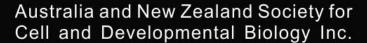
# ANZSCDB





ANZSCDB Newsletter - 28 October 2016

Dear ANZSCDB members,

I am delighted to launch the society's new communication initiative. An email delivered to you, at this stage four times a year, full of Society news and activities. The vision is that communicating in this way will keep all members up to date with Society initiatives, as well as providing a more regular forum for members to share their news. It is envisioned that this enhanced communication will strengthen current ties between members and expand our interconnectedness. It is also great avenue for new members and younger members two showcase themselves.

Although we are excited about changing the way we communicate with members, we are also sad to be leaving behind the much-loved biannual Newsletter. Fiona Wylie was the Editor of the ANZSCDB Newsletter for many years and the member's profiles were an absolute highlight of these. If you have not read all these profiles I really encourage you to do so- they are on the ANZSCDB website. I would like to thank Fiona for being a really important part of our society's communication and history.

Annemiek Beverdam (ANZSCDB Secretary) and Bree Knights (ASN Events) have done a really great job of putting together this first newsletter and thanks go to all of you who contributed content!

I do hope that you enjoy the first ANZSCDB NEWS (we need a better name so please send in your suggestions).

Happy reading!

Sally Dunwoodie

\*To view the 2015/2016 Presidents Report, please click here

#### **Key Dates**

14<sup>th</sup> November 2016: 6<sup>th</sup> ANZSCDB Adelaide Meeting in Adelaide

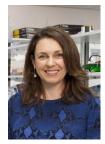
11<sup>th</sup> December 2016: 8<sup>th</sup> Australian Developmental Biology Workshop

30 January – 1 February: Australia and New Zealand Zebrafish Meeting

3-6 April 2017: Hunter Meeting Australia

28 Oct - 1 Nov 2017: 10th General Meeting of the International Proteolysis Society in Canada

#### New ANZSCDB Committee Members (http://www.anzscdb.org/about-us/)



#### A/Prof Natasha Harvey:

Associate Professor Natasha Harvey is an ARC Future Fellow and Head of the Lymphatic Development Laboratory at the Centre for Cancer Biology, UniSA and SA Pathology, Adelaide, Australia. Natasha's work aims to understand how the lymphatic vasculature is constructed during development and how this process "goes wrong" in human lymphatic vessel pathologies. Her work in this arena has been published in leading international journals including *Nature Genetics*, *Blood*, *Development* and *Journal of Clinical Investigation*. Natasha has been a member of the ANZSCDB for 12 years, served

as South Australian ANZSCDB representative from 2011-13 and was recipient of the ANZSCDB Emerging Leader Award in 2013.



#### **Professor David James:**

I am a cell biologist and systems biologist who has had the privilege and good fortune of working with many gifted people who have given me good fortune and an enjoyable career so far. I joined the Charles Perkins Centre at Sydney University several years ago because I saw this as an exciting opportunity to explore new terrain in the area of metabolic disease. We are now just over 2

years in and we are getting there. Our goal is to use interdisciplinary approaches to find unimagined insights into metabolism and how it interacts with the environment. It relies on use of multiple different omics platforms to obtain large amounts of data that describe the underlying principles of biological systems. This is an enormously exciting time.

#### Welcome to our new ANZSCDB State Representatives! (http://www.anzscdb.org/about-us/)



#### Hongjun Shi – NSW:

I am the Senior Postdoctoral Scientist at the Division of Developmental and Stem Cell Biology, Victor Chang Cardiac Research Institute. My research interest is to understand the influence of environmental factors, in particular hypoxia, on embryo development and pathogenesis of birth defects. Recently, I was also involved in the genomic analysis of congenital heart disease in research into the genetic causes of the disease. I am currently characterising the functions of several newly identified

candidate genes during embryonic development.



#### Alex Combes – VIC:

Dr Combes endeavours to understand the genetic and cellular control of kidney development as a model of organ formation and congenital disease. His team are interested in the regulation of nephron progenitor identity and how nephron progenitors dictate kidney size and functional capacity. They take a multidisciplinary approach integrating molecular genetics, quantitative 3D

imaging, genomics, and mathematical modelling. Alex currently holds a DECRA in the Department of Anatomy and Neuroscience, University of Melbourne, and continues to work closely with Professor Melissa Little at the Murdoch Childrens Research Institute.



