



2016 JOINT NZSA + ORSNZ CONFERENCE

27th-30th November 2016

Auckland University of Technology

New Zealand

The logo for Auckland University of Technology (AUT), consisting of the letters 'AUT' in a white, outlined, sans-serif font, centered within a black square.

AUT

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WELCOME

Dear Delegate,

Welcome to the 2016 Joint New Zealand Statistical Association (NZSA) and Operations Research Society of New Zealand (ORSNZ) Conference. This is the fourth year that the two societies have combined their annual conferences and the first time for either society to have their conference hosted by Auckland University of Technology (AUT). We are privileged to have you attend this year's conference and hope you find the talks interesting and enjoyable.

We have a comprehensive conference programme featuring 120 presentations including several plenary speaker sessions; Professor Di Cook (Monash University, Australia), Professor David Morton (Northwestern University, USA), Dr Kevin Ross (Orion Health), Dr Michael O'Sullivan (University of Auckland), and Professor Rhema Vaithianathan (AUT). The conference presentations will cover the following areas: data visualisation and journalism, analysis of health and health economics data, genetics, stochastic modelling, statistical theory, Bayesian methods, environment and biodiversity, generalised linear models, demography, model selection, optimisation, simulation and scheduling.

We have scheduled several additional events during the conference. Monday evening will feature an early career networking session generously sponsored by Suez (Derceto). Tuesday will feature the annual general meetings for both NZSA and ORSNZ (5:15pm-6:30pm) in WG403 [NZSA] and WA220 [ORSNZ]. This will be followed by a delicious buffet dinner on-site (WG201) prepared by AUT's renowned culinary experts. The conference will finish at 2:30pm on Wednesday and will be followed by the Analytics Forum (generously sponsored by SAS).

If you are presenting at the conference, please check the conference programme for the time and location of your presentation. You should have received an email from the organising committee providing a set of instructions for presenters. We will have several student volunteers wearing AUT branded t-shirts. Please feel free to ask them, or us if you have any questions.

We hope you thoroughly enjoy the 2016 Joint NZSA + ORSNZ Conference.

Priya Parmar and Sarah Marshall
Co-chairs 2016 Joint NZSA + ORSNZ Conference

ORGANISING COMMITTEE

- Priya Parmar (Co-Chair, AUT)
- Sarah Marshall (Co-Chair, AUT)
- Steve Taylor (programme chair, AUT)
- Anthony Downward (ORSNZ secretary, University of Auckland)
- James Curran (University of Auckland)
- Alain Vandal (AUT)
- Nick Garrett (AUT)
- Janet Pearson (AUT)
- Maheswaran Rohan (AUT)
- Golbon Zakeri (ORSNZ president, University of Auckland)

PROGRAMME COMMITTEE

The Programme Committee comprises expertise across four New Zealand universities and was responsible for reviewing abstract submissions. This committee maintained a high academic standard, providing independent, fair reviews for all received submissions.

- James Curran, Department of Statistics, University of Auckland
- Anthony Downward, Department of Engineering Science, University of Auckland
- Robin Hankin, Department of Mathematical Sciences, Auckland University of Technology
- Yoonsuh Jung, Department of Statistics, University of Waikato
- Kate Lee, Department of Mathematical Sciences, Auckland University of Technology
- Sarah Marshall, Department of Mathematical Sciences, Auckland University of Technology
- Priya Parmar, Department of Biostatistics and Epidemiology, Auckland University of Technology
- Carl Scarrott, School of Mathematics and Statistics, University of Canterbury
- Steve Taylor, Department of Biostatistics and Epidemiology, Auckland University of Technology

PROGRAMME OVERVIEW

Monday 28th November		Tuesday 29th November		Wednesday 30th November	
8:30	Registration	8:30	Registration	8:30	Registration
8:50	Welcome and official conference opening	8:50	Housekeeping	8:50	Housekeeping
9:20	MA Plenary: Professor Diane Cook	9:00	TA Plenary: Dr Michael O'Sullivan	9:00	WA Concurrent sessions
10:20	Morning Tea	10:00	Morning Tea	10:20	Morning Tea
	MB Concurrent sessions		TB Concurrent sessions		WB Concurrent sessions
12:25	Lunch	12:05	Lunch	12:00	Lunch
13:15	MB Concurrent sessions	12:55	TC Concurrent sessions	13:00	WC Plenary: Professor David Morton
			13:55 Break	14:00	Closing Remarks
			14:00 TD Plenary: Dr Kevin Ross		
15:00	Afternoon Tea	15:00	Afternoon Tea	14:15	Afternoon Tea
15:20	MD Concurrent sessions	15:20	TE Concurrent sessions	14:30 - 18:00	Analytics Forum (WG403)
16:00	Break	16:00	Break		
16:05	ME Plenary: Data Journalism discussion panel	16:05	Plenary: Professor Rhema Vaithianathan		
17:30	Early Career Networking session	17:15	AGMs		
		18:30	Conference dinner		

