

July 2015

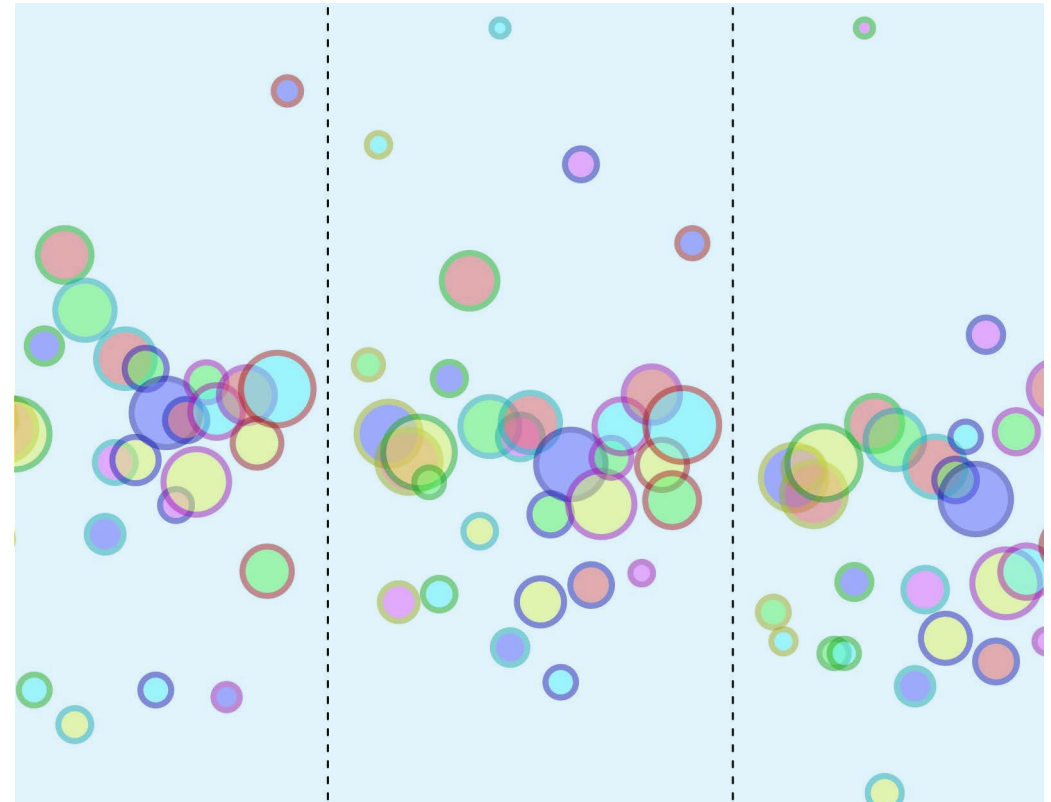


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[www.ans.org.au](http://www.ans.org.au)

# Australasian Neuroscience Society Newsletter



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# Message from the President



**James Vickers**

*President, Australasian  
Neuroscience Society*

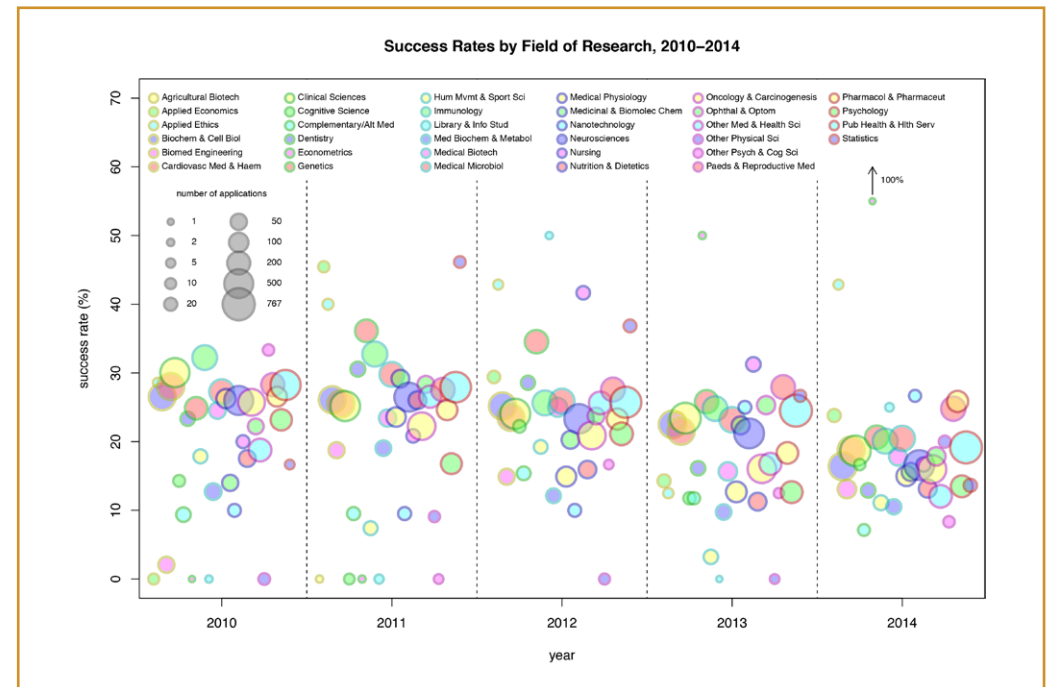
This newsletter will come to members shortly before the ISN/APSN/ANS meeting in Cairns in late August. This meeting will feature two of the core plenary sessions for ANS meetings. The Eccles Lecture will be by Professor Robert Vink on "Increased Intracranial pressure after Acute CNS Injury: a Basic Scientist's Perspective of a Clinical Problem" and the meeting will be rounded off with the Lawrie Austin Lecture to be delivered by Professor Ashley Bush on "Iron in Alzheimer's disease and Parkinson's disease". We encourage all members to attend these plenaries to support your Society. The Lawrie Austin Lecture is a particularly appropriate plenary for this meeting given Lawrie's substantial contribution to building neurochemistry in Australia. ANS will also have a booth at the conference - please drop by to hear the latest on plans for ANS2015 in Hobart, as well as other activities of the ANS.

ANS would like to extend our congratulations to Professor Pankaj Sah for his recent appointment as Director of the Queensland Brain Institute. We would also like to extend our best wishes and thanks to Professor Perry Bartlett, who had the instrumental role in building the QBI into a powerhouse of neuroscience research in Australia. As QBI Director, Perry also provided strong support to ANS-related activities such as the Australian and New Zealand Brain Bee competition as well as the Australian Course in Advanced Neuroscience. We look forward to Perry's continued contributions to neuroscience research in his post-Directorial academic life.

