October 2018



## Contents

Message from the President

ANS Annual Meeting - Brisbane 2018

Student-EMCR Networking

ANS Annual General Meeting: Notification of Agenda

ANS and SMHR Team Up

Imaging Workshop

Lifetime Achievement Award for Marcello Costa

ANS Member wins Eureka Prize

Neuroscience outreach in Sydney

Brain Bee

From the ANS Animals in Research Committee

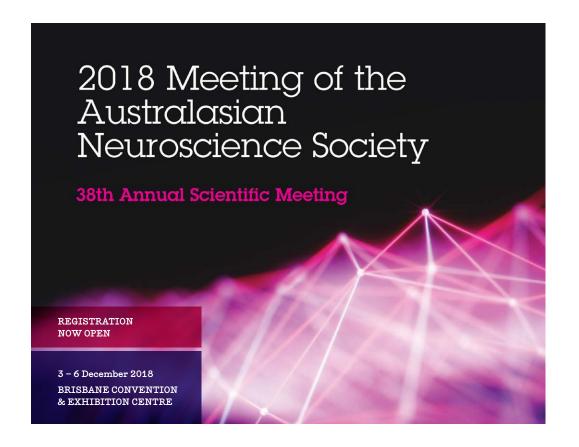
Brisbane Pain Research Symposium

International Brain Initiative

www.ans.org.au

# Australasian Neuroscience Society

# Newsletter



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# Message from the President

"It is the mark of an educated mind to be able to entertain a thought without accepting it." Aristotle

Can you come up with an engaging neuroscience quote? I'd love to hear it (richards@uq.edu.au)

The ANS Annual Scientific Meeting to be held in Brisbane, December 3-6, 2018, is a highlight of our neuroscience calendar. This meeting promises to be a fantastic event with superb international speakers and a chance to hear the latest cuttingedge science from leading and emerging Australian and New Zealand researchers. The annual meeting is ANS's flagship event and is a critical opportunity for you to promote your work, impress the reviewers of your grants and papers, and network and collaborate with colleagues from the region.

I cannot stress enough the importance of developing a culture of supporting your Society and this annual meeting over other meetings. It is essential to instil such a culture into our trainees because the future of our local scientific community depends on the ability of the next generation to develop their own networks, acquire new knowledge, and polish their skills in scientific presentation. It is therefore crucial that laboratories provide students and Fellows with an opportunity to attend and present at the annual meeting.

Abstract submissions for poster presentations are still open so I encourage everyone to attend and present their work at the meeting.

"Open neuroscience" - navigating credit assignment

New large-scale collaborative networks are developing internationally with the establishment of national and regional brain initiatives and scientific consortia around the globe. Open "big science" programs are now common in MRI and genetics, or have been organised around a specific disease (e.g. The Global Alzheimer's Association Interactive Network, http://www.gaain.org/). However, such programs are less common in areas of basic neuroscience such as electrophysiology, cell and molecular biology, or human and animal behaviour, as they require the establishment of methods and infrastructure for data sharing. Some emerging examples of the latter are the "International Brain Lab" (see Neuron, 2017, 96; p1213-1218) and "Neurodata without Borders" (https://www.nwb.org/).

Such big science programs are developing new rules of engagement and collaboration around credit assignment and authorship, but these do not necessarily comply with the new draft guidelines on authorship being developed by Universities Australia, the ARC and NHMRC as a supporting document of the Australian Code for the Responsible Conduct of Research, which focus on substantial intellectual contribution and accountability for the research data. This definition of authorship does not take into account important aspects of projects such as recruitment, provision of technologies and tools upon which the research is based etc., and will likely only be feasible in this new environment of big science consortia if other forms of credit assignment count towards an



Prof Linda Richards

PhD, FAA, FAHMS President, ANS (Message from the President... continued) individual's overall career progression and, as a consequence, grant and fellowship funding. New models of authorship and credit assignment are needed to help investigators, journals, funding bodies, universities and employers to understand how the contributions and productivity of individuals can be judged objectively. This framework is important for establishing incentives for investigators to participate in big science in order to drive key discoveries and major steps forward.

