

Frontiers in Neurodevelopmental Disorders (FiND)

ISN Satellite Meeting 2015

Meeting Report

Compiled by Dr Elisa Hill-Yardin and Ms Jackie Dalrymple on behalf of the FiND committee (Prof Valsamma Eapen, Prof Charles Claudianos, Dr Irina Voineagu, Prof Anthony Hannan and Dr Elisa Hill-Yardin).

Wednesday 4th November, 2015

1/ Meeting details at a glance

Frontiers in Neurodevelopmental Disorders (FiND) ISN Satellite Meeting 2015

Date: Friday, August 21, 2015 from 9:00 AM to 5:30 PM (AEST)

Location: UNSW CBD Campus, 1 O'Connell St, Sydney NSW 2000

Organising Committee: Elisa Hill-Yardin, Valsamma Eapen, Anthony Hannan, Irina Voineagu, Charles Claudianos

2/ Registration and registration fees

Based on the needs of families a significant fundraising effort was made to ensure that registrations were free with a light lunch included. This approach enables families to pay carers while they attend without additional financial encroachments. Furthermore, this improves the accessibility of the meeting for students from interstate whose research is relevant to the field.

3/ Program

The program included oral and poster presentations by leading researchers and clinicians in the field as well as short and punchy talks by early career researchers in the 'datablitz' session.

The speakers programme consisted of 5 sessions: 1) Neurodevelopmental disorders: Bench to Bedside 2) Genetics 3) Early Career Researchers Datablitz 4) Cognitive Mechanisms and 5) Animal Models. 11 poster presentations were submitted (detailed on page 4).

Prof Valsamma Eapen opened the day with a detailed overview of diagnosis of autism in the clinic and the many overlaps she observes with Tourette Syndrome. Professor Eapen is currently Chair of the Infant, Child and Adolescent Psychiatry at the University of New South Wales (UNSW) Australia and Head of the Academic Unit of Child Psychiatry, South West Sydney (AUCS) and her clinical insight is essential for this meeting.

During the day we heard about the importance of translating basic research to the clinic in order to improve the quality of life for patients. We also learned about a large number of highly focused genetic studies, including work in the field of epilepsy by Prof Ingrid Scheffer (FINMH and The University of Melbourne), work in animal models and how to study cognition in these models. Please see pages 3 and 4 for further detail of the meeting program.

FiND Program 21st August 2015

9:00-9:10 OPEN		Dr Elisa Hill-Yardin / Prof Thomas Bourgeron	
Session 1:		Neurodevelopmental Disorders: Bench to bedside	
Chairs:	Prof Phillip Mitchell Prof Cyndi Shannon Weickert	UNSW, Sydney, Australia (NeuRA)/UNSW, Sydney, Australia	
9:10 - 9:40	Prof Valsamma Eapen	Neurodevelopmental disorders: lessons from co-morbidities	UNSW, Sydney, Australia
9:40 - 10:10	Prof Kim Cornish	Clinical phenotypes associated with Fragile X	Monash University, Melbourne, Australia
10:10 - 10:40	Prof Thomas Bourgeron	From the genetic architecture to synaptic plasticity in autisms	Pasteur Institute, Paris, France
10:40-11:00 Morning Tea		Poster Session	
Session 2:		Genetics	
Chairs:	Prof John Mattick Dr Amelia Assareh	Garvan Institute, Sydney, Australia UNSW, Sydney, Australia	
11:00 - 11:30	Dr Ryan Yuen	Whole genome sequencing of autism spectrum disorders	Hospital for Sick Children, Toronto, Canada
11:30 - 12:00	Prof Ingrid Scheffer	Genetics at the intersection of autism and the epilepsies	FINMH/University of Melbourne, Australia
12:00 - 12:15	Prof Charles Claudianos	The role of non-coding DNA in autism	Monash University, Melbourne, Australia
12:15 - 12:30	Dr Irina Voineagu	Enhancer RNAs mark noncoding regions enriched for ASD genetic variants	UNSW, Sydney, Australia
Session 3:		Early Career Researchers Datablitz	
Chairs	Dr Jason Howitt Dr Jon Brook	FINMH, Melbourne, Australia Macquarie University, Sydney, Australia	
12:30 - 12:40	Mr Ashwyn Perera	Tracking development in a new model of autism	University of Melbourne, Australia
12:40 - 12:50	Mr Brendan Swan	Exome sequencing of autism in New Zealand	University of Auckland, New Zealand
12:50 - 1:00	Ms Michelle Watts	How do microRNAs affect neuronal function?	Monash University, Melbourne, Australia
1:00 -1:30 Lunch		Poster Session	
Session 4:		Cognitive Mechanisms	
Chairs	A/Prof Phil Ward A/Prof Adam Guastella	UNSW, Sydney, Australia BMRI/University of Sydney, Australia	
1:30 -2:00	Assist Prof Gena Konopka	Autism genomics: linking vocal communication and neuronal function	UTSW, Dallas, USA
2:00 - 2:30	Prof Zoltan Molnar	Subplate and cortical developmental disorders of cognition	Oxford University, UK
2:30 - 2:45	Dr Jess Nithianantharajah	Genes, cognition and touchscreens	FINMH, Melbourne, Australia
2:45 - 3:00	Prof Anthony Hannan	Mediators and modulators: mouse models of neurodevelopmental disorders	FINMH, Melbourne, Australia
3:00 -3:30 Afternoon Tea		Poster Session	
Session 5:		Animal Models	
Chairs	Prof Magaret Morris Dr Cathy Leamey	UNSW, Sydney, Australia University of Sydney, Australia	
3:30 - 4:00	Prof Toru Takami	Modeling Autism	RIKEN Brain Science Institute, Japan
4:00 - 4:15	A/Prof Johanna Montgomery	How gene mutations affect synaptic activity in autism	University of Auckland, New Zealand
4:15 - 4:30	Dr Elisa Hill - Yardin	Mind over fecal matter: neurons in the gut and autism	University of Melbourne, Australia
4:30-4:45 CLOSE		Prof Valsamma Eapen/Dr Irina Voineagu - Poster Prize presentation	

