March 2024](#)

[SSA's Equity, Diversity and Inclusion Committee: calling for new members](#)

[The Tjanpi Award for best Student paper in Environmental Statistics -](#)

[Last Chance!](#)

[SSA events](#)

[Current Job Vacancies](#)

---

### **UNESCO report on unveiling gender disparities in AI and charting a path to inclusive innovation**

A study by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) titled "Challenging systematic prejudices: an investigation into bias against women and girls in large language models" investigated the level of diversity of content in AI-generated texts. The findings were published last week, just in time for International Women's Day.

The report starts with addressing the widespread issue of bias against women and girls on a global scale, explaining how it is deeply ingrained and spans multiple aspects of society, economics, and politics. Numerous obstacles to gender equality persist, such as gender-based violence, unequal pay and the lack of women in leadership positions, among others. Indeed, gender bias remains prevalent worldwide, as indicated by the 2023 UNDP Gender Social Norms Index, which found that nearly 90% of both men and women harbor fundamental biases against women. Not surprisingly, this bias has found its way into the world of Artificial Intelligence (AI) and large Language Models (LLMs).

As AI systems are trained using extensive datasets sourced from human language and interactions, they unintentionally absorb and perpetuate the biases inherent in these training materials. Consequently, large language models (LLMs) have the potential to reinforce stereotypes, biases and violence against women and girls. This can occur through biased AI recruitment tools, gender-skewed decision-making in sectors such as finance and insurance or even medical or psychiatric misdiagnosis stemming from demographically biased models or norms. According to the findings of the study, AI may contribute to job displacement, disproportionately affecting women, particularly in industries where they constitute a significant portion of the workforce or exacerbate the digital divide in education by failing to promote inclusivity. Furthermore, the underrepresentation of women in AI development and leadership roles may result in the creation of socio-technical systems that overlook the diverse needs and perspectives of all genders, thereby perpetuating stereotypes and gender disparities once again.

On a brighter note, the report concedes that AI has the potential to promote the goals of gender equality and equity on a global scale if it is ethically and inclusively utilised. It concludes that if AI is intentionally designed to reduce rather than reinforce inequality and gender disparity in its interactions with society, it could significantly contribute to advancing these aims.

Read the full report in the UNESCO Digital Library [here](#).

---

### **Addressing the mathematics education gap for Aboriginal and Torres Strait Islander students: Working with ATSIMA**

The SSA Office recently received the following email from the [Aboriginal and Torres Strait Islander Mathematics Alliance \(ATSIMA\)](#):

"In February 2024, the Australian Government's released its annual Closing the Gap Report. The report states that 'Outcome 5: Aboriginal and Torres Strait

Islander students achieve their full learning potential' is NOT on track. MORE NEEDS TO BE DONE.

We all know that a successful maths education opens doors to career and life opportunities, and Community and economic advantage.

The Aboriginal and Torres Strait Islander Mathematics Alliance (ATSIMA) is a not-for-profit, Aboriginal-led organisation collaborating with Communities, schools and education systems through co-designed professional learning opportunities to close the unacceptable gap in numeracy/mathematics outcomes of Aboriginal and Torres Strait Islander students.

Please see link to ATSIMA's current [professional learning programs](#) that support schools and education systems to make the change they need. Please disseminate this through your networks.

Contact us to discuss how we can support you to make a difference.

Kind regards

The ATSIMA Team  
Aboriginal and Torres Strait Islander Mathematics Alliance

---

### **On the principles of professional statistical practice**

This week I stumbled across a post on X (formerly Twitter) by SSA member Taya Collyer which I found very interesting. She referred to W. Edwards Deming's article on the "Principles of Professional Statistical Practice", commenting:

“Deming 1965 is almost 60 years old now. I feel like very little has changed on this point... “

The statistician has no magic touch by which he may come in at the stage of tabulation and make something of nothing. Neither will his advice, however wise in the early stages of a study, ensure successful execution and conclusion. Many a study, launched on the ways of elegant statistical design, later boggled in execution, ends up with results to which the theory of probability can contribute little.

You can read Deming's paper [here](#).