#### Oliver Rackham – WA:

Associate Professor Oliver Rackham is a Cancer Council WA Research Fellow at the Harry Perkins Institute of Medical Research and School of Chemistry and Biochemistry, The University of Western Australia. His research focuses on using synthetic biology to understand and manipulate gene expression. His team creates unique transcriptomic technologies and mouse models to discover how defective gene expression can result in disease. In addition, they use synthetic biology to build new therapeutics for

mitochondrial diseases and cancer.



#### Sarah Boyle – SA:

I am a post-doctoral researcher working at the Centre for Cancer Biology (an alliance between SA Pathology and the University of South Australia) in Adelaide, SA. I recently completed my Ph.D., which investigated the role of chemokine receptors in breast cancer within the cancer stem cell and various immune cell populations. I am now working with Dr. Michael Samuel trying to uncover the role of the Rho-ROCK signalling pathway in breast cancer and how it creates a pro-

tumourigenic microenvironment.



#### <u>Larisa Haupt – QLD:</u>

Dr Larisa Haupt is a Senior Research Fellow and leads her Neurogenesis and Stem Cell group within the Genomics Research Centre located at the Institute for Health and Biomedical Innovation at QUT. Larisa has worked in the US, Singapore and Australia and has expertise and research interests in cell and molecular biology, in particular the role of the extracellular matrix in mediating cellular events. Work from Larisa and her group support the role of the heparan sulfate proteoglycans in mediating important

cellular events including lineage specification and differentiation in normal and pathological conditions.

#### **ANZSCDB State Representatives who are staying on are:**

NSW - <u>Stuart Fraser</u> ACT: <u>Koula Diamand</u> QLD: <u>Guillermo Gomez</u> VIC: <u>Sebastian Dworkin</u>

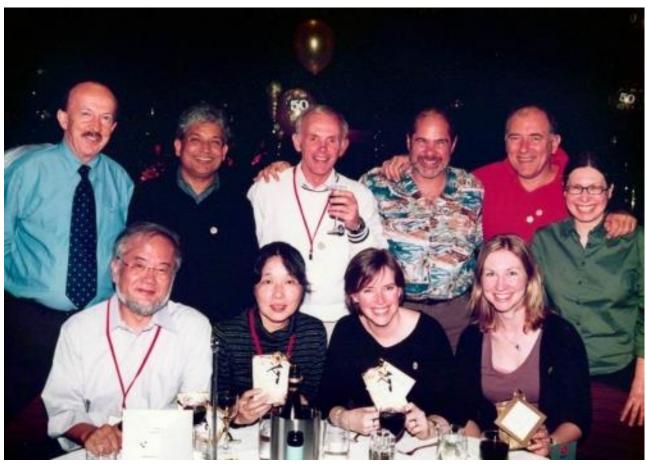
SA: <u>Sarah Boyle</u>
WA: <u>Oliver Rackham</u>
NZ: <u>Caroline Beck</u>

#### **Outgoing ANZSCDB Representatives:**

And a final big thank you to our outgoing ANZSCDB State Representaives Kazu Kikuchi (NSW), Annette Shewan (QLD), Jan Kaslin (VIC), Fiona Pixley (WA), Michael Lardelli (SA) for their fantastic support of the ANZSCDB, and especially for all their efforts in the past two years organising the State Cell and Developmental State Meetings!

#### 2016 ANZSCDB President's Medalist - Professor Sharad Kumar (CCB/University of South Australia)

Sharad has previously been profiled in the <u>ANZSCDB newsletter</u>. So we challenged the SA State Representatives Sarah Boyle and Sophie Wizsniak to find out things that we did not yet already know about him.



You have moved around the world a lot over the course of your career, what advice do you have on staying productive scientifically when moving to new cities or scientific fields?

It is inevitable that moving labs and projects will cause disruptions. It is a trade-off for potentially bigger career gains in the future (provided that is reason for move). I really think that if you are productive in every job, it will carry you through leaner times. Before moving I always ensured that I had completed most experiments for the project, so that I (or the PI) can write up the data at a later date. That way you ensure that you have publications coming while you are busy settling in a new place.

What has been your most memorable scientific discovery, an experimental result that took your breath away?

