

# ANZSCDB Newsletter

Australia and New Zealand Society for Cell and Developmental Biology INCORPORATED



Winter 2014



Dear Colleagues,

Welcome to the winter edition of the ANZSCDB Newsletter – well, winter for most of

you anyway. While you wake to the chill of an Australian winter I am enjoying London's summer sunshine and the exciting smorgasbord of science on offer here. In the past few months I have watched with interest from afar the unfolding events in Australia, particularly the impact of the first budget delivered by the Abbott government in May. For science there were positives and negatives. Cuts to CSIRO and ARC herald hard times ahead for basic science. However, on the plus side, the announcement of a new A\$20 billion Medical Research Future Fund is positive, although tinged by the news this would be funded by a controversial \$7 co-contribution for GP visits. Further controversy surrounds the ban on using money from this fund to assist in commercialisation of Australian breakthroughs. Many believe this will result in Australian discoveries being commercialised by

international companies that will ultimately reap the benefits. Of course all of this is dependent on the GP co-payment and other health savings passing through the Senate, which is in no way guaranteed.

Another development of immense interest is the recent flurry of activity around gender equity issues in Australian science. Recently, NHMRC CEO Warwick Anderson, Professor Brian Schmidt Nobel laureate and spokesperson for the Australian Academy of Science, and Greens Senator Adam Bandt all publicly acknowledged the need for change in the way Australia deals with the gender imbalance in science and the exodus of women from science particularly in the child-rearing years. For me it is particularly pleasing to see men joining in this debate and championing the need for change. There has been much discussion around Australia on adopting a charter for gender equity along the lines of the Athena Swan Charter for Women in Science in Britain, whereby joining organisations undertake to acknowledge and address a set of principles aimed at increasing

## President's Report

### Read Up On:

- The President's report
- Member profiles  
- from both sides of the ditch
- Hunter 2014...and what's new in 2015
- Upcoming meetings
- Launch of Ozophagy
- Science meets Parliament
- Paper highlights
- Membership news
- News from the AAS

the representation of women in science. Institutions joining the charter subsequently apply for bronze, silver or gold awards based on demonstration of good practice in addressing the under-representation of women in science. Being currently based in an institute in London that has recently achieved a silver award, I am impressed at how seriously this is taken in the UK, with some funding agencies linking funding eligibility to evidence that a department or institution addresses diversity issues through schemes such as Athena Swan. Any move Australia can make to address these issues will be extremely welcome.

### Members in the spotlight

As in previous newsletters we offer you the chance to get to know two of our members through our member profiles. Later in the newsletter our editor Fiona Wylie chats to Megan Wilson from Otago University. Megan is our NZ representative and has made a great contribution to ANZSCDB through establishment and curation of our Facebook page and twitter account. Also find out what Peter Gunning (UNSW) is up to and what influences have shaped his career.

Our paper highlights page will leave you in no doubt that our members are making high impact contributions to cell and developmental biology on an international scale. We had such a good

response to a call for papers to highlight that we decided to list them all so you can see the quality of the papers our members are publishing.

that the 2014 ANZSCDB President's Medallist is David James, the Leonard P. Ullman Chair in Metabolic Systems Biology at the



President's Medal

### Announcement of Awards

It is a huge pleasure to announce the recipients of this year's two major awards, the President's Medal and the Young Investigator Award (YIA). We are extremely grateful to Sigma for continuing their generous support of the President's Medal and to Zeiss for sponsoring the YIA. These awards are extremely important to ANZSCDB and without the generous support of Sigma and Zeiss they would not be possible.



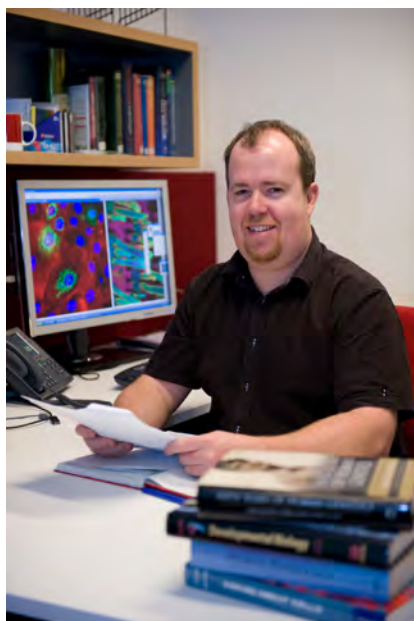
**The President's Medal** is the highest honour bestowed by ANZSCDB and recognises outstanding contributions to cell and developmental biology in Australia and NZ. I am delighted to announce

Charles Perkins Centre and Professor in the School of Molecular Bioscience and Sydney Medical School at The University of Sydney. David's earlier pioneering work on the discovery of the glucose transporter GLUT4 set the stage for a stellar career that has yielded seminal contributions to our understanding of the mechanisms underlying insulin action. David has never shied away from employing the most cutting edge technologies in his research, and recently has established a systems-based proteomics approach to further elucidate the complex mechanisms of insulin action. David will be known to many of you for his service to the promotion of cell biology in Australia over many years. He was highly involved in ANZSCDB during its early days and was instrumental in merging the annual meetings of the three relevant societies to form Combio. David was also heavily involved in the organisation of the Hunter Cellular Biology Meeting and is the current President of the Hunter Cellular Biology

Meeting Inc. Committee. I am sure you will all agree that he is an extremely deserving recipient of the 2014 President's Medal.