One mechanism may be to assign credit to acknowledgements by listing these in searchable databases – where all contributions can be acknowledged without assigning authorship. Categories of contributions could then be included in publications in a standard format so that it could be loaded into a searchable acknowledgements database that could be viewed by anyone. Individuals could find where they have been acknowledged so they can add this to their CV and link it to their ORCID. This would give an indication of their productivity in contributing to other people's work, an important and crucial aspect of science but one which is often taken for granted and not acknowledged in career development.

Open neuroscience offers a tantalising hope for funders that more discoveries and scientific progress will be made from their investment as the data is re-used and shared. Open neuroscience requires the data to be in a format that can be replicated and re-purposed, potentially vastly increasing the value and quality of the data. This is particularly appealing for those wanting

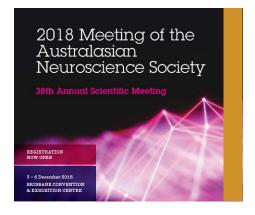
"How can you be quite so uncouth? After sharing the same skull for all these millennia, surely you should have discovered the cortical *I* is a compulsive liar."

From: Ode to the Diencephalon, by W.H. Auden Provided by Prof Seong-Seng Tan, Florey Institute of Neuroscience and Mental Health.

to engage industry partners, who find irreproducibility issues to be a major impediment. Working in large consortia and in an open neuroscience framework could enable more rigour in reproducibility prior to publication, as well as the ability to tackle bigger scientific questions and provide enormous standardised datasets that will facilitate further discovery.

I encourage everyone to begin a dialogue around this topic as there are complex issues for scientists to consider regarding wider data-sharing, most importantly the resources required to achieve it on a national or international scale. Two interesting articles on this topic, in *PLoS Biology* (2016) and *eLife* (2017), relate to a five-year open science experiment under way at the Montreal Neurological Institute in Canada.

I look forward to seeing you at the ANS Annual Scientific Meeting in Brisbane.



# ANS Annual Meeting - Brisbane 2018

We are now a little over a month away from the 2018 Brisbane meeting and everything is in place for a feast of the latest in neuroscience research.

The 38th Annual Scientific Meeting of the Australasian Neuroscience Society will be held at the Brisbane Convention and Exhibition Centre on 3-6 December 2018.

The Plenary lectures will be presented by leading Australian and New Zealand neuroscientists, including Alan Mackay-Sim (ANS Plenary), Glenda Halliday (Elspeth McLachlan Plenary), Cliff Abraham (Lawrie Austin Plenary) and Neville Knuckey (Eccles Plenary). This year's International Plenary will be presented by Alison Goate, whose research focuses on dementia (Alzheimer's disease and frontotemporal dementia) and addiction (alcohol dependence).

The 22 sessions in the symposium program highlight the outstanding quality of Australian and New Zealand neuroscience. The symposia cover a broad range of research areas, including microglia biology, mapping of neural circuitry using state-of-the-art imaging and genetic techniques, and novel approaches to understanding neurological and neurodegenerative disease.

The Imaging Workshop will again be offered this year. The organisers have put together an exciting program which will showcase the latest advances in imaging technology and its applications in neuroscience research. The Workshop will be held at the Brisbane Convention Centre on the 3rd December (1.00–4.30pm). Attendance is free to all ANS registrants.

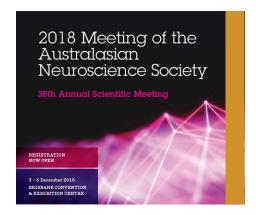
One of the goals for this year's meeting is to boost the participation of early-and mid-career researchers and higher degree research students. To this end, student and EMCR representatives are now formal members of the ANS Council and have been actively involved in organising the meeting. Look out for the student and EMCR networking events in the program.

Remember, too, that student registration for ANS 2018 has been reduced by \$100.

There's no reason why anyone in your group should miss out on attending! Hope to see everyone in Brisbane.