Other Conference Events

- Sunday 27th November: Welcome function 5-7pm WG201
- Thursday 1st December Data Visualization Workshop, 9am WT301
- Thursday 1st December Health Analytics Workshop, 10am WA224

DAILY SCHEDULE

Sunday 27th November		Room
5:00pm-7:00pm	Welcome Reception Collect delegate bags & Drinks and nibbles	WG201
Monday 28th November		
8:30am	Registration	WG201
8:50am	Formal Welcome <ul style="list-style-type: none"> • Introductory notes by Vice Chancellor Derek McCormack and Professor Jeffrey Hunter • Housekeeping 	WG403
9:20am	MA Plenary: Professor Diane Cook	WG403
10:20am	Morning Tea	WG201
10:40am	MB Concurrent sessions Presentation start times: 10:40, 11:00, 11:20, 11:45, 12:05 Alignment Break: 11:40-11:45	
	<ul style="list-style-type: none"> • Ordination 	WG403
	<ul style="list-style-type: none"> • Stochastic Modelling 	WG126
	<ul style="list-style-type: none"> • Mixtures Modelling /MCMC 	WA224
	<ul style="list-style-type: none"> • YPP session 	WA220
12:25pm	Lunch	WG201
1:15pm	MC Concurrent sessions Presentation start times: 13:15, 13:35, 13:55, 14:20, 14:40 Alignment Break: 14:15-14:20	
	<ul style="list-style-type: none"> • Analytics Education/Spatial-temporal modelling 	WG403
	<ul style="list-style-type: none"> • Statistical Theory 	WG126
	<ul style="list-style-type: none"> • Bayesian Statistics 	WA224
	<ul style="list-style-type: none"> • Transport/YPP session 	WA220
3:00pm	Afternoon Tea	WG201
3:20pm	MD Concurrent sessions Presentation start times: 15:20, 15:40	
	<ul style="list-style-type: none"> • Software Packages 	WG403
	<ul style="list-style-type: none"> • Stochastic Modelling 	WG126
	<ul style="list-style-type: none"> • Transportation Modelling 	WA224
	<ul style="list-style-type: none"> • Dairy Modelling 	WA220
4:00pm	Break	
4:05pm	ME Plenary: Data Journalism Panel	WG403
5:00pm	<i>End of conference presentations</i>	
5:30pm	Suez Early Career Social Networking Event	WA224

Tuesday 29th November		
8:30am	Registration	WG201
8:50am	Housekeeping	WG403
9:00am	TA Plenary: Dr Michael O’Sullivan	WG403
10:00am	Morning Tea	WG201
10:20am	TB Concurrent sessions Presentation start times: 10:20, 10:40, 11:00, 11:25 Alignment Break: 11:20-11:25	
	• Health Analytics / NZSA CPD Review	WG403
	• Genetics	WG126
	• Demography	WA224
	• Combinatoric Optimisation	WA220
12:05pm	Lunch	WG201
12:55pm	TC Concurrent sessions Presentation start times: 12:55, 13:15, 13:35	
	• Health Analytics	WG403
	• Generalised Linear Models	WG126
	• Multicriteria Optimisation	WA224
	• Census Collection / Electricity	WA220
1:55pm	Break	
2:00pm	TD Plenary: Dr Kevin Ross	WG403
3:00pm	Afternoon Tea	WG201
3:20pm	TE Concurrent sessions Presentation start times: 15:20, 15:40	
	• Health Economics	WG403
	• Electricity	WA220
	• Poster Session	WG201
4:00pm	Break	
4:05pm	TF Plenary: Professor Rhema Vaithianathan	WG403
5:05pm	<i>End of conference presentations</i>	
5:15pm	Annual General Meetings	
	• NZSA	WG403
	• ORSNZ	WA220
6:30pm	Conference Dinner	WG201