Poster Presentations

1. Impaired fear extinction retention in adolescence: Age at fear learning or age at extinction?

K. D. Baker and R. Richardson.

School of Psychology, UNSW Australia, Sydney, NSW 2052, Australia.

2. Novel behavioural phenotypes in the Neuroligin-3 genetic mouse model of Autism Spectrum Disorder

Burrows, E.L.^a, Eastwood, A.E.^a, May C.a, Grayden, D.B.^{b,c}, McLachlan, N.^d Hannan, A.J.^a

a. Florey Institute of Neuroscience and Mental Health, The University of Melbourne b. NeuroEngineering Lab, Dept. of Electrical & Electronic Engineering, The University of Melbourne, c. Centre for Neural Engineering, The University of Melbourne, d. School of Psychological Sciences, The University of Melbourne

3. Limited daily exposure to high fat diet in young rats alters patterns of social behaviour

Kirsten N. Abbott and Amy C. Reichelt

School of Psychology, UNSW

4. Genome-wide regulation of gene expression by the inner mitochondrial membrane protein-like 2

Akira Gokoolparsadh^a, Jim Fang^a, Monica Nguyen^a, Raymond Clarke^b, Valsamma Eapen^c, Irina Voineagu^a.

a. School of Biotechnology and Biomolecular Sciences, University of New South Wales, Sydney, Australia. b. University of Western Sydney. c. School of Psychiatry, University of New South Wales, Sydney, Australia

5. Comprehensive approach with an analytical battery to understand pathophysiological role of RBFOX1/A2BP1, a "hub" gene in the ASD gene transcriptome network

Nanako Hamada, Hidenori Ito, Hidenori Tabata, Koh-ichi Nagata. Department of Molecular Neurobiology, Institute for Developmental Research, Aichi Human Service Center, 713-8 Kamiya, Kasugai, Aichi 480-0392, Japan

6. Characterising Neuroligin expression in the Superior Mesenteric Ganglion in a mouse model of Autism

Laura Tatnell, Joel C Bornstein, Elisa L Hill-Yardin Department of Physiology, The University of Melbourne, Parkville 3010, Australia.