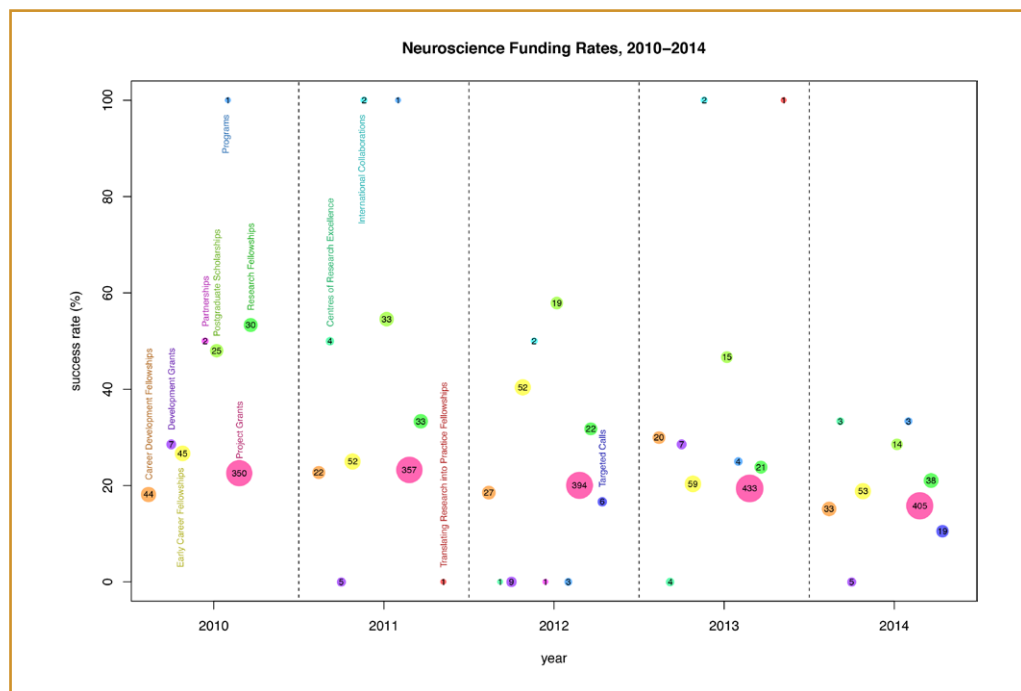
We have been requesting further information on NHMRC funding for neuroscience research. Mrs Helen Douglas and Dr Jim Stankovich from the University of Tasmania have kindly applied some further analysis of the data, including the graphical interfaces shown below. Please keep in mind that this relates to research coded primarily to the Neuroscience 'Field-of-Research' (FOR), and there would be neuroscience-related research within some other FORs. The first figure shows success rates by FOR for 2010-2014. In the graph, the size of the circle represents the total number of applications received in each research category.

In this period, the overall success rate for all FORs is approximately 25% whereas it is 23% for the neuroscience FOR. Broadly though, the Neuroscience FOR is somewhat in the 'middle of the pack' relative to the scale of applications, with notably lower funding success rates for Neuroscience in 2012 and 2014, as summarized in the table below.

	2010	2011	2012	2013	2014	Total
Neurosciences	26%	27%	23%	21%	17%	23%
All Fields of Research	27%	28%	27%	22%	23%	25%



(Message from the President continued)



The second graph shows Neuroscience FOR funding rates across the major NHMRC grant opportunities. In the graph, the size of the circle and number represents the total number of applications received by the NHMRC for each research category. There have been an increasing number of applications to the NHMRC for FOR Neuroscience over the five-year period, however the associated funding success rate has decreased over the same period of time. This is summarised in the table below.

	2010	2011	2012	2013	2014
Total Applications	504	510	536	566	573
Funding Success	26%	26.5%	23.3%	21.2%	16.6%

It may be difficult to make a lot of sense for granting opportunities with low numbers of applications. However, for research opportunities such as Development Grants, the success rate has been very low over recent years. Research Fellowship success rates have also dropped sharply over this period.

...an initial expansion of our outreach activities will involve new social media sites for ANS (Facebook - <https://www.facebook.com/AusNeuroSoc> and LinkedIn) which will dovetail with our recently rejuvenated web presence.

We need to reflect on where Neuroscience has not done as well as other FORs in terms of success rates relative to application numbers and category type. There is probably little to be gained from arguing that neuroscience deserves a greater proportion of the funding pool, especially in the light of an NHMRC budget that is not likely to increase over the next few years. The broader proposition should be about the value of increased funding for neuroscience (and perhaps medical research in general) in light of the changing profile of illness and wellbeing in our community, and the impact of nervous system conditions from health and economic perspectives. In addition, there could be arguments developed for additional strategic funding from non-NHMRC sources, perhaps in the area of advanced neurotechnologies, education and translational research. This will require a more extensive coalition that goes beyond the membership. To this end, an initial expansion of our outreach activities will involve new social media sites for ANS (Facebook - <https://www.facebook.com/AusNeuroSoc> and LinkedIn) which will dovetail with our recently rejuvenated web presence. Further initiatives will be announced shortly, and we also look forward to the feedback of the membership on areas in which we can show advocacy on behalf of neuroscience in our region.

**Finally, it is our pleasure to announce new appointments to the Council of the ANS, all elected unopposed. The President-Elect is Linda Richards, Secretary is Kay Double and NSW representative is Thomas Fath. Many thanks to these members for agreeing to serve our Society in these important roles. Our deep thanks also to John Rostas who completes his term as Past-President, as well as to Joe Lynch for his service as Secretary to the Society. The official transition in roles will be at the AGM in Cairns.**

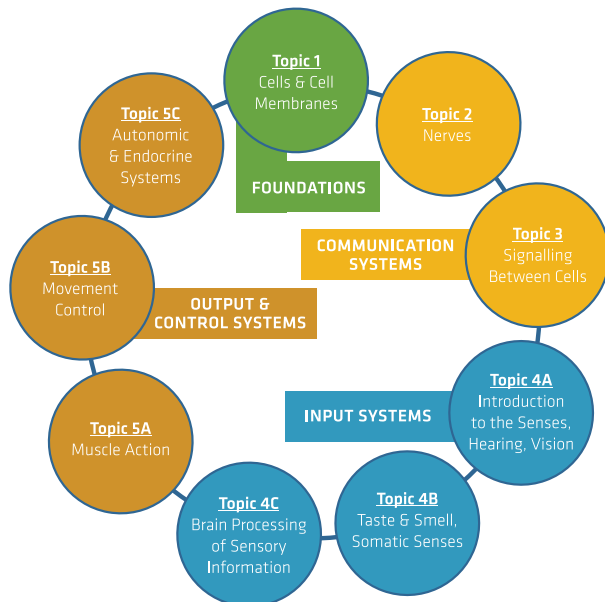
# A National Neuroscience Teaching Toolbox

Is anyone teaching neuroscience in Australian/NZ universities interested in developing a good shared neuroscience toolbox for teaching? The intent is not prescribe anyone's curriculum - instead, individual universities and academics can use the content as they see fit! The intent is to create good quality tools to support the neuroscience curriculum in Australasia.

## Background

At Monash University we have been developing a series of eBooks (about 30 now) for teaching introductory neuroscience in a Year 2 Semester 1 unit which is introductory to two other units in 2nd semester. The content of this introductory unit is summarised in the figure here:

## The sequence of study topics in PHY 2011



The eBooks contain text, images and videos, and assessments in an integrated format. The eBooks can be either read via a browser or downloaded as an ePub (to be read using an ePub reader like the iBooks on the iPad, or Gitden Reader for Android devices).