*Taya is quoted with her permission.*

---

## **Advancing prostate cancer care: Two Canadian MRI-guided trials transform diagnosis and treatment worldwide**

Hamilton Health Sciences (HHS) is a family of six hospitals and a cancer centre, providing healthcare research in Hamilton, Ontario, Canada. The HHS' media room recently published an article about two groundbreaking clinical trials, led by Dr Gregory Pond, one of their researchers, I aimed at enhancing the care for prostate cancer patients worldwide. The studies, ASIST and PRECISE, focused on utilising magnetic resonance imaging (MRI) to refine the diagnosis and treatment of prostate cancer.

ASIST, conducted from 2010 to 2015, investigated whether MRI, alongside the standard systematic biopsy, could identify additional high-risk cancers. Following its success, PRECISE, running from 2015 to 2017, explored if MRI could determine the necessity of biopsies, potentially sparing patients from unnecessary invasive procedures.

Prostate cancer diagnosis typically relies on PSA blood tests and biopsies, which carry risks and may miss cancer. Pond emphasised the invasiveness of biopsies and the potential for adverse effects. Through ASIST and PRECISE, Pond and his team aimed to improve patient outcomes globally.

Both trials, sponsored by the Ontario Clinical Oncology Group (OCOG), lacked financial support from drug companies, thus highlighting the significance of academic research in advancing patient care. ASIST showed MRI's potential in guiding treatment decisions, while PRECISE demonstrated the efficacy of targeted biopsies based on MRI findings.

The studies not only improved risk assessment but also minimised unnecessary biopsies, enhancing patient safety and reducing healthcare costs. Pond's work, recognised for its transformative impact, highlights the importance of academic research in healthcare advancement.

Although the initial findings showed no change in cancer detection rates two years post-study, ongoing long-term evaluations aim to assess the sustained benefits of the MRI-guided approach.

Read the full story [here](#).

---

**Mentioned in previous newsletters:**

**SSA's Equity, Diversity and Inclusion Committee: calling for new members**

The SSA's Equity, Diversity and Inclusion Committee is looking for new members, and if you're keen to ensure that the SSA is an equitable, diverse, and inclusive society, we invite you to join us.

The EDI Committee meets once every 6 weeks, and works towards ensuring that our Society is equitable, inclusive and diverse. To find out more about what the EDI Committee has done in the past, and aims to do in the future, please visit the SSA website [here](#).

If you're interested in learning more or joining the committee, please get in touch with our [Executive Officer](#) by March 21.

---

### **Join the ECSSC2024 Committee – Apply before 22 March 2024**

The Early Career and Student Statistician Network (ECSSN) is busy preparing for the Early Career and Student Statistician Conference (ECSSC) 2024, to be held across multiple venues in WA, Tasmania and New Zealand later this year.

We are currently looking for some energetic members to get involved and help shape ECSSC2024. Being able to add a role on the ECSSC2024 committee to your resume is attractive to employers and funding bodies, is a great opportunity to expand your network, and is a lot of fun!

To apply for a role on the committee and get involved with the conference planning for our Early Career and Student Statisticians, please click [here](#) and submit your Expression of Interest by Friday, 22 March 2024.

---

### **Election of Executive Members**

Members are advised that the Executive positions of Secretary and Treasurer will become vacant at the Society's Central Council Annual General Meeting in 2024.

Members of SSA are invited to submit nominations for the two positions to be vacated. Nominations must be in writing and signed by the nominator(s), and must be accompanied by a written and signed statement from the nominee accepting the nomination. Nominations should be submitted to the SSA President ([president@statsoc.org.au](mailto:president@statsoc.org.au)) or to a Branch President before 1 May 2024.

**Doug Shaw**, Secretary

---

---

## The Tjanpi Award for best Student paper in Environmental Statistics -

### Last chance to apply!

Nominations are now being accepted for the 2023 Tjanpi Award, the annual student prize for best student paper in environmental statistics, sponsored by the SSA Environmental Statistics Section. To be eligible a student must be:

- An author of a paper that has been accepted during 2023, having made a substantial contribution to the work
- A student as of 30 June 2023
- A current member of the SSA and the Environmental Statistics Section

The winner will receive \$500 and will be asked to present in an invited session on environmental statistics at the next annual stats conference.