7. UNIQUE Autism: Understanding similarities and differences between twins

Jeffrey M Craig, , Felicity Kloppers, Yuk Jing Loke, Katrina Williams MCRI Melbourne, Australia

8. Enteric GABAA receptor dysfunction in the NL3^{R451C} mouse model of ASD

Herath B, Bornstein JC, Hill-Yardin EL, Department of Physiology, University of Melbourne, Vic 3010 Australia

9. Mitochondrial dysfunction in the brain of autistic subjects

Abha Chauhan, Feng Gu and Ved Chauhan, NYS Institute for Basic Research in Developmental Disabilities, Staten Island, New York, USA

10. Exposure to methylmercury induces oxidative stress and affects the behavior of Drosophila melanogaster: Implications in autism

Ved Chauhan and Abha Chauhan New York State Institute for Basic Research in Developmental Disabilities, Staten Island, New York, USA

11. Gene expression changes in human Rett syndrome brain

Paul Lin, Voineagu Lab School of Biotechnology and Biomolecular Sciences, University of New South Wales, Australia

4/ Speakers

We are delighted to have attracted world renowned leaders in the field of neurodevelopmental disorders research from Europe, the United States, Japan and Canada. Our program enabled the audience to enjoy a culturally diverse range of speakers and we are proud to have adhered to best practice guidelines regarding gender equity at The University of Melbourne.

Speakers were as follows: Prof Thomas Bourgeron (Pasteur Institute, France), Prof Charles Claudianos (Monash University, Melbourne Australia), Prof Kim Cornish (Monash University, Melbourne Australia), Prof Valsamma Eapen (UNSW, Sydney, Australia), Prof Anthony Hannan (Florey Institute of Neurosciences and Mental Health, Melbourne Australia), Dr Elisa Hill-Yardin (The University of Melbourne, Australia), Dr Gena Konopka (University of Texas Southwestern, USA), Prof Zoltan Molnar (University of Oxford, UK), A/Prof Johanna Montgomery (Auckland, NZ), Dr Jess Nithianantharajah (Florey Institute of Neurosciences and Mental Health, Melbourne Australia), Mr Ashwyn Perera (Florey Institute of Neurosciences and Mental Health, Melbourne Australia), Prof Ingrid Scheffer (Florey Institute of Neurosciences and Mental Health & The University of Melbourne, Australia). Mr Brendan Swan University of Auckland, NZ, Prof Toru Takumi (RIKEN institute, Japan), Dr Irina Voineagu (UNSW, Sydney, Australia), Ms Michelle Watts (Monash University, Melbourne Australia), Dr Ryan Yuen (Hospital for Sick Kids, Ontario, Canada).

5/ Plenary Speakers

Key speakers at the FiND meeting are leaders in their research fields and each delivered a riveting presentation detailing their work in an accessible way on the day of the meeting. These key speakers were: Prof Thomas Bourgeron (Pasteur Institute, France), Prof Kim Cornish (Monash University, Melbourne Australia), Prof Valsamma Eapen (UNSW, Sydney, Australia), Dr Gena Konopka (University of Texas Southwestern, USA), Prof Zoltan Molnar (University of Oxford, UK), Prof Ingrid Scheffer (Florey Institute of Neurosciences and Mental Health & The University of Melbourne, Australia), Prof Toru Takumi (RIKEN institute, Japan), Dr Ryan Yuen (Hospital for Sick Kids, Ontario, Canada).

5/ Meeting Highlights

A highlight of the meeting was Prof Zoltan Molnar's presentation showing that in order to understand correct positioning of neurons in the brain, we must learn about the scaffolding they require, in this case the formation of the 'subplate' underpinning the cerebral cortex during development. What made Prof Molnar's presentation memorable was his excellent use of imagery – for example the building of a bridge begins with the scaffolding.

6/ Participants

The meeting was attended by 116 delegates. These included researchers, clinicians, families with members affected by neurodevelopmental disorders and educators.

7/ Material distribution

Delegates were provided with hard copies of the FiND Program and an Outline of Poster presentations on the day of the meeting. In addition, a brief feedback questionnaire was included.

Webpage: <http://www.findautism.org/>

Facebook Page: <https://www.facebook.com/Frontiers-in-Neurodevelopmental-Disorders-1482223938701625/>

Twitter: #FiNDAutism

8/ Social events

An information Pre-Conference Dinner was held for speakers and chairs at The Establishment Garden at 252 George St, Sydney from 4pm (see photos at end of this report). This provided an excellent opportunity for speakers to get together in an informal way prior to the formal presentations on the following day. The organisers discovered that while The Garden is a tranquil space on a Saturday morning, Thursday nights reflect the bustling and glamour of Sydney's nightlife, complete with blaring club soundtracks! After the meal, smaller groups sauntered off to small cafes to hold a conversation about research in different parts of the world and the next steps needed to improve treatments for patients.

