

ANZSCDB

Australia and New Zealand Society for
Cell and Developmental Biology Inc.



ANZSCDB Newsletter – 31 July 2017

Dear ANZSCDB members,

It is a pleasure to be sharing news with Society Members again.

We launched our first new look Newsletter in October 2016. The aim is to keep Society Members more up to date with who's who, what's happening and what is planned, by having three short format Newsletters a year.

In this Newsletter I am delighted to share with you news of our ANZSCDB award winners. We honour and celebrate the achievement of the 2017 President's Medallist, Peter Currie and the 2017 Emerging Leader Award recipient, Archa Fox. The interviews prepared by Oliver Rackman and Alex Combes are fabulous!

Another exciting award worthy of great fanfare is the election of Melissa Little as a Fellow of the Australian Academy of Science. Melissa Little received the ANZSCDB President's Medal in 2015 and so we are enormously proud of Melissa Little FAA!

In the last Newsletter I asked students and ECRs to introduce themselves and their work to Members of our Society. I am pleased to say that you can read their contributions in the *News from Members* section. This call for information is not restricted to students and ECRs. So please, don't be shy, prepare a brief profile, tell us about your research, and send this and an image of yourself (or your research) to us so that you will be a part of the next Newsletter.

It is time to identify the next ANZSCDB State representatives. State Representatives of the Society hold their position for two years, and they are responsible for tasks such as promoting the ANZSCDB among cell and developmental biologists in their home states, organising the annual state-based ANZSCDB-sponsored cell and developmental biology meetings and writing meeting and state roundup reports for the ANZSCDB newsletters. There are two representatives per state and a new representative is appointed at ComBio each year, as one representative steps down.

A call went out for nominations and we have received a good number, so thanks! However, we need nominations from WA and NSW. So please do get in touch NOW as it would be great to have you as part of the ANZSCDB team.

Thanks to all those who sent their news!

Looking forward to seeing you in Adelaide for ComBio2017!

All the best until next time.

Sally Dunwoodie
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Key Dates

2-5 October 2017: ComBio2017 at Adelaide Convention Centre

Register now and make sure to tick the ANZSCDB box!

<http://www.combio.org.au/combio2017/>

25 October 2017: 10th Victorian Cell and Developmental Biology Meeting, Kenneth Meyer Auditorium, Melbourne Brain Centre, University of Melbourne

<http://www.anzscdb.org/state-meetings/victoria/>

25-27 October 2017: The inaugural Australian *C. elegans* symposium

<https://www.australianeleganssymposium.org>

A poster is available for you to help advertise this meeting by [clicking here](#).

2-3 November 2017: 6th ANCVDB & SCA Meeting

Australian Network of Cardiac and Vascular Developmental Biologists

Stem Cell Australia

<http://www.cardiovascularbiology.org.au/ancvdb-sca2017>

A poster is available for you to help advertise this meeting by [clicking here](#).

13 November 2017: South Australian Cell and Developmental Biology Meeting, University of South Australia

<http://www.anzscdb.org/state-meetings/south-australia/>

27-31 January 2018: International Congress of Cell Biology

<http://www.ccmb.res.in/iccb2018/>

Keeping Up to Date

With thanks to Megan Wilson.

ANZSCDB Facebook page

<https://www.facebook.com/ANZSCDBiology/>

ANZSCDB Twitter feed

<https://twitter.com/anzscdb>

ANZSCDB Award Announcements

President's Medal 2017: Peter Currie, Director of the Australian Regenerative Medicine Institute (Monash University) will be awarded the President's Medal and deliver a plenary lecture at ComBio.

Read Oliver Rackman's (WA State Representative) interview with Peter Currie by [clicking here](#).

"Peter is a world leader in the development and regeneration of muscle and has been awarded the Eureka Prize and the Paul Walker Award in recognition of his groundbreaking research. He is currently the Director of the Australian Regenerative Medicine Institute at Monash University."



Emerging Leader Award 2017: Archa Fox, School of Anatomy, University of Western Australia, will receive the Emerging Leader Award and will deliver a symposium lecture at ComBio.

Read Alex Combes' (VIC State Representative) interview with Archa Fox by [clicking here](#).

"From an unconventional childhood on a commune in India to the discovery of paraspeckles and running a research group in Perth, Archa Fox is not your typical scientist. Archa has previously said that her time in India shaped her moral compass and led her to follow her interest in science without a regard for recognition or monetary reward."



Award Winning News

Melissa Little, Theme Director of Cell Biology at the Murdoch Children's Research Institute, has been elected as a Fellow of the Australian Academy of Science, one of the highest honours an Australian scientist can receive

Melissa Little is internationally recognised for her research on kidney development and her pioneering studies into renal regeneration. Her work, featured on the front covers of *Nature* and *Nature Cell Biology*, describing the generation of kidney organoids from human pluripotent stem cells. This breakthrough opens the door to kidney disease modelling, drug screening and the bioengineering of replacement kidney tissue. Together with a strong track record of commercial translation, Melissa has been a leader in Australian science policy through her membership of both the Wills and McKeon reviews of Health and Medical Science.