It is hard to pinpoint one single experiment or discovery as I am easily excited by all new and interesting-looking results (though in recent years I have learnt to temper my enthusiasm and expectations!). In early days of cell death research, most things we did were new and exciting (I could barely wait to get to work most mornings). However, if I really had to pick one, it would have to be the realisation that one of the genes I had cloned a couple of years earlier was one of the first mammalian caspases. This simultaneous made me very excited and terribly nervous, thinking that I may have contributed something very significant to science and that I got scooped before I knew what it was!

You worked in Japan for some time and I've heard you've acquired a taste for Japanese cuisine, do you have a favourite food or cultural experience to share?

I love all kind of everyday Japanese food, with the exception of *natto* (made from soybeans fermented with *Bacillus subtilis*). In Japan preparation/cooking is done primarily to enhance the natural flavours of the food, so it is always fresh and 'simple'. This allows one to actually taste food, and once your tastebuds become trained for that, it is hard going back.

The cultural experience that I really miss (besides universally strong work ethics) is Japanese attention to detail. Whether it is the design of an experiment or a public place, a Zen garden or a ceremony, the customer service in a department store or the way one folds and puts away a futon every morning, you know it will be done meticulously.

Pictured is Sharad at ComBio in 2005 with this years' Nobel prize winner Yoshinori Ohsumi (bottom left) for his discoveries on mechanisms of autophagy, one of Sharad's passions. Who is your pick for the next Nobel prize in 2017?

There will be a Nobel for CRISPR in the coming years- I just hope it goes to the original inventors (half a dozen claim to be deserving). Another one to watch is Jeffery Gordon for gut microbes.

What's the most important aspect of being a good mentor to students and postdocs in your lab? Any tips for other lab heads out there?

I do not think there is a magic formula to be a good mentor. Everyone is different, so how we relate to others is different and this is often based on our personal experiences. As scientists we are rarely trained in managing others, so if we are fortunate enough to have a group, we will usually develop a unique style that suits the size and personalities within a group. That said, it does help to be honest and kind, communicate effectively, think back of the things you wanted from your mentor but were too afraid to ask, keep expectations realistic, ensure that others realise their potential (whatever that might be) through proper training and tools in the art of science and have the freedom to follow their ideas. In tough funding climate and diverse demands on PIs, it is often easy to overlook the needs of others in the lab. In our case, regular meetings and retreats are useful tools for effective communication, and having a small team of experienced hands to help-out is priceless.

#### 2016 ANZSCDB Emerging Leader Awardee – Ben Hogan (IMB, UQ Brisbane)

Interview by Larisa Haupt and Guillermo Gomez, QLD State Representatives: <a href="http://www.anzscdb.org/emerging-leader-award/">http://www.anzscdb.org/emerging-leader-award/</a>



#### Where are you from?

I grew up in a small town in central Victoria called Moonambel. We had one pub and one shop. My family home was (still is) a mud brick house off the power grid and on solar since the '80s. Chickens, goats, rabbits, veggie gardens, no TV, lots of books and the local cricket club - it was a pretty nice way to grow up.

#### How did you get where you are now?

I followed a fairly traditional route to becoming a group leader, undergrad, honours and PhD at Melbourne Uni. I got lucky with my PhD and had a supervisor who invested time and effort in my development (Graham Lieschke) and has continued to support and mentor me. After a 4 year postdoc in the Netherlands, I was offered a position at the IMB. I hadn't been to Brisbane before the job interview but I decided to give it a crack.

#### Who do you admire personally and professionally?

The earliest Drosophila geneticists. Their colleagues must have thought they were nuts: pushing fruit flies and maggots around a dish all day and mapping genes for anything that looked unusual.

## What do you think are two of the key decisions you made that helped you achieve the Emerging Leader award?

Not being cautious with questions and taking risks with the lab's direction. We did a very big forward genetic screen in our founding years, which could have gone differently, but in the end the risk was worth it.

#### What do you like to do when you are not working?

Running, hiking and scuba diving are right up there if I take a break or have the freedom. But most often now it's having some Dad time with my two daughters of 3 and 6, they are great fun.

#### Are you often mistaken for the golfer Ben Hogan?

Certainly not if I'm on a golf course. But I do get a few comments every now and then.

#### What is the worst experiment you have ever done and why?

Taking my daughter to the swimming pool after she'd had a strawberry milkshake, when she had a stomach bug. The results were conclusive.

#### What is your favourite thing about what you do?

That it progresses. Having a job that changes focus year to year and constantly asking new questions in the lab is exciting and motivating.