9/ Travel awards

Poster award of \$500 to Dr. Emma Burrows (Florey Institute of Neuroscience and Mental Health) sponsored by BioAutism Ltd.

10/ Travel subsidies for Invited Speakers / Plenary Speakers

Travel Subsidies were provided to:

- Prof. Thomas Bourgeron (Paris, France)
- Dr. Ryan Yuen (Ontario, Canada)
- Dr Gena Konopka (Dallas, USA)
- Prof. Zoltan Molnar (Oxford, UK)
- Prof. Toru Takami (RIKEN, Japan)
- A/Prof. Johanna Montgomery (Auckland, NZ)
- Prof. Ingrid Scheffer (Melbourne, Australia)

11/ Sponsorship

Generous sponsorship is gratefully acknowledged from ISN, Trade & Investment (NSW Government), The University of Melbourne, University of New South Wales, Monash University, The Florey Institute of Neuroscience and Mental Health, Giant Steps and BioAutism Ltd.

Excellent administrative Support was provided by: Ms Glenda Bow (UNSW), Ms Jackie Dalrymple (The University of Melbourne), Nivetha Gunasekaran (Monash University), Ms Mathusi Swaminathan (The University of Melbourne) and Ms Anita Leembruggen (The University of Melbourne). Registration was managed by: Amanda Mazzoni; Lidan Zheng; Feroza Khan (UNSW) and IT assistance by Rachel Grove (UNSW).

12/ Budget

Funds were managed across two university campuses in order to efficiently pay accounts regarding the venue and catering in Sydney (managed by Prof Valsa Eapen) and the predominant reimbursement of speakers' costs occurring from Melbourne (managed by Dr Elisa Hill-Yardin). The \$7000 USD sponsorship from ISN (anticipated to total \$7,728 AUD) was used to reimburse attendance costs for internationally renowned speakers. Other expenses were funded from other sources. After payment of invoices and reimbursements, there is no anticipated surplus (\$0 in the Sydney account and \$0 in the Melbourne account).

ISN funds

In summary, ISN funds were used to reimburse a proportion of the travel costs for four of our internationally renowned key speakers (Prof Thomas Bourgeron from France, Dr Gena Konopka from the USA, Prof Toru Takumi from Sydney and Prof Ingrid Scheffer from Australia).

Budget summary: the predicted surplus after speaker reimbursement and final incoming payments (including ISN) is \$0 AUD.

Breakdown of expenditure of ISN funds

Item	Details	Amount (AUD)	Total
Key speaker Expenses			
Travel (flights)	Prof Thomas Bourgeron (Paris-Sydney)	\$2,650.18	
	Dr Gena Konopka (Dallas-Sydney)	\$3,307.63	
	Prof Toru Takumi (Tokyo-Sydney) (\$1405 of \$1665)	\$1,405.00	
			\$7,362.81
Other (taxi, admin etc)	Prof Ingrid Scheffer (flight - \$365)	\$365.00	
			\$365.00
Income	Sponsorship from ANS/ISN (80% of \$7,000 USD)	\$5,797	
Total Income to date		\$5,797	
Remaining sponsorship from ANS/ISN on receipt of FIND report (20% of \$7,000 USD)		\$1,931	
Amount Expenditure		\$7,728	
Total Income (inc anticipated)		\$7,728	
Total remaining		\$0	

13/ List of participants

We recorded 109 registrations via the Eventbrite page set up for the meeting. Please find below the most recent list prior to the meeting detailing attendees registration number, date of registration and first and last name. Please note that some delegates ordered more than one ticket under their name, bringing the total number of attendees to 116 at the meeting.

Order #	Order Date	First Name	Last Name
446650087	2015-08-13	Stef	Penkala
446645013	2015-08-13	Amelia	Assareh
446642331	2015-08-13	victor	king
446361271	2015-08-12	sy	chan
446323003	2015-08-12	Claudio	Toma
446307520	2015-08-12	Helen	Appleton
446307520	2015-08-12	Rachael	Bowen
446307520	2015-08-12	Andrew	Frakes
446259453	2015-08-12	Con	Kalantzis
446057801	2015-08-11	Kris	Vacy
446036513	2015-08-11	Catherine	Leamey
445998598	2015-08-11	Elizabeth	Maher
445716232	2015-08-10	Louisa	Bruce
445630501	2015-08-09	Angie	Kroehnert
445630501	2015-08-09	Robert	Kroehnert
445623515	2015-08-09	Tiffany	Sia
445612686	2015-08-09	Florence	Levy
445489089	2015-08-08	Raymond	Clarke
445119033	2015-08-07	Laura	Nicholls
444851593	2015-08-06	Kelsie	Boulton
444524930	2015-08-05	Jacqueline	Rushby
444523101	2015-08-05	Marion	Aitchison
444520849	2015-08-05	WEI	HE
444484041	2015-08-05	Karen	Liu
444290439	2015-08-04	Tatiana	Faundez
444264977	2015-08-04	Miriyana	Budak