## The authoring tool for eBooks

The authoring format developed here at Monash to create the eBooks is very easy for anyone to use - I generate all my own eBooks (and that says something with my computing skills) and it can be done even while watching the Eurovision Song Contest or The Vikings.

The authoring format can be a highly collaborative process and others can contribute to existing materials too.

It's a model I have tested very successfully, where modules I created for a BSc course are derived and then some clinical content added to make them specialised (without affecting the original), to offer to MBBS students etc.

## Collaborative development

Given its ease of use we would like to use this tool for collaborative development of curricula. The Monash IT developers of this tool have also developed a non-Monash version with the same ease of functionality, but with none of the copyright issues of Monash ownership.

This would allow us to develop, across Australia, a terrific common resource for teaching neuroscience whereby we create modules in our areas of teaching and/or research expertise, and share these modules.

## Extensions

Finally, I have also used this tool to develop a range of research training modules, which are used for Honours and Masters training in the biomedical sciences. They cover topics ranging from ethics, research study planning and design, statistical analyses, qualitative study designs, scientific writing, improved productivity and employability outcomes.

If anyone is interested in seeing these modules, please let me know.

## Accessing the eBooks to view them:

URL: <https://www.alexandriarepository.org/module/neuroscience-share-content/>

Username: ext\_aust\_neuro

Password: Contact me for the password (ramesh.rajana@monash.edu)

Remember: uncheck "Monash Authcate"

Ramesh Rajan

# Australian Course in Advanced Neuroscience (ACAN) 2015

Last year we celebrated the 10th ACAN; this year we celebrated the 10th anniversary of ACAN – which goes to show that it’s always possible to find an excuse for a celebration!

## John Bekkers

*Director, ACAN*

Last year we celebrated the 10th ACAN; this year we celebrated the 10th anniversary of ACAN – which goes to show that it’s always possible to find an excuse for a celebration!

As has happened every year since 2005, twelve students, more than twenty-five faculty and support staff, and over a million dollars worth of lab equipment descended upon the normally sleepy township of Dunwich, North Stradbroke Island, for 3 weeks in April/May.

This year’s students were among the most diverse we have ever had at ACAN. They came from nearly every State in Australia, plus the North and South islands of New Zealand, and their scientific backgrounds ranged from neuroimmunology to ophthalmology to behavioural pharmacology. What connected them was their intelligence, their passion for neuroscience, and their desire to learn something new.

*See below for the impressions of two of our students.*

Our faculty were also a diverse and interesting bunch, flying in from Germany, the US, Singapore, Canada and New Zealand, as well as many parts of

Australia. Our special guest this year was Charles F. (“Chuck”) Stevens, who came from the Salk Institute to give a ‘Hot Topic’ lecture on his new theory of information processing in the olfactory system. Chuck is a legendary figure in neuroscience, famous for his brilliance as well as his charming ability to deliver a lecture while drawing his slides by hand. Running ACAN has been a part of my life for a decade now, and it is with some sadness that I announce that I’ve decided to retire as Director of the course. I am proud of what we have achieved with ACAN. However, I feel that the time is ripe for fresh leadership and ideas. I shall continue my involvement as an advisor and, hopefully, as an occasional member of the course faculty.

After ten years there are many people to thank, but I shall restrict myself just a few. First, Alan Finkel, whose generosity and vision made the course possible. Second, Kevin Townsend, Manager of the Moreton Bay Research Station, who has always made us feel so welcome. And finally Garry Rodda, Lab Manager at the course, whose dedication and good cheer, even late at night, have been truly extraordinary.

I may be bowing out, but ACAN lives on! Next year’s course will run from Sunday 10 April to Saturday 30 April 2016, with the call for applications going out in November 2015. If you are a young scientist wanting to learn neurophysiology from world experts, I strongly encourage you to apply.

## Student reports on their ACAN experience:

Tucked away in the small township of Dunwich on North Stradbroke Island is the Moreton Bay Research Station, the place where twelve eager young neuroscientists gathered to learn the ways of patch-clamp electrophysiology. It was here that for three fantastic weeks we ate, slept, and breathed electrophysiology under the guidance of some of the world’s experts.

I had been told that ACAN would be intense. That I would fill my brain with mind-boggling theory by day and spend long nights in the lab patching, only to do it all over again the next day. These stories were all true! Mornings were spent in lectures covering everything from biophysics and structure and function of ion channels, to synaptic transmission and methods of fluorescence imaging. Teaching us were over twenty national and international researchers, many of whom stayed for several days, providing us with countless opportunities to ask those silly and not so silly questions.

After many a helping of a delicious lunch, six shiny patch-clamp rigs awaited us in the lab. For some of us, ACAN was the first introduction to electrophysiology or to the patch-clamp technique. Yet by the end of the first week the team of fantastic tutors had converted us all into competent patch-clampers, ready to tackle whatever challenge the next weeks would bring. The fast-paced course took us from cutting slices and getting that all important giga-ohm seal, to writing protocols, stimulating cells, even multiple electrode recordings!

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*(Australian Course in Advanced Neuroscience  
[ACAN] 2015 ...continued)*

I still marvel at the breadth of topics and skills we were able to cover in just three short weeks. The lab was always buzzing with excitement as someone recorded from a really great cell, or managed to patch on to one of those slippery dendrites. Our time in the lab quickly slipped away most evenings and many times before we knew it, it was almost tomorrow!

Not every second was taken up with science however. During the week many a coffee break was had overlooking the picturesque views of the sea, and walks were taken along the beach just a few short metres from the station. On Sundays, our go-to man Garry Rodda put on his tour-guide hat and took us on trips in the 'troopy', which meant for very successful wildlife spotting. Kangaroos, koalas and curlews to name a few!

ACAN was without a doubt the single most important experience of my PhD. I had the opportunity to gain skills in the gold-standard techniques of electrophysiology and to interact with many world-renowned neuroscientists. I made connections with eleven talented young scientists, whom I no doubt I will be in contact with throughout our careers. I left ACAN with a newfound inspiration for neuroscience, and would once more like to thank John Bekkers and his team for making ACAN such a wonderful experience for us all.



## Caption

**Sitting (L-R):** Van Tran, Laura Boddington, Alex Tang, Nehan Munasinghe.

**Standing (L-R):** David Carter, Kelly Smith, Sam Mills, Anurag Singh, 'JJ' Liu, Saba Charaei, Angela Wu, Carlie Cullen.

North Stradbroke Island offers visitors picturesque beaches and a diverse range of wildlife. However, 3 weeks a year, students from around Australia and New Zealand head to "Straddie" to learn the ins and outs of cellular neurophysiology at the Australian Course in Advanced Neuroscience, better known as ACAN.

Whilst it may seem strange to hold ACAN at a remote research station, it provided the whole scientific package, with technical lectures in the morning followed by long days of experiments and data analysis, often extending to the early hours of the morning. I think ACAN is best described as three weeks of intensive learning and hard work, all done on a few hours of sleep. At the risk of suggesting that I lead a boring life, I will say that it was one of the best things I have ever experienced, both professionally and personally.