#### What did you want to be when you were a kid?

A ballerina. My Mum likes to keep reminding me I said this as a 3 year old.

#### If you weren't a scientist, what would you be?

Something more active. Like diving instructor or pub owner.

#### -What's your next biggest challenge?

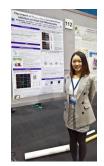
Not going stale or getting comfortable. I think it is important to keep taking risks and asking new, bigger and deeper questions.

#### ANZSCDB ComBio2016 Presentation Award Winners (http://www.anzscdb.org/grants-and-awards/)



Rehan Villani –Toshiya Yamada Early Career Award – Khosrotehrani Lab - UQ: When I attended Combio this year it had been some time since I had been to a meeting with such a broad topic coverage. I have to say that the experience was quite wonderful. The standard of talks was very high and the action packed program meant there was always something on that I really wanted to attend (occasionally more than one). The highlight of my week at Combio was the plenary presentation by Professor Shigeru Kondo, his seminar on Turing

mechanism of skin pattern formation was informative and interested, pure biology. There were many great talks in the concurrent sessions also, such as the presentation by J. Lock on polarity and motion which I found fascinating. I also was very proud to have received the Toshiya Yamada ECR presentation award as I have seen it presented a number of times, and I feel privileged to be among the past winners. Overall, I attended talks from cancer signalling to epigenetic regulation of metabolism, all of which were excellent and overall I really enjoyed my week.



Mengjie Hu — Cell Biology Student Poster Prize - Jans/Bogoyevitch Labs - UniMelb: I enjoyed this year's Combio Brisbane Conference and was impressed by the record numbers of plenary and concurrent symposiums, multidisciplinary presentations, posters and colloquium sessions. One of the most memorable lectures to me is "Deciphering Developmental Dell Death Using Drosophila as a Model" by Professor Sharad Kumar (recipient of The President's Medal), one of the founders of the mammalian cell death system in Australia as well as a strong advocate for the area. I learned that Prof. Kumar has always been a mobile researcher, traveling to different labs around the world, applying various techniques in mammalian cells and Drosophila model to study the

molecular machinery that determines cell apoptosis (programmed self-destruction of cells) and survival. Almost 25 years ago, his research team discovered Nedd2 (Caspase-2) as one of the first mammalian caspase genes with an unexpected role of a tumour suppressor. From then, a number of Nedd genes (such as Nedd4, the founding member of the WW-HECT type of ubiquitin-protein ligase (E3) family; and Nedd8, a ubiquitin-like protein) that are central to the regulation of apoptosis and cell survival have been discovered and characterized in tumour suppression by his laboratory. In the lecture, Prof. Kumar shared some of his most recent findings on a large part of the Drosophila cell death machinery and a number of proteins that regulate the function of Nedd4 ubiquitin ligases. Within an hour, he presented me a journey of a thousand miles in science. I was inspired by his passion, long-standing motivation and perseverance in research. His work is undoubtedly the culmination of many years of hard work and close collaborations with many other scientists around the world.



<u>Daniel Tyler Pederick - David Walsh Student Prize – Thomas Lab - UoAdelaide:</u>

Presenting my work at ComBio 2016 gave me a great opportunity to discuss new ideas with principal investigators and fellow students from both related and unrelated fields. My presentation described the cellular mechanism that underpins a unique form of X-linked epilepsy that only affects females and is caused by mutation of the homotypic adhesion molecule PCDH19. We showed using unique mouse models that PCDH19 WT and PCDH19 mutant cells display striking segregation in the

developing cortex which leads to epileptiform brain activity. My favourite presentation was a plenary lecture by Prof Shigeru Kondo, who spoke about his work in deciphering the mechanism of pattern formation in the skin of zebrafish. Overall ComBio 2016 was a great experience where I was able to expand my networking skills and be exposed to many researchers from different areas of science, something I recommend for any student.