<https://www.science.org.au/fellowship/fellows/professor-melissa-little>

Meeting Report

MOHHA – Model Organisms in Human Health Australia

The 1st MOHHA meeting was held at Balgownie Estate in the Yarra Valley, June 27-29 2017 and was attended by 70 delegates. This meeting brought together leading Australian and international clinical geneticists and researchers from diverse model organism research communities to create opportunities for interactions.

The growing issue of how to identify human disease genes and their mechanisms of pathogenesis was well articulated by Phil Hieter from the Rare Diseases Models and Mechanisms Network in Canada (<http://rare-diseases-catalyst-network.ca/>). Phil described how sequencing has led to identification of many genetic variants in genes of unknown function. The Canadian network has sought to catalyse connections between clinical geneticists and scientists skilled in the investigation of gene function and analysis of genetic variants in model organisms. Hugo Bellen from Baylor College of Medicine described the establishment of the NIH Undiagnosed Disease Network that utilises zebrafish and *Drosophila* to functionally analyse human disease gene variants. This work makes use of MARRVEL (Model Organism Aggregated Resources for Rare Variant ExpLoration <http://marrvel.org/>) to prioritise human gene variants for mechanistic analysis in model organisms. He has shown that ~70% of tested human transgenes rescue loss of function *Drosophila* phenotypes, greatly facilitating in depth analyses of effects of variants on gene function. Among the talks on model organisms, Trudi Schupbach (Princeton) described modelling RASopathies in *Drosophila* and Nobel Laureate Eric Wieschaus (also of Princeton) described elegant studies to show how myosin-based tension protects cells from undergoing epithelial to mesenchymal transition in the presence of the mesenchymal inducer, Snail. Anna Huttenlocher (University of Wisconsin) described how CXCR family receptors regulate the innate immune response in zebrafish, and Sandhya Koushika (TATA Institute) showed how *C.elegans* can be used to analyse molecular drivers of axonal transport. Patrick Tam (CMRI) and Moira O'Bryan (Monash University) spoke on mouse models for analysis of the genetics that underlie head development and regulation of microtubule dynamics during spermiogenesis, respectively, and Pierre-Pascal Lenck-Santini described mouse models of Dravet syndrome. The enormous advances in identification of human disease genes were described by Daniel MacArthur (Broad Institute), in particular the activities of the Exome Aggregation Consortium (<http://exac.broadinstitute.org/>). Elina Hypponen (UniSA) described epidemiological data linking vitamin D with obesity, Marina Kennerson (ANZAC Institute) outlined new models of hereditary neuropathies and Nigel Laing (Harry Perkins Institute) described the development of sequencing strategies for neurogenetic diagnoses. The meeting was rounded out by discussions from John Christodoulou and Kathryn North of the Murdoch Children's Research Institute / Australian Genomics Health Alliance on Rett Syndrome and the identification of genes underlying neuromuscular disorders, in addition to the establishment of an Australian network of clinical geneticists and model organism researchers. Watch this space.

The meeting co-Chairs (Coral Warr and Gary Hime) would like to thank their organising committee and the meeting's generous sponsors for ensuring the meeting's success.



News from Members

Marcus Heisler has recently moved to Australia as an Associate Professor (School of Life and Environmental Sciences, University of Sydney). Marcus has moved from running a laboratory in the Developmental Biology Unit at the EMBL, Heidelberg. Marcus is speaking at ComBio2017 about fundamental patterning mechanisms that shape plant development. You can learn more about Marcus' research at www.heislerlab.com

Dustin Flanagan is a post doctoral scientist working with Elizabeth Vincan at the Doherty Institute. He was awarded an ISSCR Travel Award for the 2017 ISSCR Annual Meeting in Boston and a Kearton travel grant (\$4,000 Melbourne Health) to spend three weeks in the laboratory of A. Professor Karl Willert, a Wnt signalling expert, in San Diego, USA, after the ISSCR meeting. He was also awarded "The Gene Target Solutions" poster prize at the inaugural Victorian Comprehensive Cancer Centre (in the Parkville Precinct) post-doc symposium "New Frontiers in Cancer Research Symposium" 26th May, 2017.



Chieh (Jade) Yu is a PhD student at QUT, with Larisa Haupt in Brisbane. She was recently awarded the EMBL Australia Short Term Travel Grant which will contribute to her attendance at the 41st EMBL PhD Symposium in Heidelberg, Germany in October 2017.