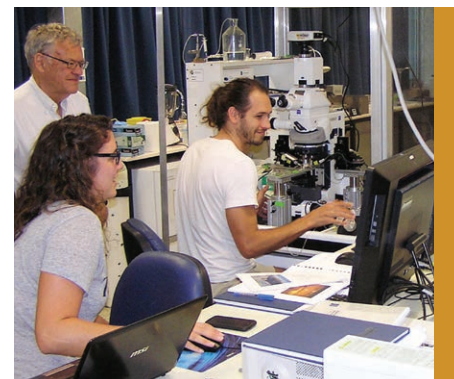
This year ACAN brought together 12 students from a wide range of neuroscience disciplines as well as a wide range of patching experience. Our cohort included students who had never patched before, to students who had patched throughout their PhDs. Despite the range of experience, we were assured on day one that we would all become more than competent patch clampers. Sure enough, by the end of the three weeks we were talking the talk, analysing data and even designing and conducting our own experiments. And if our own motivation wasn't enough, opportunities to take home the "Chuck Stevens paired cell recording" or the "Greg Stuart dendritic patching" awards, provided us with that extra competitive drive to get us through

**Laura  
Boddington**

*PhD student, University of Otago*

## Caption

Chuck Stevens in the lab with  
Kelly Smith and David Carter.



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(Australian Course in Advanced Neuroscience  
[ACAN] 2015 ...continued)

our late nights in the lab. Not only did all groups manage to make connected paired cell or dendritic recordings, but a new ACAN record was set for the longest dendrite-soma patch at 238µm!

I have gained a lot from ACAN, but some of the more memorable moments include patching dendrites for the very first time, to more novel occasions such as winning \$5 from Prof. Steve Petrou (still owed...), and learning the neuroscience behind the blue and black/white and gold dress phenomenon.

So for those of you who are considering attending ACAN in the future, I highly recommend it. It is more than the occasion to learn advanced techniques, it's also a unique opportunity to escape the daily grind of your own research and hang out with some of the friendliest and most distinguished electrophysiologists from around the world.

## Alex Tang

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PhD Student, The University  
of Western Australia

# See You Soon in Cairns

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The 2015 ISN/APSN/ANS Conference in Cairns (August 23-27, 2015) is almost here. I look forward to seeing you all at this major international conference in a stunning location. As an example of the exciting and varied program at this conference, here is a list of the plenary and young investigator lectures (two further Young Investigator Lectures are awaiting confirmation).

**Plenary lecture 1:** Professor Yoshinori Ohsumi (Tokyo, Japan) *Molecular Dissection of Autophagy - Intracellular Recycling System*

**Plenary lecture 2:** Professor Franz Ulrich Hartl (Munich, Germany) *Molecular Chaperones: Guardians of the Proteome*

**Plenary lecture 3:** Professor Ellen Closs (Mainz, Germany) *Why Transporters of Simple Cationic Amino Acids Matter*

**Plenary lecture 4:** Professor Leslie Vosshall (New York, USA) *Understanding and Modulating Mosquito Attraction to Humans*

**Plenary lecture 5 / Lawrie Austin Lecture:**

Professor Ashley Bush (Melbourne, Australia) *Iron in Alzheimer's Disease and Parkinson's Disease*

**Eccles Lecture:** Professor Robert Vink (Adelaide, Australia) *Increased Intracranial Pressure After Acute CNS Injury: a Basic Scientist's Perspective of a Clinical Problem*

**Young Investigator Lecture 1:** Dr Michael Fox (Virginia, USA) *Extracellular Matrix Molecules Induce Inhibitory Synapse Formation*

**Young Investigator Lecture 2:** Dr Jess Nithianantharajah (Melbourne, Australia) *Evolution of Synaptic Genes, Cognition and Disease Susceptibility*

The full details of the exciting and varied program that also includes 37 symposia, 7 workshops and the International Final of the International Brain Bee Challenge can be found at: <http://www.neurochemistry.org/biennial-meeting/isn-2015-biennial-meeting/isn-2015-scientific-information/isn-2015-preliminary-timetable.html>

# The International Brain Bee 2015



In all countries involved, the local competitions are growing and attracting young people to careers in science as well as promoting public awareness of neuroscience, neurological diseases and mental health in the community

Each year the International Brain Bee (IBB) brings together high school students from across the world who have won their regional Brain Bee National Final. The national finalists have in some cases competed against literally thousands of students to win the opportunity to represent their country in the IBB. In all countries involved, the local competitions are growing and attracting young people to careers in science as well as promoting public awareness of neuroscience, neurological diseases and mental health in the community.

The IBB is always held at an international neuroscience meeting and is an important international public outreach program. To date, the IBB has never been hosted in the Asia-Pacific region and we are very excited to have been given the opportunity to host the IBB in Cairns

in conjunction with the joint meeting of the International Society for Neurochemistry, Asian Pacific Society for Neurochemistry and Australasian Neuroscience Society. Previous locations of the IBB include the USA, Canada, Italy, South Africa and Austria. There are 23 countries participating in the 2015 IBB, the highest number of finalists ever at an IBB. The countries represented are Australia, Canada, China, Germany, Grenada, India, Iran, Israel, Italy, Japan, Korea, (Macau), Malaysia, Nepal, New Zealand, Nigeria, Poland, Romania, Singapore, South Africa, Ukraine\*, United Arab Emirates, USA. (\*To be confirmed). These finalists are motivated and enthusiastic students and many of them are considering pursuing tertiary studies in neuroscience.

As well as competing to become the International Brain Bee Champion, there are a number of activities planned for the finalists during their stay in Cairns. The IBB students will be attending lectures from a range of inspiring scientists, going on an educational trip and snorkeling on the Outer Great Barrier Reef, meeting local high school students and attending the ISN/ANS/APSN Meeting.

The IBB competition consists of five challenges in 1) anatomy, 2) histology, 3) patient diagnosis, 4) written short answer, and 5) a live question and answer challenge. Parts 1-4 of the IBB will be held at James Cook University, Cairns, with Part 5 to be held at the ISN/ANS/APSN Meeting.

The final challenge of the IBB, the live question and answer session, will be held on Monday August 24th from 12.30pm-2.30pm at the Cairns Convention Centre, during lunchtime at the ISN/ANS/APSN Meeting (exact room TBC). In the past, the final has proven to be very entertaining, and audience members are always impressed with the neuroscience knowledge these students display. I would like to invite all ANS members to attend the final and to cheer on our Australian and New Zealand Champions (Jade Pham and Nicholas Kondal) as they take on the world!

We are grateful to have the support of the following major sponsors-the International Society for Neurochemistry, the Australasian Neuroscience Society, The University of Queensland, James Cook University, the Queensland Brain Institute, the ARC Centre of Excellence for Integrative Brain Function, Freemasons Roskill Foundation, the Finkel Foundation, the Australia-Israel Chamber of Commerce.

For more information about the 2015 IBB, please visit our website <http://www.ibb2015.org>.