## Helen Cooper

ANS Editor and Local Organising Committee, ANS 2018



# Student-EMCR Networking

Conference delegates are invited to attend the ANS Student-EMCR Networking Event during the 2018 Annual Scientific Meeting in Brisbane. The event will be run in a 'speed-dating' style, where groups of students and EMCRs will have the chance to discuss a range of topics with an esteemed list of speakers. This event ran in a similar format last year and was a great success. It's promising to be so again this year with 300 ANS delegates already registered to attend!

**Date:** 4 December 2018, 7:30–9:30pm **Cost:** Free for ANS student members and \$15 for other registrants **Food:** Canapes provided

Example topics that will be discussed:

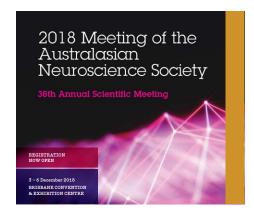
- What activities in addition to your research should you engage in and what should you try to avoid?
- Experiences of hiring academics: what are we looking for?
- Starting a lab
- Developing lectures without losing research momentum: is it possible?
- How to initiate and maintain effective national and international collaborations?
- Striking industry relationships
- How to move from academia to industry and back again?
- Invited talk? How to write a short and sweet biography and abstract to draw a crowd
- Advocating for more investment into brain and neuroscience research in Australia (guest speaker from the Australian Brain Alliance)
- The mission of the Australian Brain Alliance: what has been accomplished so far, and where to from here?

Have your say! Please email us with topics and questions that you would like answered by one of our speakers.

If you are interested in joining our list of excellent speakers at this event, please don't hesitate to get in contact with our ANS Student Body and EMCR representatives. We are looking for dynamic speakers with a range of experiences. They can be EMCRs, senior postdoctoral researchers, new group leaders, established group leaders or people working in an industry position.

## Contacts

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<a href="mailto:Ann-Maree.Vallence@murdoch.edu.au">Ann-Maree.Vallence@murdoch.edu.au</a>



# Annual General Meeting: Notification of Agenda

The ANS Annual General Meeting will be held from 5.45pm to 7pm on Wednesday, 5 December 2018 in the Great Hall, Brisbane Convention & Exhibition Centre, during the annual conference in Brisbane.

#### Agenda

- 1. Apologies
- 2. Minutes of the 2017
  Annual General Meeting
- 3. President's report
- 4. Secretary's report
- 5. Treasurer's report
- 6. Editor's report
- 7. ANS Awards
- 8. Honorary Membership and Distinguished Achievement Award
- 9. Other business

If you wish to be recorded as an apology for the Annual General Meeting, please email the ANS Secretariat (secretariat@ans.org.au) with your name indicating you would like to be listed as an apology for the AGM Minutes.

# ANS and SMHR Team Up





For the first time, the Australasian Neuroscience Society (ANS) and the Society for Mental Health Research (SMHR) are collaborating to support our annual conferences, which occur close together in 2018.

The 40th annual SMHR conference runs 28–30 November at the Sofitel Noosa, and the 38th annual ANS conference will be held the following week, 3–6 December, at the Brisbane Convention & Exhibition Centre.

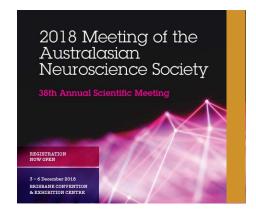
ANS is offering all SMHR conference attendees a discounted registration at their conference: \$780, which is the ANS Member rate, a discount of \$170 on the usual Non-Member rate. In turn, SMHR is offering all ANS conference attendees a discounted registration at the SMHR conference: the SMHR Early-Bird Member registration rate will apply (a discount of \$180).

Please take this opportunity to attend both of these leading scientific conferences, and support mental health research in Australia and New Zealand.

SMHR attendees wishing to register for the ANS meeting should contact A/Prof Helen Cooper at: <a href="https://hiccooper@uq.edu.au">h.cooper@uq.edu.au</a>. ANS attendees wishing to register for the SMHR meeting should contact A/Prof Frances Kay-Lambkin at: <a href="mailto:frances.kaylambkin@newcastle.edu.au">frances.kaylambkin@newcastle.edu.au</a>

Helen Cooper

ANS Editor



## **Imaging Workshop**

We are pleased to invite you to the 2018 Imaging Workshop, to be held at the Brisbane Convention & Exhibition Centre on 3 December 2018, right before the start of the main ANS Brisbane meeting.