### The ANZSCDB Young Investigator Award (YIA)

recognises the up-and-coming leaders in cell and developmental biology in Australia and NZ, and acknowledges their efforts in that difficult period of establishing their own independent research groups. I am extremely pleased to announce that this year's winner is Associate Professor Ian Smyth.



Ian did his PhD with Brandon Wainwright at UQ before taking up post-doc positions initially in Edinburgh with Ian Jackson and subsequently in London with Fiona Watt. He returned to Australia in 2006, this time to Melbourne to establish his own research group in the departments of Biochemistry and Molecular Biology and Anatomy and

Developmental Biology at Monash University. Ian has made major contributions to our understanding of skin and kidney development, primarily using the mouse as a model. He is a mouse geneticist of some renown and an excellent developmental biologist. Ian has been instrumental in establishing some truly state-of-the-art imaging approaches at Monash and his talks are renowned for the most amazing imaging of mouse organogenesis, particularly the kidney. In addition to his scientific achievements Ian has shown notable leadership skills, not least of which were his contributions as the last secretary of ANZSCDB, a position he held for three years rather than the normal two. During that time he oversaw some major re-structuring of ANZSCDB, including the massive move to a new secretariat. This award is appropriate and well-deserved recognition of his scientific and leadership achievements.

We look forward to talks from Ian and David at Combio, and we will learn more about them in our Summer Newsletter.

### Leica International Student Travel Award

Last year our Past-President Peter Currie, in conjunction with Leica, instituted a new student award to assist with international travel. We all know that this is a vital part of a PhD student's education and as supervisors we are invariably heartened by the genuine enthusiasm that

accompanies a student's return from a particularly stimulating conference. However, with increasing funding pressures it is becoming difficult to find the funds to support this important activity and we are therefore extremely grateful to Leica for their support of this new award. In fact, we had so many applications this year (14 in total), all of which were extremely deserving, that we have decided to offer two Leica awards. This year's recipients are Claire Homan from the University of Adelaide and Jordan Follett from the University of Queensland. Claire will attend the International Society for Stem Cell Research 13th Annual Meeting in Stockholm and Jordan the Gordon Research Conference on Neurobiology of Brain Disorders. We wish them well on their travels and hope they return with renewed enthusiasm for their PhD research! We also look forward to hearing about their adventures in the Summer Newsletter.

### Combio 2014

Combio is the annual meeting of the society and this year it will be held in Canberra from September 28 to October 2. The organising committee is based in Sydney, but the current refurbishment of the Sydney Convention Centre necessitated a move to Canberra. The head of the overall organising committee is our own Edna Hardeman, and the cell and developmental biology streams have been organised by ANZSCDB

representatives Kat Gaus and Richard Harvey. The program is looking great – please see the ad later in this newsletter for details of the plenary speakers who this year include Nobel Laureate John Gurdon, Jennifer Lippincott-Schwartz, Marino Zerial, Aki Kusumi, Kateri-Moore and Tom Rando. I hope to see many of you in Canberra.

One of the highlights of Combio over recent years has been the ANZSCDB Dinner held on the Tuesday night and I encourage all those attending Combio to come along. Watch out for email announcements about the venue and how to sign up.

As announced earlier, another ANZSCDB initiative this year will be a session on "Making Cell and Developmental Biology Attractive in the Current Funding Climate". The aim of this session is to discuss what we as a group can do to tackle some of the issues facing disciplines like ours that are often seen as focusing on more basic scientific questions. I hope that this will promote discussion and lead to the formulation of action points that we can begin to address.

The session will be run during the lunchtime break of Combio on Monday 29th September. Please come along if you are at Combio.

As always, the AGM will be held prior to the Conference Dinner on Thursday 30th September - it will be good to see as many members as possible there so please show your support by coming along and having your say.

### Membership

Membership continues to be an issue for the society. We need a core membership base to raise awareness of our disciplines. Also, apart from our revenue from Combio, we rely heavily on our membership subscriptions to support our activities such as State cell and biology days, conference support and student travel bursaries. Over this financial year we have seen a marked increase in requests for this type of support, presumably reflecting the pinch in funding we are all feeling. Increasing our membership base will definitely help us support these types of worthwhile efforts. Related to this we are very happy to welcome our newest corporate member

BioTools. The support of our corporate members is much valued and we hope you will continue to support them all.