The Chair of the 2015 IBBC organizing committee is Dr. Linda Richards - richards@uq.edu.au

Linda  
Richards



# ANS2016 in Hobart

## Save the date: December 4th – 7th

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Satellites at the University of Tasmania  
Medical Science Precinct

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Conference on the waterfront  
Dinner at MONA

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It's never too early to start  
thinking about coming to Hobart

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The Australasian Neuroscience Society Meeting for 2016 will be held in December in Hobart. The last ANS meeting in Hobart was in 2008. It was a great success with excellent science and socialising – and so next year it is time for everyone to head south again. The meeting is to be held at the Grand Chancellor Hotel on the Hobart waterfront, with the dinner at MONA (Museum of Old and New Art). The ANS Council has recently called for nominations for the 2016 ANS Overseas Lecturer, the ANS Plenary Lecturer and the Lawrie Austin Lecturer – I am sure we will have a great line-up, which will be announced as soon as it is confirmed.

For now, let me introduce the local organising committee. The LOC will be co-chaired by myself, Tracey Dickson, and Kaylene Young. On the research programming committee are Lisa Foa, Kim Felmingham, Anna King, Robert Gasperini, Catherine Blizzard and Carlie Cullen. Loic Auderset, Barbora Fulopova and Emily Handley will be co-ordinating ECR events and the other members of the LOC are Frederic Gilbertt, Adele Woodhouse, Carmen Fernandez-Martos, and Matthew Kirkcaldie.

As we approach the meeting we will be posting regular updates in the ANS newsletter, but for now please save the date: **December 4th-7th, 2016.**

## ANS Queensland News

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Michael Piper

Queensland Brain Institute neuroscientist Professor Linda Richards at The University of Queensland was among 21 new fellows announced nationally by the Australian Academy of Science.

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### **Academy welcomes Queensland neuroscientist**

Queensland Brain Institute neuroscientist Professor Linda Richards at The University of Queensland was among 21 new fellows announced nationally by the Australian Academy of Science.

The prestigious fellowships recognise leading and innovative research, with Fellows elected by existing members of the Academy.

"I'm very honoured to be elected to the Academy," Professor Richards said. "It's a very wonderful opportunity to interact with such eminent scientists and it's a mark of recognition of our research and our contribution to Australian science."

Professor Richards is a leading developmental neurobiologist whose discoveries have defined the fundamental mechanisms regulating how the brain correctly wires the neuronal connections between its hemispheres.

"I work on how the brain is wired up during development, and how nerve cells form the correct connections that underpin brain function," Professor Richards said.

Her work on development of the cerebral midline in animal models and the developing human brain has led to a new understanding of the causes of some of the most common defects in human brain wiring.

"I'm very optimistic that in the coming decades advances in neuroimaging and genetics will provide the basis for not only diagnosing neurological diseases and illness, but also finding cures and treatments for those diseases," she said.

Professor Richards also began a national high school competition called the Australian Brain Bee Challenge, which encourages students to learn about neuroscience.

"I'm very passionate about communicating science to the public, and I want to encourage high school students to learn about neuroscience, what scientists do, and why it's so important."

July 2015

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*(ANS Queensland News ...continued)*

### **QBI appoints new director**

Professor Pankaj Sah has been appointed to the role of Director of the Queensland Brain Institute at The University of Queensland, commencing in the role from 1 July 2015.

After 12 years, QBI's Founding Director, Professor Perry Bartlett, stepped down from his role.

Having served eight years as QBI's Deputy Director (Research), Professor Sah's vision and passion for the continued success of QBI made him the outstanding candidate for the Director role.

Professor Sah's extensive knowledge of the Institute's operations, strategic direction and scientific endeavours will enable him to make an immediate impact in the role.

He is currently also serving as Director of the Science of Learning Research Centre – an ARC Special Research Initiative.

Professor Sah's research stems from gaining an understanding of neural circuits in the amygdala, an area of the brain involved in emotional processing.

He is a current recipient of a NHMRC Principal Research Fellowship, previously held a UQ Vice-Chancellor's Senior Research Fellowship, sits on the editorial board of six journals, as well as holding the position of Editor in Chief of the new Nature Partner Journal npj Science of Learning.

Professor Sah was one of the inaugural group leaders at the burgeoning Institute, which has played a strong part in elevating UQ's global ranking in recent years. He has outlined a vision with neural engineering and the science of learning as critical focus areas.

QBI and UQ thanked Professor Bartlett for his outstanding leadership and continuing invaluable contributions with a thank you dinner on 23 June. Professor Bartlett is remaining at QBI, continuing his focus on researching neurogenic regulation.

## ANS Victorian News

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ANS Victoria has continues to support communication events throughout the state. First the Brain Bee was held this month with yet another full house and was enjoyed by all (see Jee's report). Also SOBR held a fantastic development dinner that again managed a full house with students from across the campuses. SOBR is a fantastic organization that links 'students of brain research' across the state and has achieved much in its short time (see article by Jaime). With grants out of the way we can look forward to the joint ANS/ISN meeting in Cairns - see you there!

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### **Chris Reid**

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**It's no secret that funding for medical research is critically short. So it was a 'dream come true' when the Florey's Dr Brad Turner spoke to a community group and unwittingly attracted the attention of a 'scout' who would radically change his future – and hopefully the lives of people living with motor neuron disease.**

Dr Bradley Turner is renowned for his community outreach activities and his relentless quest to cure motor neuron disease (MND). As the head of the Florey's MND group, Brad was recently speaking to the Inner Wheel Club of Pakenham 70km south east of Melbourne.

*(ANS Victorian News ...continued)*

Brad enthusiastically described his work to the group, outlining a project he believed promised great hope for a new treatment. This alerted the Rotary Club of Pakenham and, a short time later, a phone call arrived from a trustee of a philanthropic foundation, recommending he submit a research proposal as quickly as possible.

A few days later, Brad was told he would receive \$3 million over five years, thanks to the Stafford Fox Medical Research Foundation, a fund that does not accept requests but, rather, seeks worthy projects and invites applications.

“This could change the course of MND. Until now, I haven’t had the funding to achieve it. It is truly, utterly amazing,” Brad says.

It is a relentless disease, with nerves controlling movement (motor neurons) degenerating and rapidly wasting muscles. It strips away the independence of people living with it, who lose their ability to walk, feed themselves, talk and breathe. The average lifespan from diagnosis is 27 months. So the need to find effective treatment is urgent, Brad says.

The grant will allow Brad and his team to fast-track some significant findings they made last year, using a form of gene therapy to substantially increase the lifespan of MND mice.

The research builds on previous work Brad has done at Oxford University, looking at a gene involved in a childhood form of MND called spinal muscular atrophy (SMA). Children born with the condition are missing a gene and become weak at six months and die within two years. Significantly, Brad found the gene was also missing in MND mice and in tissue from patients.



He experimented by putting the gene back in the MND mice – with dramatic results: the lifespan of the mice increased by two months. MND mice usually only live for four months. The process of replacing the gene also measurably saved motor neurons.

“The sad thing about MND is that by the time people are diagnosed with it, 50 per cent of motor neurons are gone so that they are already at crisis point,” he says.