Sabrina Oishi – Keith Dixon Poster Prize in Developmental Biology – Piper Lab - UQ

#### ANZSCDB Combio Travel Bursary Awardees (http://www.anzscdb.org/grants-and-awards/)



### development.

#### Veronica Mendoza-Reinoso – Beverdam lab - UNSW:

ComBio2016 has been my very first experience of a scientific meeting of this scale. Besides enjoying the great opportunity to present my work at the "Transcriptional Programs in Tissue Biology" session, I had the unique chance to receive feedback from experts in my field. My knowledge about state of the art technologies in different research areas has increased considerably and I am impressed about the work that other groups are doing in Australia applying these technologies. Moreover, I was very surprised and pleased to find very young researchers with such successful careers in science, which I find very inspiring and encouraging for my future professional

#### Isabel Hemming – Heng Lab - UWA:



The Brisbane ComBio 2016 conference was my first interstate conference as a Ph.D. student. I enjoyed the wonderful atmosphere that surrounded the four-day event on the south bank of the Brisbane River. The opening plenary lecture was an informative insight into the multitude of possible evolution pathways leading to protein diversification. The range of topics and techniques covered in both the plenary lectures and concurrent symposia was wonderful, and helped to broaden my thinking and possible approaches to my own research projects. I greatly enjoyed my time at

ComBio 2016, hearing about the interesting research being conducted throughout Australian and the field of biology.

#### Reyhan Akhtar – Abud Lab - Monash:



Attending ComBio2016 has been my first inter-state conference experience as an international student studying in Melbourne. 5 days, 50 symposia. Contrary to my expectations ComBio2016 wasn't as intense as I thought it would be, which was great. The conference had diverse themes so I got the opportunity to listen to talks from researchers working in the different fields ranging from (but not limited to) stem cells and regeneration to cancer genomics and plant development. Being a PhD student, this has been an excellent opportunity to network not just with these speakers but

also fellow PhD students. I got the chance to interact and share my PhD experiences with other researchers during poster sessions. I also managed to enjoy the warmth of the Brisbane weather! All in all I would say ComBio2016 has been a wonderful experience for me and has definitely helped building my confidence and broadened my knowledge. I would like to thank ANZSCDB for giving me this opportunity in the form of a travel award to attend ComBio2016 in Brisbane.

#### Bo Yun - Li Lab – Monash:



I was honoured to receive the ANZSCDB travel award to attend ComBio 2016 which was held in Brisbane this year. I started my PhD candidature specialising in medicinal chemistry before eventually finding my true calling in cellular biology, so this was my first experience in attending a cell and molecular biology-focused conference and I loved every minute of it! One of the most difficult things I dealt with at ComBio was deciding where to go; with all the different sessions and symposiums running cocurrently, I ended up running around a bit more than I'd anticipated. The exhibitor's hall also had a lot to experience. There were many familiar brand booths (with

freebies) interspersed with colourful poster entries that adorned the hall. I had a lot of fun during the

session breaks visiting the booths and chatting to other attendees about the science on offer – but also left with some great tips on where to find good coffee in Brisbane! Ultimately, I had a great time at ComBio2016 and would like to thank ANZSDB for the opportunity, as well as my supervisors Prof. Jian Li and Dr. Tony Velkov from Monash University, and collaborators Dr. Damien Hudson, Dr. Paul Kalitsis and Dr. Tao Zhang from Murdoch Childrens Research Institute.

The other ComBio travel award winners were: Mengjie Hu (Jans/Bogoyevitch – UniMelb), Srilakshmi Srinivasan (Clements Lab – QUT), Chieh Yu (Haupt Lab – QUT).

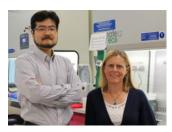
#### **ANZSCDB Member Publications**

- Akladios B., Mendoza-Reinoso V., Samuel MS., Hardeman E., Khosrotehrani K., Key B; Beverdam A. (2016). 'Epidermal YAP2-5SA-ΔC Drives β-Catenin Activation to Promote Keratinocyte Proliferation in the Mouse Skin in vivo'. Accepted for publication in The Journal of Investigative Dermatology.
- Rackham O, Busch JD, Matic S, Siira S, Kuznetsova I, Atanassov I, Ermer JA, Shearwood AJ, Richman TR, Stewart J, Mourier A, Milenkovic D, Larsson NG, Filipovska A. (2016) <u>Hierarchical RNA processing is rate limiting for mitochondrial ribosome assembly</u>. Cell Reports 16(7):1874-90.

Richman TR, Spåhr H, Ermer JA, Davies SMK, Viola HM, Bates KA, Papadimitriou J, Hool LC, Rodger J, Larsson NG, Rackham O, Filipovska A. (2016) <u>Loss of a mitochondrial RNA-binding protein causes late-onset mitochondrial dysfunction in mice.</u> **Nature Communications** 7:11884.