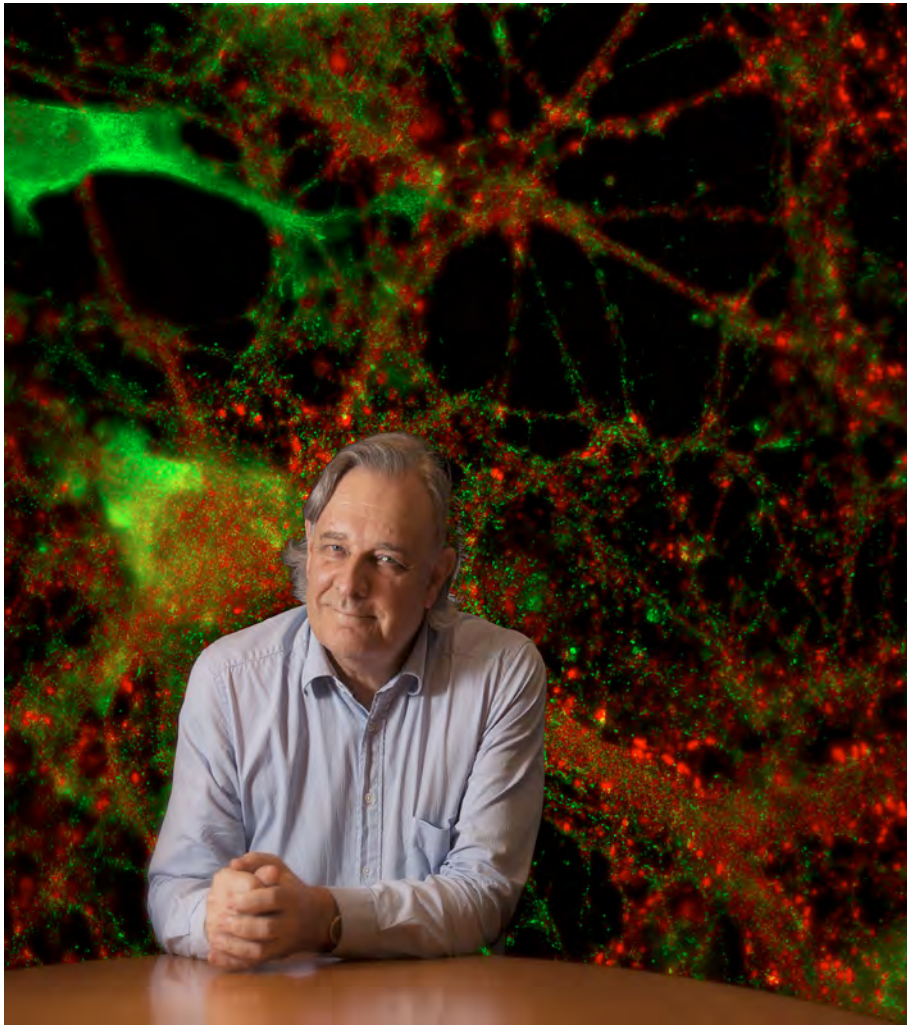
Finally I would like to thank the current executive Jo Bowles (Secretary), Rohan Teasdale (Treasurer), Sally Dunwoodie (President-Elect) and Peter Currie (Past-President) for their help and support over the past 9 months since I took over as president. In particular, Jo and Rohan have been great helping out while I have been based in London on sabbatical and answering all my emails at odd hours! Thanks also to Fiona Wylie who has once again done a great job putting this newsletter together and to the state reps, who have helped out with organising





# Peter Gunning

## - outlaw scientist and Col's mate



### ***Could you give me a snapshot of your current research?***

The focus of my lab is very simple – we have a view of how you build the actin cytoskeleton and we study this because the actin cytoskeleton is involved in almost every cellular process. We really want to work out the principles governing how it is built and how it is used. The big questions we have been interested in are morphogenesis and cancer, but the reality is that finding this out opens the door to almost anything you can think of in biology...the scope of it is so big!

Currently, we concentrate on two big issues...

The first is based on asking if it is really true that the vast majority of actin filaments in our body are homopolymers of a single actin and a single tropomyosin and do these molecules

specify what the filament can do. This is a principle question, that is, is the underlying principle of the actin cytoskeleton that the filaments themselves, when they are built, are predisposed to a particular type of functional outcome? The textbook answer is that all actin filaments are naive, and then they have things done to them to get a specific function or outcome...like building the building and then working out what to do with it. But our view, based on two decades of research, is sort of diametrically opposed to that – the building is carefully designed from the start.

The funny thing is that I have spent about 20 years of my life pursuing this view, which really for most of that time has been completely heretical...and then about 2 weeks ago a paper came out in *Current Biology* (Johnson et al., *Curr Biol* 24,

1525-30) that I think pretty much finishes the debate! It describes some beautiful work in yeast that confirms the mechanism of specifying actin filament function and provides the mechanistic gap that up until now has led people to remain sceptical. So, it's the standard story...it took a model system and dissecting the biology genetically to make it unequivocally clear how it works. They demonstrated that the nucleators/drivers of the formation of actin filaments in yeast determine what tropomyosin goes onto the filament and that then determines what myosin interacts with the filament and then ultimately what the filament does. So from the very beginning, the filament can be customised according to the job it needs to do. This is, as I said, the opposite of the dogma in the textbooks and the field.

Second, we are focused on the development of drugs to treat childhood cancer. So, in the past 8 years, we have developed drugs that

disable the major type of actin filament found in neuroblastoma and, as it turns out, pretty much all cancer cells. Targeting the actin of cancer cells has always seemed like a good idea, but historically such attempts have been a research graveyard. Instead, we have targeted the tropomyosin component of the actin filaments you find in the childhood cancer, neuroblastoma...and this has turned out to be a much better idea. We are hoping to see the first lead drug entering Phase I trials next year...it is all incredibly exciting.

I think the quick success on this was because we were lucky in that we chose to go after what we recognised as the weakness in the structure of the polymer...and it worked really well for building a model and doing virtual screening of compounds, which has really come a long way in this field – so, all the initial discovery of the lead compounds was done in silico as virtual screening.