“We want to prolong a person’s lifespan and save their motor neurons – they are the two key objectives for an effective treatment.”

For the next phase of research, Bradley and his team will collaborate with Flinders University scientists using a specially devised tool – a gene therapy – to deliver the SMA gene to motor neurons in the brains of mice.

He says that once the team has demonstrated that the tool brings about the same effect in the mice – a two-month increase in survival – they could adapt it to a clinical trial in humans.

“Conventionally a clinical trial can take 10 to 15 years to happen but in the case of MND it can be sooner due accelerated approval and fast track status of promising drug candidates. Within five years we could potentially have something.”

Brad says the MND patients he talks to are heartened by the findings and particularly by a graph showing the prolonged lifespan of the mice.

“When people are diagnosed with MND they know precisely what it is, they know the course it will take and that they often have no or little hope. Part of their hope comes from the knowledge that people in lab coats are beavering away working on their disease, passionately, and as a fulltime commitment – and that actually lifts their spirits.”

Brad will continue to share his work with public – going out to speak to interest groups and hosting an annual “Ask the Expert” day when patients and their families hear talks and see demonstrations of lab techniques.

“They love it!” he says, “and they ask some impressive questions.”

The 36-year-old has researched MND for more than a decade and has succumbed to the Ice Bucket Challenge four times. “When I first read about MND, I thought ‘it’s tragic and terminal’. Then I thought ‘I need to help solve this’. I tell people that I have a lifelong commitment to work on this disease.”

“The Florey’s a great place to work. It has prestige. It’s unique. I don’t know of many places that are working on so many neurological disorders under the one roof. That means great collaboration.”

“At the start of my PhD, people would ask ‘is there going to be a cure’ and I’d say I wasn’t sure. Now I tell people that it’s not a matter of ‘if’ but ‘when’. An effective treatment or cure is on the horizon.”

*(ANS Victorian News ...continued)*

### **The Florey and the University of Melbourne abuzz with the Victorian final of Brain Bee**

On 17th June, 250 year 10 students and accompanying teachers from 48 secondary schools across Victoria, as far as Ouyen and Tallangatta, participated in the Australian-New Zealand Brain Bee Challenge State Final. It was hosted and sponsored by the Florey Institute of Neuroscience and Mental Health and Melbourne Neuroscience Institute (the University of Melbourne).

The event was officially opened by the State MP for Melbourne Ms Ellen Sandell, who reflected on her own experiences in science training, and how that helped her perspectives as a politician as well as a person. Nobel Laureate Professor Peter Doherty then asserted that being a scientist is not about accumulating a great deal of 'stuff' but is really about seeing the universe with an unbiased clear lens, even when what you see is against what you and others believe.

However, the definite highlight of the day was the tours of the Anatomy museum, the DAX gallery and neuroscience laboratories, during which students showed a newly discovered interest in basic science.

The McRoberston Girls' High School cleaned up this year with winning all three individual places (Champion: Nebula Chowdhury) as well as the Team 1st prize. Runners up for team final were John Monash Science School and Methodist Ladies College. The prizes included a giant 14-pieces model of the brain, trophies, and Elsevier books.

I would like to thank all the volunteers for the day, which included over 50 scientists from the Florey and Melbourne University. I am especially grateful to Professor Geoffrey Donnan and Professor Trevor Kilpatrick for opening and closing the day, as well as for their ongoing immense financial support. I would also like to acknowledge the amazing Victorian committee coordinating the administration and logistics involving 200 teenagers, namely Jan Morgan (University of Melbourne), Dr Thomas Keeble (Florey), Dr Andrew Metha (University of Melbourne), and Dr Carli Roulston (St Vincent's Hospital/University of Melbourne).

### **Dr Jee Hyun Kim**

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Victorian coordinator of  
Australian-New Zealand Brain  
Bee Challenge



July 2015

(ANS Victorian News ...continued)



**Imagine a room filled with 150 brain research students, distinguished scientists, and science communicators from over 15 different institutes and organisations – all gathered together to discuss the future of science in Australia. This sets the scene for the recent Students of Brain Research (SOBR) Annual Professional Development Dinner, held at the Arts Centre, Melbourne, on Tuesday the 23rd of June, 2015.**

SOBR is a not-for-profit, independent organisation that is run by students. Founded in 2011, SOBR aims to connect brain research students from across Melbourne.

SOBR holds two annual staple events – the Professional Development Dinner and the Student Symposium. This year's Professional Development Dinner was a great success, with keynote speakers Prof. Patrick McGorry, Dr Krystal Evans and Dr Andi Horvath, as well as 27 VIP guests and 120 brain research students. The Student Symposium, due to be held on 23rd November 2015, provides brain research students an opportunity to present their research amongst their peers.

In its 5th year, SOBR continues to grow with over 700 followers on social media. Although currently a Melbourne focused network, there is scope for expansion to other areas of Australia. SOBR is excited by what the future may hold.

Stay tuned for SOBR's 2015 Student Symposium.

**Jaime Lee** ...and the 2015 SOBR committee



# Annual General Meeting

7.15pm, Wednesday 26th August 2015

Cairns Convention Centre

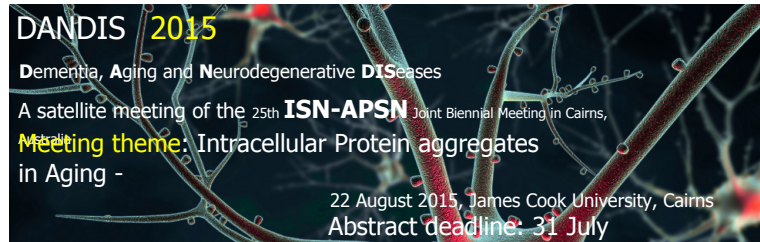
## Agenda

1. Attendance and apologies
2. Minutes of the 2014 Annual General Meeting (see April 2014 newsletter)
3. President's report
4. Secretary's report
5. Treasurer's report
6. Vote on motion to update Constitution to reflect longstanding ANS practice.

**Motion:** *that the changes as advertised on the ANS website and April 2015 newsletter be accepted. (Draft changes can be found here: <http://www.ans.org.au/societynews/proposed-changes-to-the-ans-constitution> As the changes are distributed throughout the constitution, they will be discussed and voted upon one paragraph at a time.)*

7. Editor's report
8. Presentation of 2014 and 2015 ANS Awards and Prizes
9. Presentation of ANS Distinguished Achievement Awards to Fred Mendelsohn and George Paxinos
10. Vote for ANS Honorary membership for David Vaney and Glenda Halliday.
11. Future ANS meetings
12. New ANS Council Members for 2015
13. Other business

# Upcoming Meetings and Courses



## **Dementia, Ageing and Neurodegeneration DISEases (DANDIS) – A satellite meeting of the 25th ISN-APSN Joint Biennial Meeting.**