The Workshop aims to showcase some of the latest advances in imaging techniques and their applications in neuroscience research. This event is especially popular with students and postdoctoral fellows, but established researchers will also find it to be very useful.

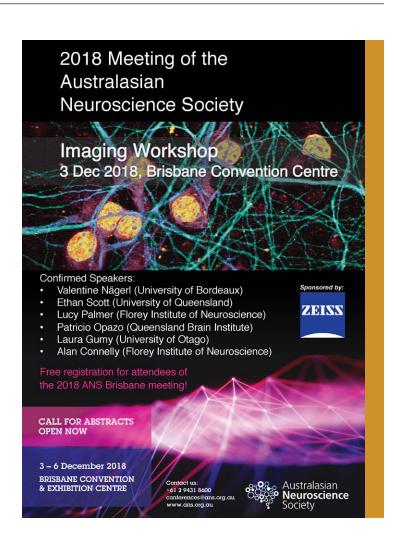
Thanks to the generous support of Zeiss Australia, the Workshop will feature a stellar line-up of speakers. They will cover a range of microscopy and imaging techniques, including 3D-STED, in vivo two-photon imaging, super-resolution microscopy, visualisation of vesicular trafficking in live neurons, and functional magnetic resonance imaging (fMRI).

Registration for the Imaging Workshop is free for all ANS Annual Meeting registrants. Please remember to indicate your Workshop attendance in the tick-box on the registration page.

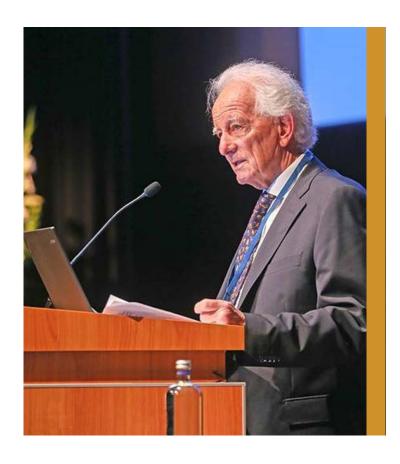
Hope to see everyone at the Imaging Workshop!

Victor Anggono

QBI, 2018 Imaging Workshop Organiser



# Lifetime Achievement Award for Marcello Costa



Marcello Costa

Marcello Costa, the Matthew Flinders Distinguished Professor at Flinders University and life member of ANS, has been awarded the inaugural 'Lifetime Achievement Award' by the Federation of Neurogastroenterology and Motility at their recent annual conference in Amsterdam.

This is a notable achievement that recognises a long career of contributions to neurogastroenterology, a field that seeks to understand the neurological underpinnings of various gastroenterological diseases.

In accepting the award in front of 900 delegates, Marcello made the following comments.

"First of all I wish to congratulate the Neurogastroenterology community for introducing this award. Other senior researchers before me would have been worthy recipients and many of the younger generation I am sure will receive it."

"Fifty-three years ago I published my first paper on the gut with my supervisor and mentor Giorgio Gabella in Turin. Five years later Geoff Burnstock invited me to Australia... In 1975 my next mentors, Laurie Geffen and John Chalmers, appointed me to the new Medical School at Flinders where I am still."

"I [have] published with more than 180 colleagues. Many will be here today... With some I have worked for a long time: seventeen years with John Furness, who taught me the proper Australian language, and Simon Brookes for the subsequent 30 years, who taught me the proper English."

"Neither, I am afraid, succeeded."

"Scientists are the glue of humankind. Never like now we are needed to counteract the increasing isolationism of so many communities and countries... The best way to resist is to keep an open society alive by holding rigorous yet amicable peer review systems. We should also resist the temptation to accept any pseudoscience..."

"Today is the peak of my scientific career, and I would like to share it with all those friends and colleagues who allowed me to have so much fun for such a long time."

"I wish all of you to enjoy this exciting meeting and I hope to see all of you in Adelaide in two years time. Thank you."