### ***What was the basic path to becoming Professor Peter Gunning?***

When I was very young, my mother gave me a book on the human body and I was just blown away by the design principles of the whole thing. And that pretty much laid the foundation my ongoing interest in finding out how you build different kinds of cells and tissues...how do you actually make a body work?

The next step was in my first year of science at Monash Uni – I was doing maths, physics, chemistry...no biology at all – and my father took me to visit a friend of his who had gone back to uni to do biochemistry. And the outcome of that discussion was me also enrolling in Biochemistry 203 and about halfway through the subject, I went “that’s it – that is what I am going to do!!” Very simple, actually. That was in 1970.

I stayed on at Monash and did my PhD in neurobiology, looking at development and repair of the nervous system. I then went to Stanford and really the thing that mattered happened a couple of years after I got there. This was when gene cloning was really just starting to become a serious exercise, and because I had some experience, I was recruited to a gene-cloning

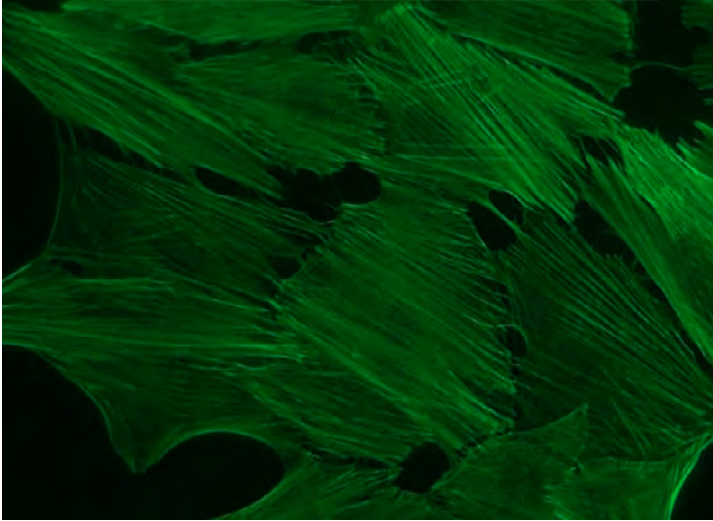
lab that had initially started to clone human actins. And this was a gateway for me for the rest of my career path, because it was not just “let’s clone the actin protein”, but really “let’s clone the whole contractile apparatus of human muscle” and with that we started to develop the tools to genetically manipulate the entire actin cytoskeleton.

I started that project on April Fool's Day 1980, which does make me laugh looking back because at the time, the whole project was a bit of a gamble. Literally almost everything we did in that project was new and uncharted. The aim really was to isolate the genes and work out the transcriptional regulators of muscle genes that direct myogenesis. We were really still at the stage of asking how gene regulation works at the level of the cell and sarcomere – does everything happen together or is it graded with time, especially as the different muscle isoforms started to appear. And looking back, really everything I have done since then is take a molecular cell biology approach to study different aspects of morphogenesis.

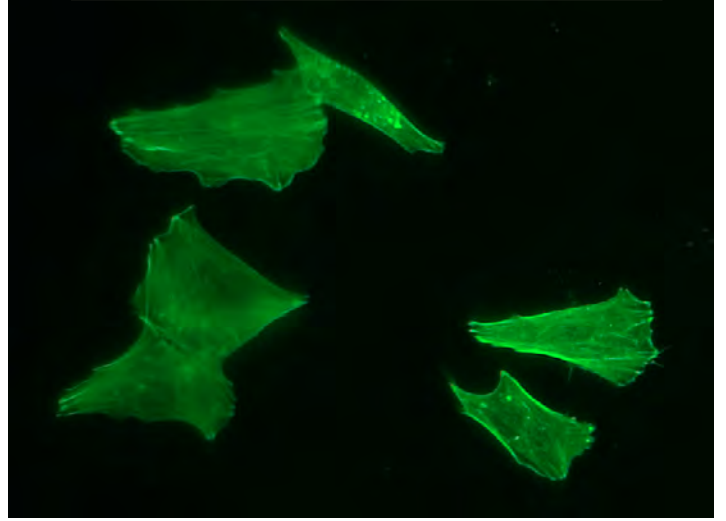
My next major move was back to Australia and the CMRI in Sydney. There, I took all these tools I had accumulated by this time and started manipulating the actin cytoskeleton in myoblasts and in neuroblastoma cells to ask: so how is morphogenesis regulated at a structural level... how do you build the structures of a cell...what does it take...what matters??

One of the key things about coming back to Australia and setting up at the CMRI was that we could do certain experiments looking at isoform functions that never would have been funded in the United States, mainly because of a general disinterest. At that time there was a view that isoforms were just genetic noise rather than being instructive variant forms of proteins... like ‘fall-back’ options for the cell. So in the early 1990s we did the first experiments manipulating the actin cytoskeleton using all of the possible components, and realised that many of the isoforms conveyed fundamentally different information to the cell about how it should build structures. It then became clear that it was not just the actins, but also the tropomyosins, and that very different kinds of architectures resulted from the cell using different isoforms –

Actin cytoskeleton of control neuroblastoma cells



...and cells treated with anti-tropomyosin compound



each contained specific information predisposed to convey particular organisation properties. The next thing that really mattered was in 1998 when I went into the kids hospital to work on childhood cancer, and that was really the next pivotal point because it gave us a focus on doing something translational.