Wednesday 30th November		
8:30am	Registration	WG201
8:50am	Housekeeping	WG403
9:00am	WA Concurrent sessions Presentation start times: 09:00, 09:20, 09:40, 10:00	
	• Environment / Biodiversity	WG403
	• Statistical Theory	WG126
	• Electricity	WA220
10:20am	Morning Tea	WG201
10:40am	WB Concurrent sessions Presentation start times: 10:40, 11:00, 11:20, 11:40	
	• Performance and Supply Chains	WG403
	• Bayesian Statistics	WG126
	• Model selection	WA224
	• Tourism Analytics	WA220
12:00pm	Lunch	WG201
1:00pm	WC Plenary: Professor David Morton	WG403
2:00pm	Formal close of conference	WG403
2:20pm	Afternoon Tea	WG201
2:30pm	Analytics Forum	WG403

POST CONFERENCE WORKSHOPS

Thursday 1st December		Thursday 1st December	
Health Analytics WA224		Data Visualisation by Professor Dianne Cook	
9:30-10:00	Registration & Tea/Coffee	8:30-9:00	Registration & Tea/Coffee (WT515c)
10:00	Research Presentations	9:00	Workshop begins (WT301)
11:20	Morning Tea	10:30	Morning Tea (WT515c)
11:40	Industry Presentations	10:50	Workshop continues (WT301)
13:00	Lunch	12:30	Lunch (WT515c)
14:30	Facilitated Networking Session	13:30	Workshop continues (WT301)
16:00 – 17:00	Drinks	14:30	Afternoon Tea (WT515c)
		14:50 - 16:00	Workshop continues (WT301)

CONFERENCE PROGRAMME

The schedule of talks is available on the conference website:

<http://orsnz.org.nz/conf50/programme/>

CONFERENCE APP

The conference programme is also available through an app called Guidebook. The conference app will be available for download from Saturday 26th November 2016.

1. Download the app: <https://guidebook.com/getit/>
2. Download the NZSA+ORSNZ Conference Guide by either:
 - a. Opening the following link on your device:
<https://guidebook.com/g/nzsaorsnz2016/>
 - b. Using the QR Code
3. Enter the passphrase: nzsaorsnz16



We have a limited number of downloads available, so please download to at most **one device**.

ABSTRACT BOOKLET

The abstract booklet is available on the conference website:

<http://orsnz.org.nz/conf50/programme/>

INSTRUCTIONS FOR PRESENTERS

Each oral session is scheduled for 20 minutes. Presentations are to be 15 minutes long, allowing for 5 minutes of question and answer time. Presentations should be provided in power-point or PDF format.

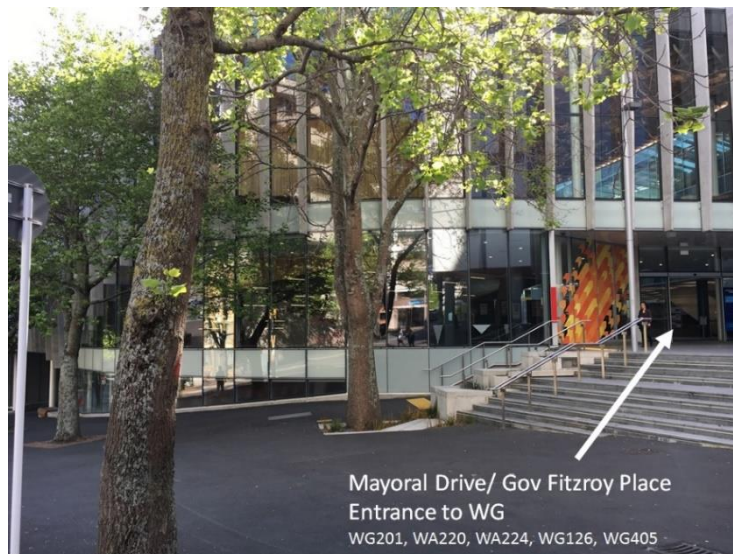
There will be up to four concurrent streams across the conference so to ensure that the sessions run to time, it is important that talks are loaded onto the PC in the presentation room **in advance**. Please check the conference programme (available on the conference website <http://orsnz.org.nz/conf50/programme/>) for the day, time and room of your presentation. Please ensure you bring your presentation on a flash-drive and copy it to the PC in the relevant room before your scheduled session begins. The rooms will be open during the following times: between 8:30am-9:00am, at morning tea, lunch, and afternoon tea. Conference volunteers (in AUT branded t-shirts) will be available to help you load your presentation into the correct folder on the computer.

The conference volunteers will be on hand during your talk to assist you if you experience any technical difficulties. They will also be responsible for timing your talk, and will hold a '5 minute' and '1 minute' sign to indicate the amount of time remaining for your 15-minute presentation.