Please submit your nominations to [eo@statsoc.org.au](mailto:eo@statsoc.org.au) (self-nominations welcome), with Tjanpi Award submission in the header, by 5 PM AEDT Friday 15 March 2024, including:

- Full name, institution
- Paper, as one pdf file.
- Letter of support from supervisor or other academic at the institution, confirming student status of applicant and describing the student's role in the paper.

David Warton  
Chair, Environmental Statistics Section



Central Australian landscape dominated by Tjanpi, photo by Sara Winter

*Tjanpi is the Pitjantjatjara word for Triodia, a spiny tussock-forming grass that dominates*

*the vegetation across more than 20% of Australia's land mass. It is a long-lived plant that makes deep roots and can withstand the harshest of conditions. It can grow over decades into characteristic ring formations three metres in diameter. As a source of food and shelter, Tjanpi is fundamental to life in some of Australia's most extreme conditions, being central to highly diverse ecosystems dominated by termites and ants, as well as reptiles, birds and small mammals. It has also been traditionally used by Indigenous people for a range of purposes, including building shelters, making an adhesive resin, basket weaving, fishing and using its seeds as a food source.*

*Tjanpi is an analogy for the Environmental Statistics student award – because the development and application of appropriate statistical techniques is fundamental to good environmental research, and our hope is that the recipient of this award will grow over the coming decades to become central to a diverse range of interesting research endeavours!*

---

## SSA Events

### SSA Vic & Tas AGM

19 Mar 2024, 5:30 PM – 6:00 PM (AEDT) @ Staff Tea Room, Peter Hall Building, The University of Melbourne OR CSIRO, 3-4 Castray Esplanade, Battery Point, Hobart OR online via Zoom

Join us for the SSA Vic & Tas annual general meeting, where we will recap on our last year and vote in the new council for 2024. The annual report will be made available closer to the date of the AGM.

Following the AGM we will be hearing from Helen Baird, Program Manager a/g of the Standards, Classifications and Business Register Branch at the Australian Bureau of Statistics on how the ABS develops standards. To find out more and register for the talk, visit the [event page](#)

To register for the AGM you must be signed in to your SSA member account.

There are **3 tutorials** being offered on March 26th. Register now, one of them is almost full.

### Visualising high-dimensional data, presented by Di Cook

26 Mar 2024, 1:00 PM – 4:30 PM (AEDT), Online

Click [here](#) to register.

This is for scientists and data science practitioners who regularly work with high-dimensional data and models and are interested in learning how to better visualise them. You will learn about recognising structure in high-dimensional data, including clusters, outliers, non-linear relationships, and how this can be used with methods such as supervised classification, cluster analysis and non-linear dimension reduction.

### Visualising spatial uncertainty, presented by Petra Kuhnert



26 Mar 2024, 9:00 AM – 12:30 PM (AEDT), Online

Click [here](#) to register.

This is for research scientists wishing to visualise uncertainty on maps and keen to gain a greater understanding of visualisations available in the Vizumap R package and how to generate them.

**Introduction to Machine Learning with tidymodels, presented by Max Kuhn**

26 Mar 2024, 9:00 AM – 12:30 PM (AEDT), Online

Click [here](#) to register.

This is for data scientists wanting to improve their modeling skills, and gain a better understanding of machine learning models.



**SA Branch AGM**

20 Mar 2024, 6:00 PM – 7:00 PM (ACDT), University of Adelaide, Braggs Building Seminar Room 2.14



**SSA NSW: 2024 AGM + Lancaster Lecture**

Presented by Dr. Gordana Popovic.

28 Mar 2024, 4:30 PM – 7:00 PM (AEDT), Room 4082, Anita B. Lawrence Centre (previously Red Centre), UNSW



**Statistical Consulting Network Monthly Meet-Up**

22 March 2024, 12:30 PM – 1:30 PM AEDT, held online

Come along with your thinking cap, maybe a problem, and some lunch!