- Kühl I, Miranda M, Posse V, Milenkovic D, Mourier A, Siira SJ, Bonekamp NA, Neumann U, Filipovska A, Polosa PL, Gustafsson CM, Larsson NG. <u>POLRMT regulates the switch between replication primer formation and gene expression of mammalian mtDNA</u>. Sci Adv. 2016 Aug 5;2(8):e1600963.
- Pok Fai Wong, Margaret G. Gall, William W. Bachovchin, Geoffrey W. McCaughan, Fiona M. Keane, Mark D. Gorrell 2016 <u>Neuropeptide Y is a physiological substrate of fibroblast activation protein: enzyme kinetics in blood plasma and expression of Y2R and Y5R in human liver cirrhosis and hepatocellular carcinoma. Peptides 75:80-95.
  </u>
- Yiqian Chen, Margaret G Gall, Hui Zhang, Fiona M Keane, Geoffrey W McCaughan, Denise M Yu, Mark D. Gorrell <u>Dipeptidyl Peptidase 9 Enzymatic Activity Influences the Expression of Neonatal Metabolic Genes</u>. Experimental Cell Research 342(1):72-82.

#### **ANZSCDB Member News:**



Professor Melissa Little, the 2015 ANZSCDB President's Medallist, and Dr Minoru Takasato (MRCI, Melbourne) have won the prestigious 2016 Australian Museum Eureka Prize for Scientific Research for their discovery of how to grow kidney tissue from stem cells. Read all about it here.

#### **ANZSCDB Announcements**

#### **Proposed Changes to Combio Format – HAVE YOUR SAY**

To access the survey, please click <u>here.</u> Please note that all entries are anonymous. The survey will close 30 November.

The ComBio meeting provides an important platform for our members to present and hear about the excellent research conducted locally and abroad, recognizes our high achieving members though the presentation of awards and it also provides excellent networking opportunities for scientists and trade. The ComBio2016 meeting provided all this and more and I congratulate the organizers of this meeting - in particular our ANZSCDB members Joe Rothnagel, Jo Bowles, and Michael Piper, and Sally Jay conferences.

It is however recognized that generalist scientific meetings such as ComBio are under pressure due to a number of factors including the high costs to attend the meeting, the broad nature of the meeting's program, the option of attending many smaller focused meetings, and the relative ease of attending conferences overseas.

Given these issues, a paper was drafted, and discussed by each of the participating societies (ASBMB, ASPS and ANZSCDB) at their respective council meeting and annual general meeting (AGM), held at ComBio.

ComBio will be held in Adelaide in 2017 and in Sydney in 2018. It is proposed that ComBio will then be held every two years. It is considered that this will increase delegate numbers and there is the intention to expand the number of participating societies.

Societies will hold their own annual meeting in alternative years. ANZSCDB needs to consider the format of this annual meeting and in doing so be mindful of issues surrounding conference organization, time of year, location and cost, among others.

At the AGM, the ANZSCDB executive proposed to send out a questionnaire to all ANZSCDB members to gauge the opinion of our membership. We now welcome you to give your input in this important matter, which will help us to shape Combio into a better meeting.

To access the survey, please click <u>here</u>. Please note that all entries are anonymous. The survey will close 30 November.

#### Upcoming Meetings http://www.anzscdb.org/state-meetings/

- 6<sup>th</sup> ANZSCDB Adelaide Meeting Monday 14 November 2016
- 8<sup>th</sup> Australian Developmental Biology Workshop: 11<sup>th</sup> December 2016
- Australia and New Zealand Zebrafish Meeting: 30 January 1 February
- <u>Hunter Meeting:</u> 3-6 April 2017: <u>www.huntermeeting.org.au</u>
- IPS Meeting 2017: 28 Oct 1 Nov 2017: www.IPS2017.org

#### ANZSCDB Corporate Member News <a href="http://www.anzscdb.org/sponsors-3/">http://www.anzscdb.org/sponsors-3/</a>

We would like to thank the following corporate sponsors:

- \*Promega Australia
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#### Do you want to make a contribution to the newsletter?

Please send content to <u>Annemiek Beverdam</u> or <u>Bree Knights</u>
The newsletter will be published approximately every three months
Please ensure submissions are no more than 100 words and factually correct
This newsletter is distributed to all ANZSCDB members via email

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