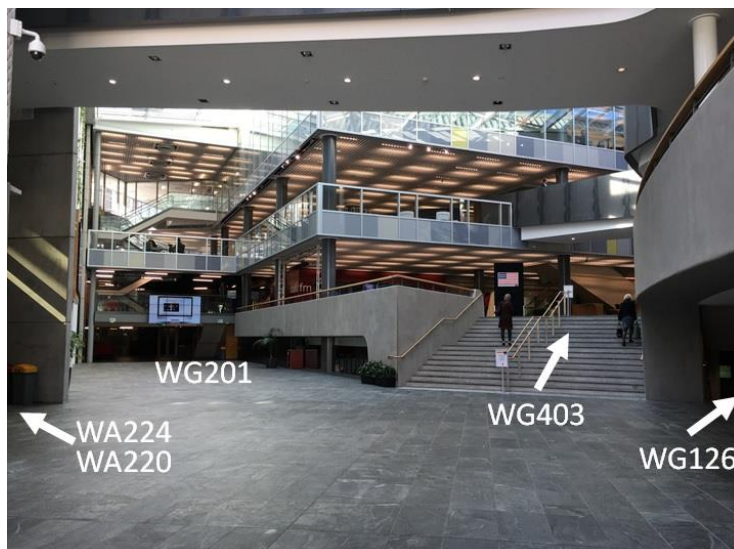
If you are listed as the last speaker in a session you will act as the session chair. You will be tasked with introducing each speaker (their name, affiliation and title of their presentation), moderating the question and answer time, and ensuring that speakers stay to time.