*Saturday 22 August 2015,*

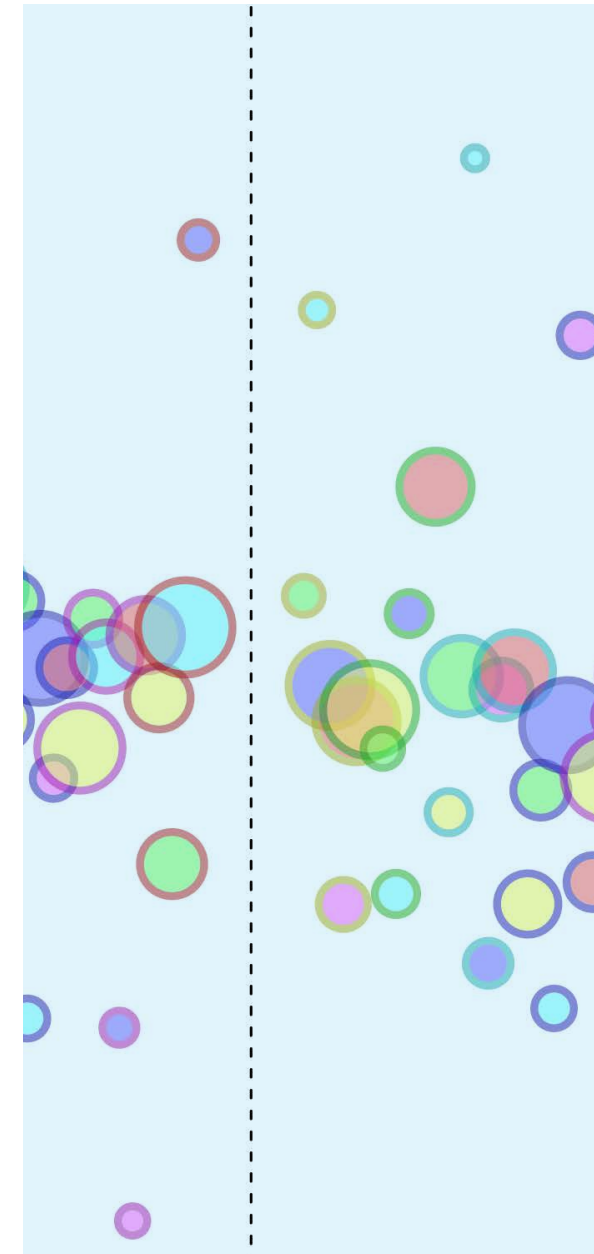
*James Cook University, Cairns, Australia*

The Dementia, Ageing and Neurodegeneration DISEases group (DANDIS) is hosting a satellite meeting to 25th ISN - APSN Joint Biennial Meeting in conjunction with the Australasian Society for Neuroscience (ANS) in Cairns. The meeting will be held on Saturday 22 August, 2015 just before the main ISN meeting at James Cook University, Cairns campus. 14-88 McGregor Rd, Smithfield QLD 4878, Australia. This year the meeting's theme is Intracellular Protein aggregates in Aging - why haven't we cracked the problem? Neurodegeneration is almost universally accompanied by protein aggregation, and in most cases the protein aggregates (beta amyloid, tau and alpha synuclein being the best known) are thought to play some significant role in the pathogenesis of neurodegeneration. However in most cases, the reason for the initiation of protein aggregation is unclear. Furthermore, attempts to modify neurodegeneration by attacking the protein aggregates have not been successful. The multiple high profile failures of anti-amyloid therapy

in Alzheimer's are a case in point. The role of identified protein aggregates needs to be rethought. This satellite will explore the links between protein aggregation beyond the usual suspects, the failure of proteolytic degradation of abnormal proteins, oxidative stress and new strategies to go beyond our current therapeutic impasse. As well as the main theme, participants are invited to submit abstracts on any aspect of aging and neurodegeneration. This intimate and highly regarded meeting is an ideal venue for students and early career researchers to showcase their work to international experts in the field. This year we will feature a "one minute poster" session, where each poster presenter has one powerpoint slide and one minute to convince people to come and see their posters. This fast and furious (and often humorous) format (like the two minute thesis) gives every poster presenter an opportunity to showcase their work in a friendly atmosphere.

<http://www.users.on.net/~reynella/DANDIS2015/DANDIS2015.htm>

Follow us on Facebook: <https://www.facebook.com/groups/DANDIS/>



## ISCCB 2015

18th International Symposium on Chromaffin Cell Biology  
August 17-21, 2015 | The Pullman Reef Casino Hotel, Cairns

On behalf of the organising committee, it is our great pleasure to invite you to register for ISCCB 2015. on-Line registration is now open.

Invited speakers include: **Nobel Laureate** Erwin Neher | Nils Brose | Mike Cousin | Peter Dunkley | Lee Eiden | Anna Fejtova | Volker Haucke | Ron Holz | Richard Haganir | Reinhard Jahn | Michael Kozlov | Manfred Lindau | Tom Martin | Jens Rettig | Josep Rizo | Phil Robinson | Ruediger Rudolf | Corey Smith | Jakob Sorensen | Matthijs Verhage | Ling-Gang Wu | Tao Xu | Robert Zorec and many more.

**There are still plenty of slots available in sessions and in The famed "Wine and Cheese" sessions for talks selected from abstracts. Poster sessions will also be held and are classically highly interactive. Early Bird registration closes June 1 and please visit the website and register online as soon as possible to help us organise the event.**

**Exhibition and Sponsorship packages are noted on the website. The Exhibition is held together with the Poster displays and refreshments in the Urchin Rooms. Exhibitors are invited to present in the Wine And Cheese Session. ISCCB 2015 precedes the ISN 2015 Meeting in Cairns.**

**Social events include a Welcome Reception and Conference Dinner. Excursions to the World Heritage listed Great Barrier Reef and Daintree Rainforest will be offered for the Thursday excursion day and as pre/post touring options. Note that the excursion is not included in the registration. However, an email with all the details of the excursion will be sent to you upon registration.**

We look forward to welcoming you to beautiful Cairns for the exciting 18th ISCCB. Best wishes, **Fred Meunier** and **Damien Keating**, *Convenors*

### TOPICS INCLUDE

- exocytosis
- endocytosis
- neurotransmission
- secretory granule formation and trafficking
- calcium regulation
- stress signals and physiology
- hypertension and neuroendocrine tumor biology

### SPEAKERS

Speakers are noted in the program and in the online Speaker Blurbs.

We are delighted to welcome an eminent group of presenters to the Cairns Symposium.

### REGISTRATION and ABSTRACT SUBMISSION

Submit your abstract on-Line with registration. Please book your accommodation at the conference hotel, on-Line with registration.

### EXHIBITION and SPONSORSHIP

Invitation and exhibition options available.