The Statistical Consulting Network invites you to their monthly meet-up, a virtual lunchtime meeting where statisticians help each other out with problems that they aren't sure how to deal with. This virtual meeting is held on Zoom at lunchtime on the last Friday of each month, 12:30-1:30 PM (AEDT) (unless it's a public holiday, like this month, when we will hold the event the week before). We start each meet-up with announcements, or occasionally a special topic discussion, then discuss problems that attendees have brought along with them.

We also have a Slack workspace where members of the consulting network can communicate between meetings, or post problems or relevant materials they would like to discuss during a meeting.

[Zoom link](#)

Password: 660145

[Slack Workspace link](#)

---

### **Canberra Branch AGM - 26 March 2024, 5:00pm AEDT**

The Canberra Branch AGM will be held in hybrid format, both in person at ANU and by Zoom, at 5.00pm AEDT on Tuesday 26 March 2024. After the AGM there will be a talk given by Pauline Ding, the outgoing branch president.

### **Canberra Branch Meeting - Optimising Twin Uniform Distribution for Multiplicative Noise Data Masking**

26 Mar 2024, 6:00 PM – 7:00 PM (AEDT), In-person and online via Zoom

SSA Canberra invites everyone to attend its post-AGM branch meeting, where our outgoing branch president Pauline Ding will be dazzling us with her research on data masking!

Multiplicative noise masking is a well-known method to perturb data for privacy protection purpose. Twin uniform distribution has been introduced in the literature as a distribution for multiplicative noise, given the simplicity in its mathematical form and the ability to provide good value protection without sacrificing statistical utility. We further explore the impact of various distribution parameters on the performances of privacy protection and utility loss when multiplying twin uniform noise for data masking. An approach to optimise the multiplicative noise scheme with twin uniform noise distribution is proposed. We apply the optimisation algorithm to a real accounts payable dataset, and conclude that it yields good results for both privacy and utility.

To obtain the Zoom link or sign up for the dinner click [here](#).

---

### **Fast Integrative Factor Models: Applications from Nutritional Epidemiology to Cancer Genomics**

10 April 2024, 4:30 PM (AEST), online

The Bayesian Section of SSA is hosting the webinar: Fast Integrative Factor Models: Applications from Nutritional Epidemiology to Cancer Genomics

presented by Dr. Alejandra Avalos-Pacheco. Learn about novel sparse latent factor regression (FR) and multi-study factor regression (MSFR) models, designed to tackle covariate effects and systematic biases. Explore dimensionality reduction and sparse low-rank covariance estimation techniques, while gaining insights into bioinformatics applications.

To register click [here](#).

---

## **Sampling II Course**

2 -23 May 2024, weekly online, one hour a week

The Social Research Centre and the Statistical Society of Australia (SSA) are very proud to offer statistical training from the International Program in Survey and Data Science (IPSDS), a joint program of the University of Mannheim and the Joint Program in Survey Methodology at the University of Maryland.

Sampling II presents different applications of the methods and techniques covered in the Sampling I course. This is also an applied statistics methods course concerned almost exclusively with the design of data collection rather than data analysis. The course will concentrate on sampling applications to human populations, since this poses a number of particular problems not found in sampling of other types of units. The principles of sample selection, though, can be applied to many other types of populations.

Early bird rates are only available until 15 March so click [here](#) for details and to register.

---

## **Why not give the SSA Career Centre a go?**

The [SSA Career Centre](#) features individuals with specialised skills precisely aligned with your requirements. Jobseekers subscribe to receive job postings directly in their inboxes, ensuring your openings are seen not only by engaged candidates but also by passively looking professionals who are currently working.

Our robust posting services allow you to describe your openings with detailed descriptions and easy application processes. Opt for premium placement options to give prominent visibility to your opportunities – such as featuring your logo on a rotating carousel at the top of the SSA Career Centre.

Promote your job vacancy [here](#).

## Current Vacancies in SSA's Career Centre

[View All Jobs](#)

---

If you have news from the Australian statistical community to share in Stats Matters and Events, please get in touch [with us](#)! We love getting feedback too.

[Unsubscribe](#)