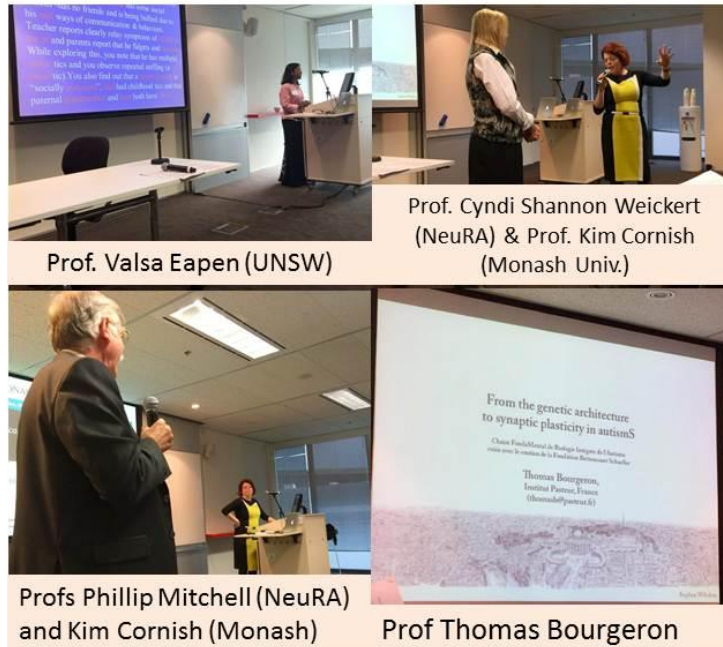
444264300	2015-08-04	Jim	Fang
443449421	2015-07-31	Laura	Ospina-Pinillos
443424570	2015-07-31	Tanya	Duckworth
443164922	2015-07-30	Chiara	Pawela
443160500	2015-07-30	Andrea	Lammel
443158241	2015-07-30	Caitlin	Dawes
443108566	2015-07-30	Marianne	Doczi
442823080	2015-07-29	hong	nguyen
442626059	2015-07-28	Margaret	Morris
442581650	2015-07-28	Feroza	Khan
442580028	2015-07-28	Lidan	Zheng
442579182	2015-07-28	Amanda	Mazzoni
442368025	2015-07-27	Christin	Weissleder
442366414	2015-07-27	Rong Quan	Chew
442361688	2015-07-27	Emily	Trimmer
442344505	2015-07-27	Bomal	Herath
441559851	2015-07-24	Christine	Song
441547702	2015-07-23	Elek	Molnar
440967655	2015-07-21	Emma	Burrows
440929547	2015-07-21	Robert	Klupacs
439566871	2015-07-15	Florence	Levy
439566151	2015-07-15	Christopher	Sufani
439538515	2015-07-15	Marilena	DeMayo
439538012	2015-07-15	James	Stevenson
439507283	2015-07-15	Carolyn	Stewart
439219679	2015-07-14	Kitty-Rose	Foley
439218466	2015-07-14	Rachel	Grove
439168280	2015-07-14	Anne	Masi