# ANS Member wins Eureka Prize

This Eureka Award recognises the fruitful outcome of a collaboration between physics and neuroscience, and reminds us that major advances often occur at the interface between disciplines.

ANS member Ethan Scott, together with colleagues from physics, has been awarded an Australian Museum Eureka Prize for research using optical tweezers to understand movement in zebrafish.

The Eureka Award for Excellence in Interdisciplinary Scientific Research was presented to UQ scientists Ethan Scott, Itia Favre-Bulle and Halina Rubinsztein-Dunlop for devising a new method to study how our brains detect gravity and motion.

Their method is based on using light to move ear stones in zebrafish to produce a sensation of

movement and eliciting behavioural movements and corresponding neuronal activity (Favre-Bulle IA, Stillgoe AB, Rubinsztein-Dunlop H & Scott EK [2017], Optical trapping of otoliths drives vestibular behaviours in larval zebrafish, Nature Communications 8, 630).

Using light to move microscopic particles was first demonstrated by Arthur Ashkin in the 1970s. By an incredible coincidence, Ashkin has just been awarded a share of the 2018 Nobel Prize in Physics for this discovery.

When photons impinge on transparent particles, the transfer of photon momentum brings about mechanical forces enabling trapping and manipulation of the particles (Ashkin A [1970], Acceleration and trapping of particles by radiation pressure, Physical Review Letters 24, 156–159). By using a laser beam as "optical tweezers", it is possible to move small particles remotely.

The use of optical tweezers to manipulate cells, organelles and vesicles has mostly been done in artificial cellular environments or in vitro preparations (e.g. cell cultures). For example, the technique has been used to guide the growth of dendrites and axons, and to optically manipulate synaptic vesicles.

The UQ group has, for the first time, used optical tweezers in an intact living animal. Ethan and his colleagues manipulated otoliths (or ear stones) in a living larval zebrafish to trigger fictive vestibular stimuli while the fish was stationary. Applying optical forces on the otoliths resulted in tail movements and a rolling correction in the fish's eyes. Such controlled manipulation of the vestibular system enables a systematic study of neuronal circuit processing that explains how animals detect gravity and motion.

This Eureka Award recognises the fruitful outcome of a collaboration between physics and neuroscience, and reminds us that major advances often occur at the interface between disciplines.

Congratulations to Ethan, Itia and Halina for their achievement.

## Vincent Daria

ANU

Ethan Scott [L] with colleagues Itia Favre-Bulle and Halina Rubinsztein-Dunlop.



# Neuroscience outreach in Sydney

Neuroscientists from the University of Sydney visited the Year 9 Science class at Rosebank College, Five Dock, NSW, to teach the students about the brain as part of their curricular activities on the brain and nervous system.

The visit included a program of six hands-on activities demonstrating different aspects of brain function, ending with a fun quiz to test what the students had learnt.

The team enjoyed the morning, as did the students, as evidenced by the lovely thank you card received after the event.

This event was sponsored by ANS and is part of a regular series of school visits in NSW each year.

# Kay Double

University of Sydney





# Brain Bee



The Brain Bee Challenge, the ANS-sponsored brain sciences competition for high school students in Australia and NZ, is moving inexorably toward the finals round which will be held at the ANS Conference in Brisbane in December.

Our state and island winners have been selected and are now being tutored weekly on brain anatomy by Charles Watson to prepare them for the finals. At the finals the Australian and NZ winners will be determined, to advance to the International Brain Bee in South Korea in September 2019 in conjunction with the IBRO World Congress of Neuroscience.

The ANS has been working to improve the quality of the learning content for the Brain Bee Challenge, in a three-step process. First, ANS members and other neuroscientists provide content from their existing PowerPoint slides from undergraduate lectures. In particular, content has been generously provided by Hannah Keage and Sarah Cohen-Woods from SA, Andy Lawrence from the Florey, and Kate Hoy from the Monash Alfred Psychiatry Research Centre.

Next, the content is modified for a school audience and then vetted by a Brain Bee student reference group consisting of past Brain Bee winners and other enthusiastic young budding neuroscientists from Australia and NZ. Finally, after a last check from the content experts, the material is sent to our NZ education partners who develop the educational format, including self-assessment materials.