**What do you see as your biggest research achievement(s) to date?**

Demonstrating for the first time that isoforms are functionally unique – a big thing that, as I said, was very controversial. It just happened to be done with the muscle proteins because they were some of the first genes isolated... but of course the question was much broader and people were starting to look at isoforms in all contexts of cellular function. It seems so trivial now, but in the early 90s this was highly controversial and very difficult to do.

And of course, the childhood cancer drugs, and particularly from a research point of view, because there was no real precedent for them – we designed the first drugs that disable a polymeric coiled-coil structure.

Being introduced to a bus coach driver called Colin at the kids hospital (subject of an Australian Story, March 2014). Col used to drive past the hospital all the time and see lots of kids who were bald and obviously having chemotherapy...and one day he came in and asked if he could do something constructive. So, he started taking these kids on tours to give them a break from the endless chemo

and to get out of the wards...and as a result, he got into fundraising for research. Then, he was essentially attached to me, and became that person who went out of his way to fundraise for the laboratory...and it was really that fundraising that opened the door to developing the cancer drugs because the idea of them was pretty much unfundable. Nobody... and I mean nobody would contemplate it as a practical thing to do, so Col's fundraising really bankrolled us doing the drug development for childhood cancer – it truly is an amazing story.

**Who inspires or has inspired you in science and in life?**

There are two books that stand out for me and really blew my mind. The first is called 'Phage and the Origins of Molecular Biology', published in 1966. It is built around a discussion of Max Dulbruck and the phage group, who really laid the foundations for understanding genes. What is amazing about this book is the sense you get of the kind of collaborative effort it took and environment used to put together the gene theory and lay the foundations for doing experimental molecular biology...before there was a 'molecular biology'.

The other is by Ernst Mayr, called 'The Growth of Biological Thought: Diversity, Evolution and Inheritance' – what I liked about it is the point he makes that you can only truly understand anything in biology by understanding it in its evolutionary context because biology is ultimately the product of evolution.



Also, a movie by Tarkovsky called 'Andrei Rublev' about a 15th century Russian icon painter. I think movies resonate for someone when they are at a particular point in their life when they are really perceptive to the theme, and I saw this at a film festival when I was doing my PhD. It is about how the human spirit can rise above what was just a dreadful environmental situation and achieve something that is true to what they believe in. It was really cool.

Finally, a quote from Pink Floyd – again, it was from a period of time when I was very receptive to the idea expressed. From 'Wish You Were Here' by Roger Waters. "Did you exchange a walk-on part in the war for a lead role in a cage", meaning do you follow what you want to be or do you sell that out for the trappings of success that ultimately constrain what you can do.

**What excites you in cell and developmental biology at the moment?**

If you told me 30 years ago that in my lifetime we would get to a point at which we genuinely understand the principles of building the different kinds of cells that exist and how you integrate that into the structure of tissue, I would have said...maybe not in my lifetime, and now it is absolutely clear that we are living in the middle of it. It is extraordinary and it is such an amazing time to be a cell and developmental biologist.

**What role do you see the ANZSCDB playing in your research in 2014 and beyond, particularly given that you are currently President of the ASBMB?**

One thing I find funny is that when I started doing science I thought of myself as a biologist, but then I became sub-classified as a biochemist during my PhD. And then we all went through this period of specialisation and everyone defined themselves in highly specialised terms. Now I find it impossible again to categorise myself as anything but a biologist trying to understand some of the processes.

So, I think of meetings like ComBio as incredibly important for bringing together societies coming from all different points of view and recognising

that we are all part of the same thing. In this context, I see ANZSCDB's role as the voice of cell and developmental biologists, but also having a bigger role in the organisation of ComBio and bringing us back to the principles of biology rather than splitting us into groups.

**What advice would you give people embarking on a career in cell and developmental biology today?**

It is very simple. The first thing is ask a big question and the other is following the three key elements of success, which are focus, focus and focus.

Also, I would like to stress the importance of great collaborators and talented people that work with you. Great collaborations enrich you on a lot of different levels, and I can think of many in my career that have just been fantastic. The most important of course is a previous President of ANZSCDB, Edna Hardeman. Surround yourself with smart people, always a good move!

**What do you do to relax?**

I love to cook. I also collect wine and I like to drink it – sort of integrates with the food thing.

**What would you be doing if you were not doing research?**

I would be an archaeologist.

**Likes and dislikes in life/science?**

Likes:

Great music – life without it is inconceivable  
Great friends  
People with passion and vision

Dislikes:

Selfishness and self obsession – in life and science...it makes me cranky.  
Being cranky  
Bad wine – life is way too short.

**Your epitaph?**

Outlaw scientist and proud of it!



# Megan Wilson - development from across the ditch

## **How would you summarise your current research?**

My lab's general theme is studying the control of gene expression during development and regeneration using mammalian and other vertebrate models, as well as how these pathways evolve. We do this in several systems.

In one, we use mouse models to understand more about childhood idiopathic disorders where there is little known about the underlying biology - examples we study include scoliosis and club foot. There are some transcription factors associated with these human disorders so we are using techniques such as ChIP- Sequencing and RNA-Seq to study the role of these factors during normal mouse development, particularly that of the limbs and spine.