438940240	2015-07-13	Wang	Sanmei
438081694	2015-07-09	Kim	Eisler
438051424	2015-07-09	Andre	Hallen
437325172	2015-07-06	Angie	Campillo
437276381	2015-07-06	Adam	Guastella
437230055	2015-07-06	Valsa	Eapen
437084791	2015-07-05	Ryan	Yuen
437037786	2015-07-04	Joanne	Murphy
437017928	2015-07-04	Philip	Mitchell
436848292	2015-07-03	Thomas	Bourgeron
436841760	2015-07-03	Kim	Cornish
436523354	2015-07-02	Koh-ichi	Nagata
435776303	2015-06-29	Amy	Reichelt
435671293	2015-06-28	Brendan	Swan
435658373	2015-06-28	Judy	Hill
435057485	2015-06-25	Kelly	Price
435006221	2015-06-25	Ashwyn	Perera
434954052	2015-06-25	Michelle	Watts
434429392	2015-06-23	Rozanna	Lilley
434417524	2015-06-23	beverley	witherington
433882896	2015-06-20	Teresa	Sakaluk
433606813	2015-06-19	Joel	Bornstein
433293745	2015-06-18	Anthony	Hannan
433280986	2015-06-18	Jayanthi	Maniam
432965521	2015-06-17	Jess	Brain
432350204	2015-06-15	Deb	Gavan
431417882	2015-06-11	Helen	Cai
		Yuk Jing	
431080404	2015-06-10	(Jane)	Loke
429893918	2015-06-05	Ingrid	Scheffer
429161037	2015-06-03	Jason	Howitt
428484156	2015-06-01	Isabella	Jacomb
428481991	2015-06-01	Tertia	Purves-Tyson
427550669	2015-05-28	Kathryn	Baker
427536071	2015-05-28	Paul	Lin
427153993	2015-05-27	Alexander	Eastwood

426892578	2015-05-26	Deborah	Schofield
425219202	2015-05-19	Kate	upton
425166611	2015-05-19	Eleanor	Hughes
425084961	2015-05-19	Jeffrey	Craig
424818464	2015-05-18	Katrina	Williams
423120845	2015-05-12	Mari	Kondo
421892102	2015-05-08	Mireille	Montcouquiol
421891825	2015-05-08	Nathalie	Sans
421745784	2015-05-07	Irina	Voineagu
421388634	2015-05-06	Charles	Claudianos
419284329	2015-04-29	Elisa	Hill-Yardin
419172574	2015-04-29	Abha	Chauhan
419166859	2015-04-29	Ved	Chauhan

14/ Photos

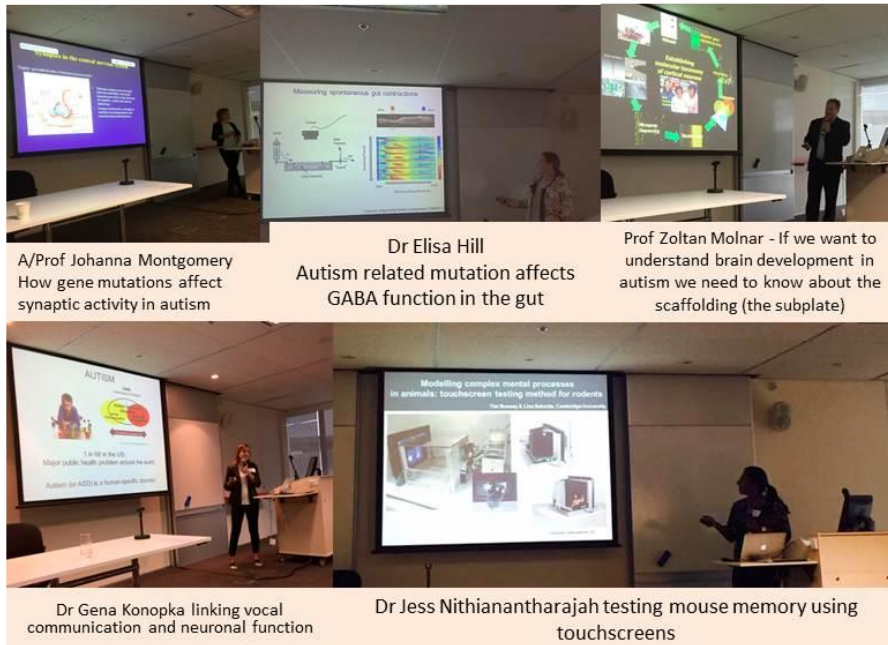
Session 1: Neurodevelopmental Disorders: Bench to Bedside



Session 2: Genetics



Afternoon sessions: Cognitive Mechanisms and Animal Models

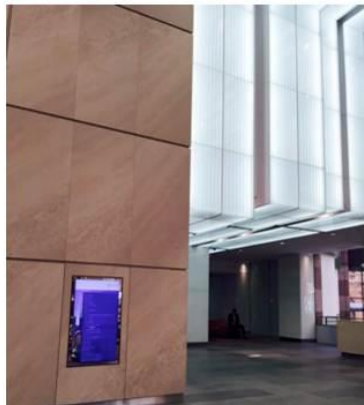


Seeing the best of Sydney





Times up!



The Venue!