We would be very grateful for further contributions from ANS members! In particular, we are looking for content on the control of movement, neural development, childhood disorders, the neural basis of learning and memory, sleep, stress, psychiatric disorders, treatments and therapies, and brain recording and imaging.

If you feel you can contribute your undergraduate teaching slides, please send them to ramesh.rajan@monash.edu.

## Ramesh Rajan

Brain Bee Challenge coordinator, Monash University October 2018

# From the ANS Animals in Research Committee

The Society for Neuroscience (SfN) and the Federation of European Neuroscience Societies (FENS) have issued a joint statement condemning the Max-Planck Society's lack of support for Professor Nikos Logothetis, Director of the Max Planck Institute for Biological Cybernetics (Tübingen), in fighting allegations of wrongdoing in his animal-based research.

The SfN/FENS joint statement released on 3 August reaffirms the value of animal-based research in advancing biomedical science, and proposes that "Scientists should be able to depend upon support from their institutes when faced with unfounded attacks from animal rights organisations and public smearing, as in the case of Professor Logothetis". <a href="https://www.fens.org/">https://www.fens.org/</a>
News-Activities/News/20181/08/FENS-SfN-Joint-statement-Logothetis/

This follows an earlier open letter from scientists which provides a comprehensive background to the situation. Several Australian neuroscientists provided expressions of support, including ANS's President-Elect, Cliff Abraham, who wrote: "I fully support the sentiments expressed in this open letter".

ANS members are encouraged to read the open letter and, if they feel strongly, to express their views by using the "Enter your comment here..." box at the bottom of the following web page. https://speakingofresearch.com/2018/07/25/open-letter-regarding-the-max-planck-societys-actions-against-mpi-bc-director-prof-logothetis/

## Marcello Rosa

ANS Animals in Research committee



# Brisbane Pain Research Symposium



You are invited to attend the first Brisbane-wide whole-day multidisciplinary pain research symposium, which will be held immediately after the ANS conference, on Friday 7 December at the Queensland Bioscience Precinct Auditorium. The symposium will be hosted by the IMB Centre for Pain Research.

This free all-day symposium is open to all members of the community with an interest in advancing pain research and treatments. Postgraduate research candidates (Hons, Masters, PhD), early career researchers and clinicians are particularly encouraged to submit an abstract for the symposium. Visit <a href="https://bit.ly/BrisPain2018">https://bit.ly/BrisPain2018</a>

Generous prizes for the best posters and best punchy poster talks will be awarded!

#### October 2018

(Brisbane Pain Research Symposium... continued)

#### **Keynote Speakers**

## Dr Chris Towne:

Senior Director, Circuit Therapeutics (USA) 'Light- and sound-activated gene therapy for non-invasive clinical neuromodulation'

#### A/Prof Paul Grav:

Director, Prof Tess Cramond Multidisciplinary
Pain Centre, Royal Brisbane & Women's Hospital,
Metro North Hospital & Health Service
'Clinical pain research: The need and the challenges'

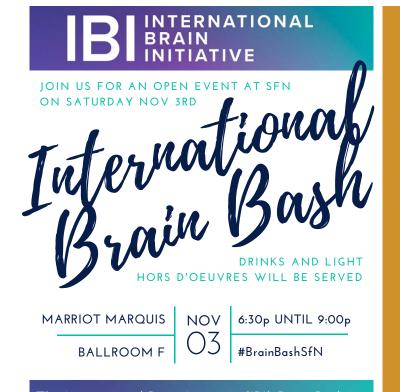
Our aim is to stimulate scientific discussion, collaboration and ongoing engagement to advance pain research and treatments with all sectors of the community, including researchers, health professionals, people living with pain-related conditions, carers, hospital administrators, industry representatives, and community support groups.

Undergraduate students and members of the general public are very welcome to attend.

## **Enquiries**

Dr Trung Ngo
Email at <u>Trung.Ngo@uq.edu.au</u>
Mater Research Institute-UQ, University
of Queensland Faculty of Medicine
& Translational Research Institute

# International Brain Initiative



The International Brain Initiative (IBI) Brain Bash is a LAUNCH PARTY for the IBI website & a CELEBRATION of this global collaboration.