Secondly, we study sex differences and gene expression in the brain and early gonad, using techniques such as RNA polymerase pausing and RNA-seq.

Thirdly, we are studying the evolution of developmental pathways and regeneration by comparing chordate models such as sea squirts and mice. Characterising differences in the timing and location of expression across vertebrates could help to explain the changes in morphology or generation of lineage-specific traits during evolution.

## **What was the path to becoming Dr Megan Wilson?**

I was born in Dunedin where I grew up with two brothers. My youngest brother had a developmental disorder (Tuberous Sclerosis Complex) and I became a primary care giver for him along with my parents due to behavioural problems that often required more than one person.

Outside of this, I always enjoyed science at high school (biology, chemistry, maths) as well as history and the classics. In fact, I thought about doing anthropology, but soon found biological science to be my preferred topic of study - there was always something new to read and discover.

I did a BSc Hons in Biochemistry at the University of Otago - the first in my family to go to university - supporting myself by working at the



IHC, an organisation that cared for children and teenagers with disabilities.

During my undergrad studies I was always keen to read about molecular biology and developed a strong interest in the regulation of gene expression. To develop this further, I took up a NZ Health Research Council PhD scholarship to study the function of sigma factors from the opportunistic pathogen *Pseudomonas aeruginosa*, with Prof. Iain Lamont in the Biochemistry Dept at Otago Uni. These factors are gene-regulating proteins required for the production of a number of virulence factors and I looked into how their gene expression is regulated.

My PhD work was mainly biochemistry, but during that time and particularly from doing journal clubs, I became really interested in developmental biology. This grew mainly out of my personal interest in the disease my brother had. I wanted to understand the biology of Tuberous Sclerosis Complex and what goes wrong during development in that disease situation - particularly, why symptoms varied so much between individuals. This information quest led me to papers about developmental biology and developed a fascination into how the whole thing just comes together and works properly...or not!

Whilst Otago now has a vibrant community in developmental biology, with many groups working on everything from zebrafish to mice, at the time when I finished my PhD there was very little such research going on at Otago. So, I took up a post-doc position with Prof. Peter Koopman at the IMB in Brisbane, and stayed there for 4 years working on sex determination and Sox genes.

I returned to University of Otago in 2005, to start a research position with Assoc. Prof. Peter Dearden, in the Biochemistry Dept looking at the evolution of developmental pathways (axis specification and segmentation) using the honeybee as a model.

Then in late 2011, I took up a position as Lecturer in the Anatomy Department and established my own research group. I do enjoy the contact with students – especially watching them develop into scientists – although it gets quite busy teaching, especially in the second half of my year. I teach first year through to fourth year science, and I spend quite a lot of time trying to come up with new and different ways to engage the students during lectures – I really enjoy that. For example I have found that making clay models of a lot of the things I am trying to explain gets them interested especially because it gives them something they can actually pick up and look at. In the lab, I also have some really good students who are generating some really exciting data.

### **What were the milestone steps on that path and why?**

Getting to switch research directions to developmental biology, thanks to Koops offering me the post-doc based on my molecular biology and biochemistry background. This meant that I could pursue a career in developmental biology.

Getting my first grants as a principal investigator – this was my first step to becoming an independent researcher. It was a fellowship for early-career researchers from the Royal Society of New Zealand Marsden Fund that is given out particularly to fund blue-sky and basic science research. It provided salary plus lab costs...and it allowed me to make that leap to independence.

Every publication – getting the science out there.

### **What is the hardest thing about setting up as an independent researcher?**

The time it takes to get started especially setting up new projects from scratch...getting enough preliminary data for grant applications to get the money to afford to do the high-impact

experiments. There is often no money provided when you set up for technical support meaning doing much of the experimental work yourself (as well as maintaining a teaching load, service roles etc). Often you have to act as PI (writing, funding, ideas), lecturer/teacher, RA (ordering, making up solutions) and post-doc (doing the experiments)...all in one day.

### **What advice would you give people embarking on a career in cell and developmental biology?**

Plan early on, take any opportunities that come your way and be seen! For example, never turn down a chance to speak at a meeting, conference or seminar elsewhere, and apply for grants as PI, no matter how small. Also, publish and publish!!



### **Who inspires or has inspired you in science and in life?**

My brother – it was through reading up on the biology of his disorder that I developed an interest in developmental biology. Also, the families caring for children with developmental disabilities – it involves a lifetime of caring and often there is little support available. Most families want to learn as much as they can about the biology of the disorder – and want to do anything they can to help with research into the condition. They are very generous. In general, I also find conferences inspiring. I always come back with lots of new ideas or inspiration for current project directions. Now that I'm a lecturer, I also get heaps of ideas for lecture material.

### **The good and bad things about doing your research in NZ?**

The good:-  
Lifestyle and quality of life – being only 10 minutes drive to work and having a huge

## Member profile

backyard complete with chickens and views of the countryside and ocean.