<http://www.emblaustralia.org/careers-education/funding-and-grants/short-term-travel-grants-emb>

Koula Diamand is a PhD student at ANU with Ruth Arkell and is the Society's ACT Representative. Koula was awarded one of three PhD poster awards at the International Congress of Developmental Biology meeting in Singapore (June 2017) for her poster entitled: Elevated canonical Wnt signalling disrupts development of the embryonic midline and may underlie cases of ZIC3-associated Heterotaxy.



Cynthia Jensen from the Department of Anatomy at the University of Auckland was invited to participate in a half-day symposium held at the State Institute of Cancer Research, University of Sao Paulo, Brazil, and sponsored by the Brazilian Society for Cell Biology. She spoke on "The history of the International Federation for Cell Biology and its Congresses – 40 years". Her trip was sponsored by the International Federation for Cell Biology. The other speaker was Professor Lewis Joel Greene from Faculty of Medicine of Ribeirão Preto, University of Sao Paulo, who gave an extremely interesting and informative account of his time at Rockefeller University as a student of George Palade and Keith Porter during the exciting days at the beginning of cell biology. The photograph was taken on the roof of the Cancer Institute, overlooking the city of Sao Paulo. From left to right: Mrs Elletra Greene, Lewis Joel Green (seated), Roger Chammas (Research Director of the Cancer Institute), Hernandes Carvalho (Secretary-General, International Federation for Cell Biology), Patricia Gama (Brazilian Society for Cell Biology), Cynthia Jensen, Sergio Schenkman (Editor-in-Chief, Cell Biology International) and Maria Christina Werneck Avellar.



Publications

Mural lymphatic endothelial cells regulate meningeal angiogenesis in the zebrafish.

Bower NI, Koltowska K, Pichol-Thievend C, Virshup I, Paterson S, Lagendijk AK, Wang W, Lindsey BW, Bent SJ, Baek S, Rondon-Galeano M, Hurley DG, Mochizuki N, Simons C, Francois M, Wells CA, Kaslin J, Hogan BM.

Nature Neuroscience. 2017 20(6):774-783.

<https://www.nature.com/neuro/journal/vaop/ncurrent/full/nn.4558.html>

<https://www.uq.edu.au/news/article/2017/04/scientists-surprised-discover-lymphatic-scavenger-brain-cells>

GluA1 subunit ubiquitination mediates amyloid- β -induced loss of surface α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) receptors.

Guntupalli S, Jang SE, Zhu T, Huganir RL, Widagdo J, Anggono V.

Journal of Biological Chemistry. 2017 292:8186-8194.

<http://www.jbc.org/content/292/20/8186.full?sid=7977ffbe-a380-43fd-83ce-61f71947a567>

The activity-induced long non-coding RNA *Meg3* modulates AMPA receptor surface expression in primary cortical neurons.

Tan MC, Widagdo J, Chau YQ, Zhu T, Wong JJ, Cheung A, Anggono V

Frontiers in Cellular Neuroscience. 2017 11, 124.

<http://journal.frontiersin.org/article/10.3389/fncel.2017.00124/full>

The Pu.1 target gene *Zbtb11* regulates neutrophil development through its integrase-like HHCC zinc finger.

Keightley MC, Carradice DP, Layton JE, Pase L, Bertrand JY, Wittig JG, Dakic A, Badrock AP, Cole NJ, Traver D, Nutt SL, McCoey J, Buckle AM, Heath JK, Lieschke GJ.

Nature Communications. 2017 8:14911.

<http://www.nature.com/articles/ncomms14911>

Mutations in *DZIP1L*, which encodes a ciliary transition zone protein, cause autosomal recessive polycystic kidney disease.

Lu H*, Rondón Galeano MC*, Ott E*, Kaeslin G, Kausalya PJ, Kramer C, Ortiz-Brüchle N, Hilger N, Metzis V, Hiersche M, Tay SY, Tunningley R, Vij S, Courtney AD, Whittle B, Wühl E, Vester U, Hartleben B, Neuber S, Frank V, Little, MH, Epting D, Papathanasiou P, Perkins AC, Wright GD, Hunziker W, Gee HY, Otto EA, Zerres K, Hildebrandt F, Roy S, Wicking C* and Bergmann C*

Nature Genetics. 2017 49: 1025-1034.

<https://www.nature.com/ng/journal/v49/n7/full/ng.3871.html>

ANZSCDB Corporate Member News

We would like to thank the following corporate sponsors:

*Promega Australia

<https://www.promega.com.au/support/contact-promega/>

*Australian BioResources

<https://www.abr.org.au/>

*Pakair Cargo Specialists

<https://www.pakair.com.au/>

*Corning Incorporated

<https://www.corning.com/au/en.html>

*NewSpec Pty Ltd.

<http://www.newspect.com.au/>