If you're going to SfN in San Diego this year, you are invited to attend the International Brain Bash.

This open event will celebrate the International Brain Initiative, a new body that coordinates national brain initiatives from around the world, including our own Australian Brain Alliance.

Come along and help us toast this global neuroscience collaboration.

# New Newsletter Editors

ANS Council are pleased to announce that Dr Brent Neumann (Monash University) and Dr Kaylene Young (University of Tasmania) will be the new ANS Newsletter Editors from January 2019.

We are delighted to welcome Brent and Kaylene into this role and warmly thank Professor John Bekkers, who has been in this role since January 2017, for his excellent service to member communications. We are sure that Brent and Kaylene will continue the high standard of the newsletter set by John.

Don't forget that the newsletter is a voice for all members and the Editors are happy to hear of neuroscience news or events of interest to the membership for inclusion in the next issue.

Kay Double

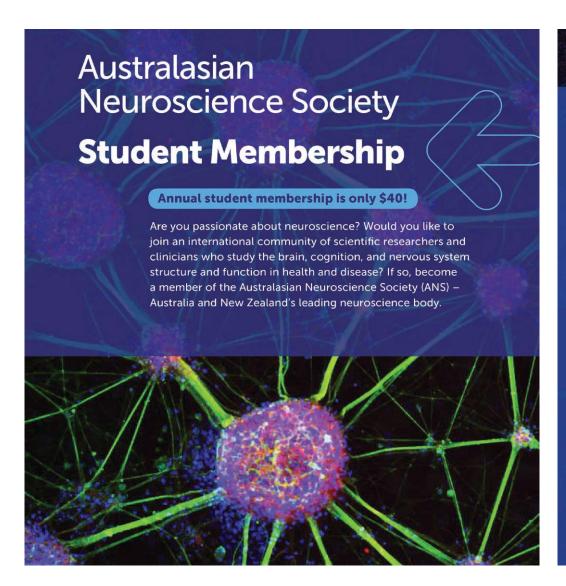
ANS Secretary

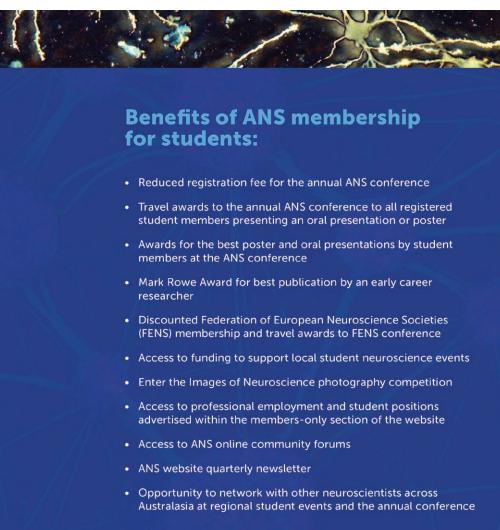
[L] Brent Neumann
[R] Kaylene Young

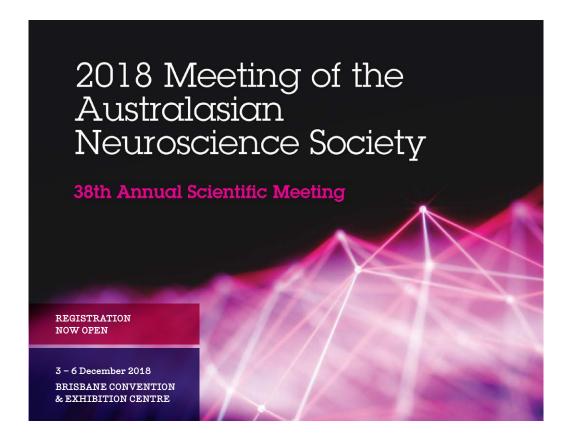




# Become an ANS member or student member!









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 Monday 14 January 2019.

## **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.

## **Newsletter Editor**

Prof John Bekkers John Curtin School of Medical Research

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## Authorised by

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