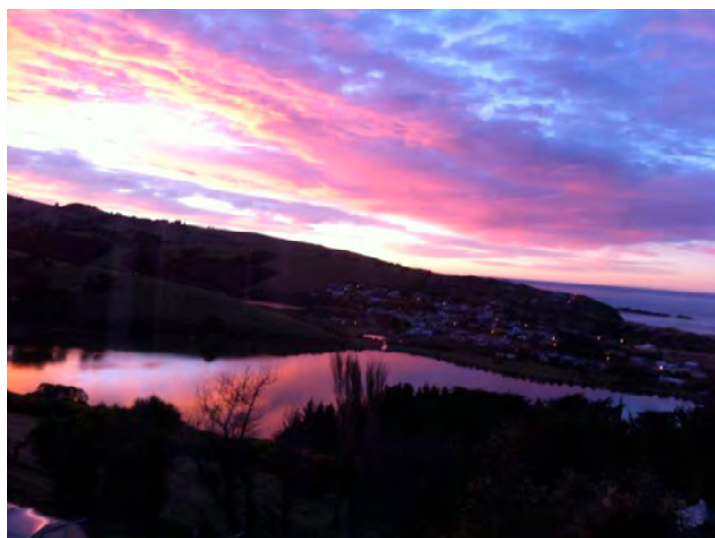
Being part of a strong science community doing diverse, world-recognised research, with excellent research support and facilities.

Fantastic enthusiastic research students (post-grads) and the fun of living in a university city.

The bad:-

The distance! Being so far away from many of the meetings, I can only afford to attend one international meeting a year.

Also, the funding opportunities are limited in a smaller country and economy.



### **What is your burning question in science right now?**

It is difficult to think of only one question! For me it would be how complex developmental pathways integrate together to make a complete organism.

### **Where do you see these sorts of breakthroughs coming from?**

Major advances in live imaging would be a key thing – being able to mark cells and molecules during developmental processes. Also, techniques like ChIP sequencing will be very important, especially in allowing us to see where sequences are binding across whole genomes in particular tissues and from there being able to work out more about the biology – how multiple signals are integrated to make a functional tissue/animal. We could then generate hypotheses based on that and go back into our biological models to test them. At the moment we're doing some of this using mice and sea squirts embryos. The results should enable us to make a bigger leap from the molecular biology data than we ever could before.

### **How do you see the ANZSCDB playing a role in your science?**

The support that the society provides for local meetings is very important. These events are vital for meeting other scientists in the field and developing new projects/collaborations. It is especially important for early-career researchers and those establishing a group.

Promote interaction with other researchers in cell and developmental biology

### **What would you do if you were not in research?**

I would be a wine maker, egg (hen) farmer or an axolotl breeder.



### **What do you do to relax?**

I like to spend time with my family (husband James, 7-year-old Lucas and 4-year-old Damien). Playing with the kids. Exercise (gym), although not making it there as much as I used to. Need to make it a priority more to find time to exercise, good stress relief and thinking time. Watching Movies and my secret love of Doctor Who.

### **Preferred epitaph?**

I told you I was sick.



# Hunter Meeting

Convened by Sarah Russell (Peter MacCallum Cancer Institute, NSW)

March 25-28, 2014

The Sebel-Kirkton Park, Hunter Valley, NSW, Australia

The Hunter meeting traditionally provides an opportunity to see the best cell and developmental biology research from Australia and overseas, and this year was no exception. We heard fabulous talks from overseas speakers and superb science from both established and early-career Australian investigators. As always, a mark of the enthusiasm for the meeting was the consistent engagement of all speakers in a diverse range of fields. Whatever the topic, the room was packed, and question time for all talks involved a dynamic, interactive and supportive dialogue. The poster sessions and trade displays were equally vibrant (and well lubricated with Hunter Valley wines). The rain poured down for much of the meeting, so the usual chats in the sun were converted to sessions in the leather couches of the main building.

The meeting began with a half-day imaging workshop, ably organized by Fred Meunier and Doug Brooks. We heard about a broad range of cutting edge technologies, from single molecule analysis to multiphoton endoscopy and MRI. Several talks by commercial imaging providers informed us of the latest in new microscopy developments and highlighted our appreciation of their indispensable sponsorship of the meeting.



We thank again here the major sponsors: European Molecular Biology Organization, Australia and New Zealand Society for Cell and Developmental Biology, Leica, Scitech, Andor, Zeiss, Genentech, and A\*STAR.

Our three keynote speakers excelled. On the first evening, Ira Melman gave the Keith Stanley Lecture on cancer immunotherapy. He mentioned at the beginning of the talk that his excitement regarding the new developments in cancer immunotherapy had caused him to reduce his oversight at Genentech from all oncology research to just immune-related oncology, and then illustrated the wisdom of that unorthodox decision with descriptions of the fantastic progress being made in recent clinical trials of cancer immunotherapies. Freddy Radtke gave the EMBO Plenary Lecture – an exploration of how Notch signaling regulates development and disease. His use of a breathtaking array of different model systems and experimental approaches to address one major research question was an inspiration. The Hunter Plenary Lecture, sponsored by the ANZSCDB, was given by Joan Brugge. Joan presented an overview of her work on breast cancer models, the use of 3D organotypic models and the development of pre-clinical models to examine adaptive resistance in matrix-attached cancer cells. Her talk crystalized how excellence in fundamental research, combined with a clear eye on possibilities for translation, enables clinical opportunities.