CONFERENCE VENUE

EXTERNAL VIEW

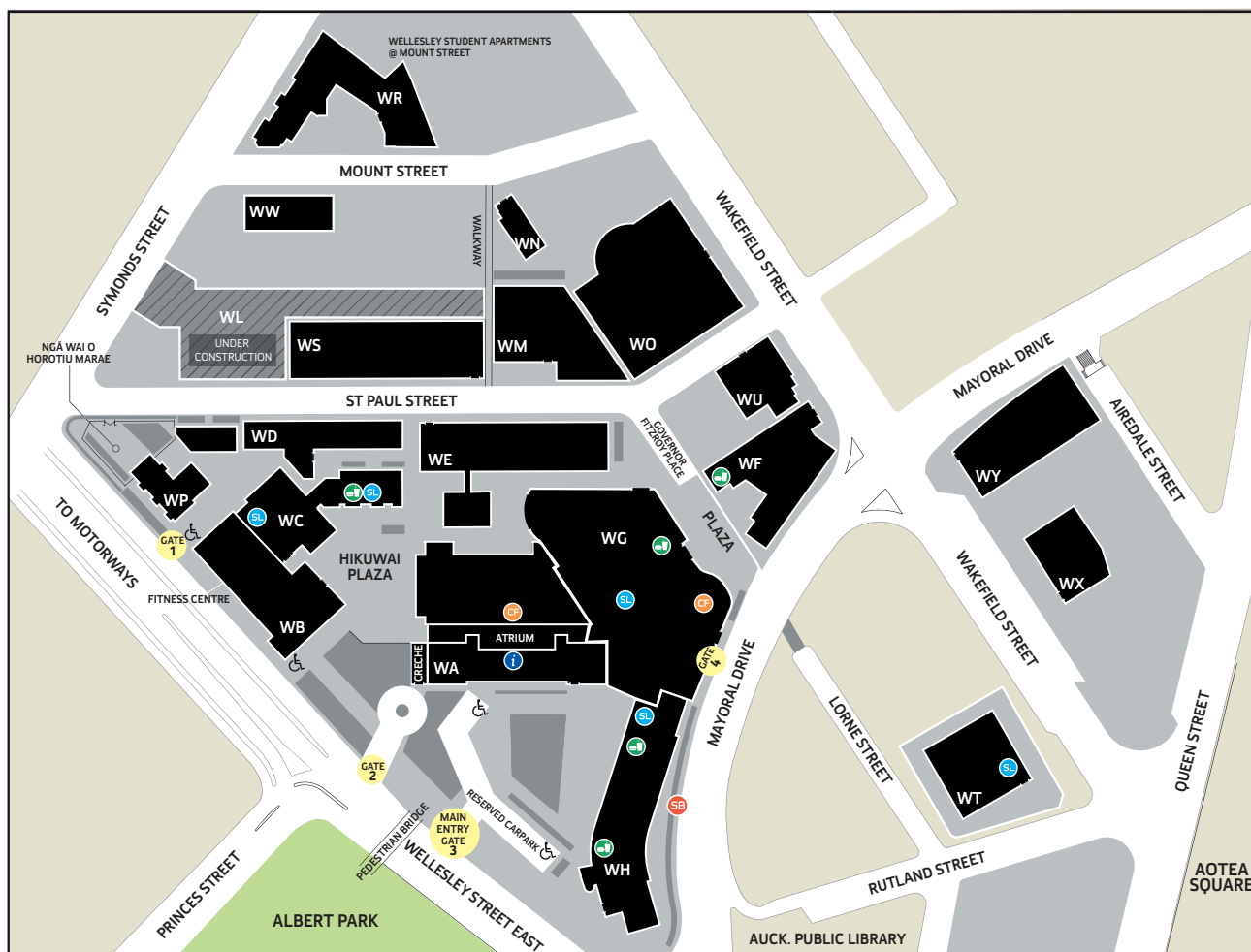


INTERNAL VIEW



AUT CITY CAMPUS

55 Wellesley Street East, Auckland 1010



SCHOOLS

Applied Sciences – Level 5, WS building

Art & Design – Level 3, WE building

Business – Level 1, WF building

Communication Studies – Level 12, WG building

Engineering, Computer & Mathematical Sciences – Level 1, WT building (reception in Level 3, WS building)

Hospitality & Tourism – Level 3, WH building

Language & Culture – Level 8, WT building

Law – Level 6, WY building

Social Sciences – Level 14, WT building

Te Ara Poutama – Level 3, WB building

STUDENT HUB

Level 2, WA building

Phone: 0800 AUT UNI (0800 288 864)

Web: www.aut.ac.nz

SERVICES AND FACILITIES

Student Hub – Level 2, WA building

Learning Lab – Level 3, WA building

Library – Level 4, WA building

Early Childhood Centre – Level 2, WA building via Gate 2

AUT International Centre – Ground Floor, WY building

AuSM – Level 2, WC building

Safety & Security – Corner St Paul & Wakefield St, WO building

Health, Counselling & Wellbeing – WB219, Level 2, WB building







Printsprint customer service branch – Level 3, WA building

University Bookshop – WC122, WC building

JOIN A CAMPUS TOUR

Wednesdays and Fridays at 2pm

Student Hub

-  Student Hub
-  Student lounge
-  Cafés
-  Conference facility
-  Intercampus shuttle bus stop
-  Mobility parks

INTERNET ACCESS

There is free wifi for all conference delegates.

Network name: NZSAORSNZ

Password: nzsaornz16

It is also possible to use “Eduroam” and login using your login at your home university, e.g., username@auckland.ac.nz (note this is your username not email address).

TOILET FACILITIES

Toilets are located on level 2 of both the WA and WG buildings.

TRANSPORT AND PARKING

There are a variety of ways to commute to the city campus: Here are details regarding [transport options](#) from AUT using local and campus buses, trains, ferries, walking/cycling and driving and parking.

Many buses from across Auckland stop directly outside the main AUT entrance on Mayoral Drive or on Symonds Street. The [link buses](#) provide regular transportation around the city centre. The red City Link runs every 7 to 10 minutes and the green Inner Link runs every 10-15 minutes. The [AUT Shuttle service](#) can bring you from North or South campus to the City Campus.

Further details about local transportation, including route maps are available on the [Auckland Transport website](#).

[Parking is available in the CBD](#), which range from 5-20 mins walk to campus. There is also [parking close to University of Auckland](#) which you may find useful.

PRIZES

Monday and Tuesday will feature student presentations and prizes for NZSA and ORSNZ, which will be awarded during the conference dinner on Tuesday evening. We also have two \$50 JB Hi-Fi vouchers to give away for the best tweet and Facebook post during the conference.

Orbit Systems ORSNZ Young Practitioners' Prize (YPP)

OR practitioners and students who are within 5 years of graduation on the first day of the conference (27 November) are invited to compete for \$1000 of prizes in the ORSNZ Young Practitioners' Prize competition. When registering for the conference, competitors should request that their paper be entered for the YPP prize, and when submitting their abstract, competitors should indicate YPP in the keyword field. Refer to the [guidelines](#) for the preparation OR, Analytics and Management Science papers. Entrants must abide by the [YPP Prize rules](#) which include submitting a completed YPP coversheet at the conference. The 2016 YPP prize is proudly sponsored by [Orbit Systems](#).



Harmonic Analytics NZSA Best Student Presentation

The NZSA encourages presentations from students at its annual conference, and as an enticement, prizes are awarded for the best student presentation. All statistics student delegates that present are automatically entered into the competition. The 2016 NZSA Best Student Presentation prize is proudly sponsored by [Harmonic Analytics](#).



SPONSORS

We extend our gratitude to all sponsors of this year's conference.

