

## **Annual Report: Education Committee of NZ Statistical Association: December 2016 to November 2017**

Mike Camden. For AGM of Tue 12 Dec 2017.

The AGM needs to note the magenta text, about our plans for 2018, at the end of this report.

### **We aim to be proactive**

2017 was our second year of using our strategy document. It states that *overall we want to:*

- *cooperate and collaborate with key stakeholders*
- *maintain a high profile across key stakeholders*
- *maintain our currency in statistical best practice and statistics education research*
- *proactively seek out and assess new opportunities for statistics education.*

The progressive ideas in the 2007 *NZ Curriculum* are now assessed in the NCEA Achievement Standards at all three levels. We aim to support teachers and assessors in continuing to move into the *Curriculum's* ideas.

Further details of our purpose in life are in the web page:

<http://www.stats.org.nz/committees/education>

### **We see the need for a new wave of proactive thinking towards the next curriculum**

The new issues include:

- data science, and data harvesting and wrangling, algorithmic thinking and coding
- predictive modelling
- geo-coded data and maps
- text and image data
- reproducible research and workflows via using dynamic documents
- the relation of Statistics with Digital Technologies.

### **Committee membership includes a wide range of statistical educators**

Here's the 2017 membership. The first eight people formed the steering group for 2017.

- Alasdair Noble (AgResearch) (convenor and link with NZSA Executive)
- Mike Camden (secretary)
- Maxine Pfannkuch (University of Auckland)
- Pip Arnold (Cognition Education)
- Chris Wild (University of Auckland)
- Michelle Dalrymple (Cashmere High School)
- Anna Fergusson (University of Auckland) (meetings scribe)
- Mark Hooper (Otago Boys' High School)
  
- Derek Smith (University of Otago)
- John Harraway (University of Otago)
- Sashi Sharma (University of Waikato)
- Marion Steel (Epsom Girls' Grammar School)
- Jeanette Chapman (Otago Girls' High School)
- Marie Fitch (University of Auckland) (deputy chair)
- Ruth Kaniuk (Lynfield College)
- Andrew Tideswell (Stats NZ)
- Robyn Headifen (University of Auckland)
- Jeremy Brocklehurst (Avondale College)
- Maheswaran Rohan (Auckland University of Technology)

- Tilman Davies (University of Otago)
- Dave Phillipps (Lincoln High School)
- Jake Wills (Kapiti College)
- Christine Franklin (American Statistical Association and University of Georgia, USA)
- Emma Mawby (Stats NZ)
- Anne Lawrence (Massey University)
- Rachel Passmore (University of Auckland)
- Rhys Jones (University of Auckland)
- Matthew Parry (University of Otago).

This year we:

- farewelled long-term statistical activist Alex Neill into retirement from the committee
- celebrated John Harraway's move out of full-time work, contributed (via Alasdair) to the symposium in his honour, and noted his ongoing active interest in statistical education
- welcomed back stalwarts Emma Mawby and Anne Lawrence
- welcomed new arrivals from overseas Rhys Jones and Matt Parry. We look forward to the insights they bring with them into NZ.

We had four meetings in the year, with the help of the Zoom conferencing service. We thank the University of Otago (and in particular Greg Trounson) for their support with this service. Attendance went like this:

Date	Attendees	Apologies	Total
15/02/17 Wedn	11	10	21
02/05/17	7	16	23
03/08/17	5	16	21
08/11/17	14	9	23

### **We prioritised our goals for the year**

We agreed these six items at the start of 2017:

Priorities:

1. Statistics education in the primary sector
2. Establishing an online statistics teaching journal for New Zealand
3. Datasets: sourcing, processing and making fit for assessment data that engages and is useful for students
4. Future of our stats curriculum.

Ongoing activities

1. Collaboration with the Joint ASA/NCTM committee in the USA
2. Reviewing implementation of the statistics strand within the mathematics and statistics learning area of the *NZ Curriculum*.

A feature of the year has been increasing pressure on members' time from outside sources, and this has limited what we've been able to do. However, we have made some progress on all of these items. Some of this is outlined below.

### **We released two statements via the CensusAtSchool site**

They are on:

- the future of statistics in work and life  
<http://new.censusatschool.org.nz/2017/03/13/statistics-in-school-and-the-future-of-work/>  
 The future of work has received plenty of research and media attention, and this has implications for statistical education.

- Digital Technologies Hangarau Matihiko and Statistics  
<http://new.censusatschool.org.nz/resource/feedback-on-the-draft-digital-technologies-hangarau-matihiko-consultation-booklet/>

The Ministry of Education wants to prepare NZ young people for a digital age, and has prepared curriculum and assessment documents. Assessment at NCEA Level 1 will be available next year. We see synergies between this area and statistics.

### **We engaged with teachers at the NZAMT mathematics teachers' conference in Christchurch**

We ran a forum for teachers of statistics, and noted their concerns, particularly about assessments. We see the difficulty in getting a balance between holistic marking and focusing on particular words or phrases. We hope to be able to support NZQA and their moderators about this balance.

We claim some credit for the very successful statistical plenary presented by Christine Franklin (American Statistical Association and University of Georgia, USA). She is on the committee!

Several committee members presented workshops.

### **We're proposing a new electronic journal: *DAMIT***

We plan that *Data And Models In Teaching* will contain peer-reviewed lesson plans from NZ teachers. The plan was well received by teachers at NZAMT, and is modelled on the ASA's *Statistics Education Web (STEW)*; an online resource for peer-reviewed lesson plans for K–12 teachers in the USA.

### **Members have had plenty of international engagement**

This includes:

- links between ourselves and the ASA/NCTM committee in the USA
- active interest in Australian ideas about Data Science programmes
- participation in WSC and its IASE/IAOS satellite
- Chris Wild's keynote address at USCOTS
- organisation of and presentations at the SRTL Forum in Rotorua, with another keynote by Chris
- Anna's workshops at JSM/MWM in Baltimore, USA.

ASA/NCTM = American Statistical Association / National Council of Teachers of Mathematics

WSC = World Statistical Congress

IASE/IAOS = International Association for Statistical Education / International Association for Official Statistics

USCOTS = Unites States Conference on the Teaching of Statistics

SRTL = Statistical Reasoning, Thinking, and Literacy

JSM/MWM = Joint Statistical Meetings / Meeting Within a Meeting.

We hope to create new links next year with the Royal Statistical Society.

### **We're planning for 2018**

We'd like the AGM to endorse our proposed Steering Group for 2018:

- Alasdair Noble (AgResearch) (convenor and link with NZSA Executive)
- Mike Camden
- Maxine Pfannkuch (University of Auckland)
- Chris Wild (University of Auckland)
- Michelle Dalrymple (Cashmere High School)
- Anna-Marie Fergusson (University of Auckland)
- Mark Hooper (Otago Boys' High School).

We'd like the AGM to consider and comment on our priorities for 2018. They are very similar to the 2017 priorities, and are:

Priorities:

1. Statistics education in the primary sector
2. Establishing an online statistics teaching journal for New Zealand
3. Datasets: Sourcing, processing and making fit for assessment data that engages and is useful for students
4. Future of our school statistics curriculum

Ongoing activities

1. International collaboration with partners in the USA and UK
2. Reviewing implementation of the statistics strand of the *NZ Curriculum*, with inclusion of assessment.