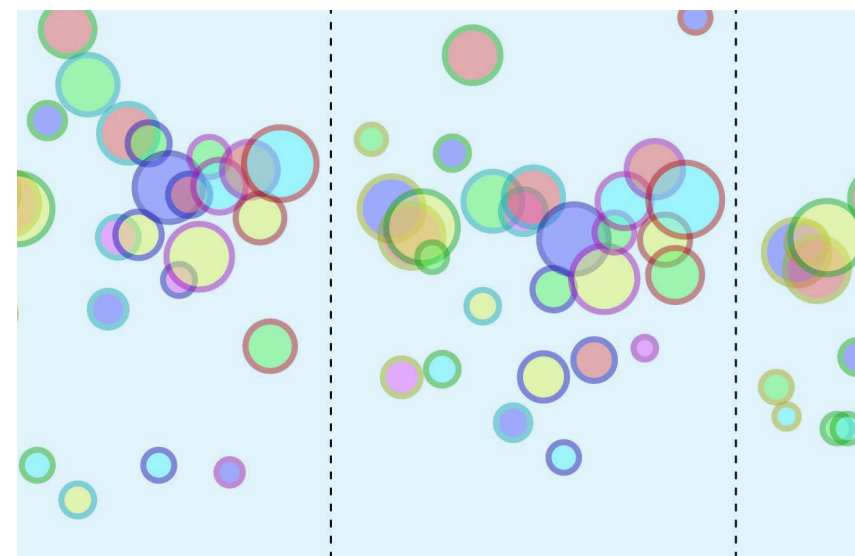
ISCCB 2015 SECRETARIAT | MTCi | PO Box 717 Caringbah, Sydney | NSW 1495 | Australia  
Tel: +61 2 9524 1799 | Mobile/Cell: +61 419 688 581 | eMail: [isccb2015@mtci.com.au](mailto:isccb2015@mtci.com.au)



### The 18th International Symposium on Chromaffin Cell Biology

August 17-21, 2015 | Cairns, QLD Australia

Website: <http://isccb2015.mtci.com.au/>







**INAUGURAL ASIA PACIFIC  
FTD AND MND MEETING  
(APFM)**

**8-9<sup>TH</sup> OCTOBER, 2015**  
At The Refectory,  
The University of Sydney

Coinciding with the global FTD awareness week and aspiring to consolidate researchers in FTD and MND to generate collaborations and support in the Asia Pacific region.

Co-ordinated by the chief investigators of the Australian ForeFront group – Prof. Glenda Halliday, Prof. John Hodges, Prof. Matthew Kiernan, Prof. Jillian Kril, Prof. Lars Itmer, Prof. Jürgen Götz and Assoc. Prof Olivier Piguet.

**PLENARY SPEAKERS**  
Steve Finkbeiner (USA) Makoto Higuchi (Japan), Manabu Ikeda (Japan), Eneida Mioshi (UK), Jonathan Rohrer (UK) and Martin Turner (UK).

**IMPORTANT DATES**

Mid-May:	Website goes live <a href="http://www.neura.edu.au/forefront/APFM">www.neura.edu.au/forefront/APFM</a>
1 <sup>st</sup> June	Abstract submissions and registration opens
31 <sup>st</sup> July	Abstract submissions closes
30 <sup>th</sup> Sept	Registration closes
7 <sup>th</sup> Oct	Pre-conference drinks at Mosman Gallery
8-9 <sup>th</sup> Oct	Meeting

**WEB REGISTRATION**

Pre-conference event (7 <sup>th</sup> Oct)	Welcome Drinks and exhibition: <i>An Unending Shadow</i>	\$20
Meeting (8-9 <sup>th</sup> Oct)	Full registration	\$100
	Student registration	\$50
	Carer session	\$25/session (includes light lunch, morning and afternoon tea)



Australian Government  
National Health and Medical Research Council  
**NHMRC**

ASSOCIATION OF RESEARCHERS IN COGNITION AND ITS DISORDERS  
**ccd**

NSW GOVERNMENT  
**NSW**

Trade & Investment



**asmr** Australian Society for Medical Research

54<sup>th</sup> National Scientific Conference  
15-18th November 2015, Stamford Plaza, Adelaide

**Bugs, Bowels  
& Beyond**

Innovations in Digestive  
Health and Disease Research

Our exciting program will bring together leading international and Australian-based scientists, clinicians and health professionals with a wide-ranging focus on conditions affecting the digestive tract.

**THEMES**  
Microbiome  
Obesity and nutrition  
Inflammatory bowel conditions  
Gastrointestinal cancers  
Pancreatic and liver diseases  
Gut, brain and microbiota

**FIRKIN ORATION**  
**Professor Eran Elinav**  
Weizmann Institute of Science, Israel.  
Professor Elinav is a clinician and scientist leading a team that investigates interactions between the innate immune system, the intestinal microbiota and their effects on health and disease.



**EDWARDS ORATION**  
**Professor Nicholas Talley**  
Pro Vice Chancellor, Faculty of Health, University of Newcastle  
Professor Talley is an icon of Australian health and medical research with over 1,000 publications and recipient of more than \$10 million in research funding. His team investigates the molecular basis and treatment of Irritable Bowel Syndrome (IBS), as well as the link between bacteria and dyspepsia, gastroesophageal reflux disease (GORD) and gastritis.



**INVITED SPEAKERS**

 Professor Mark Morrison, Microbiome	 Dr Vicki Whitehall, Colon Cancer	 Dr Ilse Rooman, Pancreatic Cancer	 Associate Professor Phil Sutton, Mucosal Immunity
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**SCiNDU: Systems & Computational Neuroscience Down Under**  
**Tuesday 15th-Thursday 17th December, 2015**  
 Queensland Brain Institute, The University of Queensland, Brisbane, Australia

Further information and Registration at: [www.qbi.uq.edu.au/scindu](http://www.qbi.uq.edu.au/scindu)  
 Abstract submission and early registration deadline: Oct 16th

This conference brings together international leaders in understanding the computational principles underlying how neural circuits decode sensory information, make decisions, and learn from experience.

**Speakers include:**

Ehsan Arabsadegh (ANU)	Jason Mattingley (UQ)
Mark Bear (MIT)	Linda Richards (UQ)
Michael Breakspear (QIMR)	Peter Robinson (Sydney)
Allen Cheung (UQ)	Marcello Rosa (Monash)
Yang Dan (UC Berkeley)	Pankaj Sah (UQ)
Peter Dayan (UCL)	Mandyam Srinivasan (UQ)
Marta Garrido (UQ)	Greg Stuart (ANU)
Geoffrey Goodhill (UQ)	Stephen Williams (UQ)
Zach Mainen (Champlain)	Li Zhaoqing (UCL)

On December 15th the conference will be preceded by tutorials including:  
**Mark Bear: Experience-dependent synaptic plasticity**  
**Peter Dayan: Neural reinforcement learning**  
**Jason Mattingley: Brain stimulation, attention and plasticity**  
**Li Zhaoqing: Vision, efficient coding and salience**

Australian Research Council  
 Centre of Excellence for  
 Integrative Brain Function

The University of Queensland  
 Queensland Brain Institute



We are always interested in receiving articles or information from ANS members for the newsletter. Such material could include topics for discussion, meeting announcements, meeting reports, news about prizes and awards received by ANS members, obituaries, and any other items of potential interest to members of our Society. The copy deadline for the next newsletter is 10 October 2015.

#### ANS Policy on Requests for Publicity via Email Circulation

The policy of ANS is to minimise email traffic to members. Advertisements for meetings and other significant announcements such as job vacancies can be added to the website and included in the newsletter if appropriate. Such requests should be directed to the ANS Secretary.

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