

<p style="text-align: center;">First Year in Maths NSW</p> <p style="text-align: center;"><i>Statistical Knowledge: How is the role of statistics changing in the first year curriculum?</i></p> <p style="text-align: center;">Monday 11th December 2017</p> <p style="text-align: center;">Western Sydney University, Parramatta campus*</p> <p style="text-align: center;">EB.3.33, EB.3.36</p>	
9:30–10:00	Registration, tea/coffee
10:00–11:00	Ayse Bilgin Unveil the curtain. Let them see the world!
11:00–11:20	A quick cuppa
11:20–11:50	Adelle Colbourn and Kate Hartup Is it too late to master your numeracy when the days in your Masters are numbered?
11:50–12:20	Talib Hashim Effective techniques of teaching functions for first year university students
12:20–12:50	Gizem Intepe Examining students' interaction with mathematics consultation using text mining
12:50–1:50	Lunch
1:50–2:50	Anna Wethereld Changes to the stage 6 maths syllabus
2:50–3:20	Jason Stanley Are intelligent tutoring systems the future?
3:20–3:50	Samantha Clarke A geoscientists journey in the world of statistics education
3:50–4:15	Afternoon tea
4:15–4:50	Workshop: First-year statistics—changes?
4:50–5:00	What's next?
5:45–late	Dinner: Hyderabad House, 39/17–19 Hassall St, Parramatta (own cost). This is 5 minutes walk from Parramatta Station.

* *The Parramatta South campus is on the corner of James Ruse Drive and Victoria Road.*

This event is supported by the Centre for Research in Mathematics and the Office of the Pro Vice-Chancellor (Learning Transformations), Western Sydney University.

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Information on presenters and presentations

Invited speakers

Ayse Aysin Bilgin Ayse is an Associate Professor in the Department of Statistics at Macquarie University. She is the Vice President of the International Association for Statistical Education (IASE) and an elected Member of the International Statistical Institute (ISI). Ayse’s research explores applications of statistics in health sciences.

Ayse has won several learning and teaching awards for her outstanding contributions to student learning such as ALTC citation for ‘Outstanding Contributions to Student Learning’. Her pedagogical research interests are focused on statistics education, such as learning approaches in statistics, impact of learning spaces to students’ learning.

Unveil the curtain. Let them see the world!

Nowadays, there is no debate about the usefulness of statistics to any discipline whether science or social science since data about everything is recorded somewhere and can be analysed for evidence-based decision-making. However, it is important to note that “We have too many first year statistics students but we have a few who choose to major in statistics” is a common complain among academics in the discipline of statistics. In other words, most universities have large first year classes (i.e. thousands of students) and small second or third year classes (i.e. less than fifty) in statistics. We also know many students are happy to say “I passed the first year statistics unit, it was too hard and now I do not remember anything”. Very few students, and very few people ever say “I love Statistics, if they do, they are considered odd or in statistical terms “extreme outliers”, there must be something wrong with them.

In this talk, I will present “Statistics: Your Ticket to Anywhere” event and how it helped us to unveil the curtain and to show students the value of statistics in their chosen field of study. In addition, I will present the analysis of our (third year - capstone) students reflections on their learning to become statisticians, themes emerging from their reflections and the nature of the assessments within the unit which might help others to see what students actually value in their learning.

Anna Wethereld Inspector, Mathematics & Numeracy, Curriculum and Assessment Standards, NESAs.

Changes to the stage 6 maths syllabus

Other speakers

Adelle Colbourn and **Kate Hartup** are from MESH, Western Sydney University and Notre Dame (Sydney) respectively.

Is it too late to master your numeracy when the days in your Masters are numbered?

This talk gives an overview of the new National Numeracy Test for initial Teacher Education students, and outlines an online project being jointly implemented at Western

Sydney University and Notre Dame University (Sydney) to assist Education students to prepare for it.

Talib Hashim is from Western Sydney University.

Effective techniques of teaching functions for first year university students

The concept of a function is central to university mathematics, but at the same time important also in secondary school mathematics, and thus highly relevant also to teacher education. Functions are a core element, introduced in algebra and built upon for the rest of a student's mathematical career. Moreover, functions appear in most mathematics courses, but in my experience as a student, teacher, and lecturer of mathematics it is often not very comprehensively treated as an object of study in its own right. The purpose of this presentation is to suggest some techniques such as analogy, diagram, story, and others for teaching the concept of a function to first year university students and pre university college students.

Gizem Intepe is from MESH, Western Sydney University.

Examining Students' Interaction with Mathematics Consultation using Text Mining

There has always been a requirement for learning support in mathematics and statistics in tertiary education and the need for support in universities in Australia is increasing rapidly. Mathematics Education Support Hub at Western Sydney University provides support to students at the libraries in all campuses to increase their understanding, knowledge and abilities in numeracy, mathematics & statistics. Team assists all students regardless of program whether undergraduate or not and collects data on every consultation from the very beginning. This study examines tutor's explanations about the students' query on every consultation between 2013 and 2017 to work out the topics that students struggle the most and seek help during their degree. Useful information from the documents are extracted and processed by R as a text mining tool. Research showed that, interestingly but not surprisingly, main topics that students need help appears to be almost same for all levels of study.

Jason Stanley is from UTS.

Are intelligent tutoring systems the future?

Technology is impacting in so many different ways in the STEM space it can be difficult to identify where to put teaching energy. Here comes yet another innovation in teaching and learning in the mathematics domain, Intelligent Tutoring Systems, ITS. ITS will help us make a leap forward, invoking artificial intelligence to bridge the human machine divide when learning and teaching mathematics to advanced levels!

Samantha Clarke is from the University of Sydney.

A Geoscientists journey in the world of Statistics Education

In this talk, Samantha will discuss her recent journey from marine geologist researcher/lecturer to academic developer in the School of Mathematics and Statistics at the University of Sydney. Samantha will share some insights picked up along the way and talk about current works in practice in her role as non-domain expert helping to develop new statistics content as part of the major curriculum redevelopment for University of Sydney's new Undergraduate Experience. <http://sydney.edu.au/science/people/samantha.clarke.php>