Other sessions at the meeting covered the integration of cell biology and signaling, cell-cell interactions in morphogenesis and wound healing, cell fate determination, imaging immune responses and cell migration, epigenetic programming in development, tracing cells during development and disease, and signaling hubs in cancer. One of the most inspiring things about the Hunter meeting is the enthusiasm with which attendees engage with work outside their normal field, and this year was no exception. Discussions in all the sessions ranged across diverse model organisms, tissue systems, diseases and approaches. We were also delighted at the outstanding presentations and science from our younger researchers. As is usual at the meeting, we got to know some exciting new investigators, caught up with old friends, learnt about some great science, and after a grueling grant submission phase for many, were reminded of how good it is to be a cell and developmental biologist in Australia.

JULY, 2014





# 15TH HUNTER CELL MEETING

## INCL. 8TH IMAGING WORKSHOP

Afternoons Wednesday and Thursday  
Live cell demonstrations

March 17 - 20, 2015  
Crowne Plaza Hunter Valley  
NSW Australia



## INVITED SPEAKERS

Fred Bard IMCB

Jean Gruenberg UNIGE

Carlos Ibanez KI

Doug Lauffenburger MIT

Jennifer Lippincott-Schwartz NIH

Daniel Messerschmidt IMCB

Jodi Nunnari UC Davis

Olivier Pourquie HMS

## CONFERENCE THEMES

- Organelle Focus – Mitochondria
- Intracellular Transport
- Regeneration
- Neuronal Development and Degeneration
- Organisation of Cell Signalling and Gene Expression
- Therapeutics and Disease Models
- Cellular Polarity and Tissue Organisation
- Cell Based Screens
- Biological Systems

*Convenor:*  
Rohan Teasdale

*co-Convenor:*  
Patrick Humbert

Secretariat Hunter Meetings  
MTCi | PO Box 717, Caringbah  
Sydney, NSW Australia  
huntermeeting@mtci.com.au  
02 9524 1799



**Abstract submission for consideration for a talk or poster and  
Early-bird registration close: December 7th, 2014**

<http://huntermeeting.mtci.com.au/>



**The Hunter Meetings**

Australia's Premier Systems and Cell Meetings  
Monday March 16 - Friday March 20, 2015 ~ Hunter Valley, Pokolbin NSW Australia



## *The 2015 Hunter Meeting(s) – Revitalised*

Changes are underway to ensure that the next Hunter Meeting you attend will be a bigger and better event. The major change in 2015 will be introduction of the 1st Hunter Systems Meeting, which will focus on the science of biological systems and associated enabling technologies. This meeting will be held on the 16th & 17th March, 2015 before the 15th Hunter Cell Meeting on the 17-20th March, 2015. The meetings will also be relocating to the Crowne Plaza Hunter Valley Resort, which will accommodate all participants on site, while still retaining the spectacular backdrop and the relaxing atmosphere associated with the Hunter Valley.

For those new to the Hunter Meetings, they are well known for the excellent science presented and for providing an ideal networking opportunity in one of Australia's premium wine-growing districts. I recently had the chance to reflect on the impact my attendance at the 1st Hunter Meeting back in 2000 had on my career as a newly returned post-doctoral scientist. That meeting helped to create my national network of colleagues, collaborators and friends – a network that has continued to expand with each Hunter meeting I have attended.

The 2015 program is developing with 10 high profile international speakers confirmed and over 50 national presenters to be invited. If you would like to be considered for a presentation please submit an abstract when registering. Scientists and students at all levels are encouraged to attend the Hunter meetings.

Full details about the meeting are available at <http://hcbm.mtci.com.au/>

Hope to see you at next year's meetings.

**Rohan Teasdale,**

**Convenor 1st Hunter Systems & 15th Hunter Cell meetings, March 16-20, 2015**



March 16 - 17, 2015  
Crowne Plaza Hunter Valley  
NSW Australia

# 1ST HUNTER SYSTEMS MEETING

Monday, March 16 - Tuesday, March 17, 2015

## INVITED SPEAKERS

Fred Bard IMCB

Charles Boone TORONTO

Doug Lauffenburger MIT

Jill MesirinOV BROAD/MIT

## CONFERENCE THEMES

- Proteomics & Protein Networks
- Computational Biology, Modelling and Enabling Technologies
- Systems approaches to chronic and infectious diseases
- Human Variation
- Cell Based Screens
- Biological Systems

Convenor:

Rohan Teasdale

co-Convenor:

Patrick Humbert

[huntermeeting.mtci.com.au/](http://huntermeeting.mtci.com.au/)

**Abstract submission** for consideration for a talk or poster *and*  
**Close of Early-bird registration: *December 7th, 2014***



**The Hunter Meetings**

Australia's Premier Systems and Cell Meetings  
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Secretariat Hunter Meetings  
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Sydney, NSW Australia  
[huntermeeting@mtci.com.au](mailto:huntermeeting@mtci.com.au) | 02 9524 1799

# Ozophagy - new kid on the block

Donna Denton (University of SA)

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The first Australian meeting of the autophagy community "Ozophagy, autophagy and pathways of protein degradation" was held on 7th of February 2014 as a satellite to the 39th Lorne Conference on Protein Structure and Function. This one day multidisciplinary meeting was held at Bio21, Melbourne and was well attended with over 60 registrants including students, postdoctoral fellows and senior researchers. The program included two high profile international speakers, Sharon Tooze from the London Research Institute, UK, and Ivan Dikic from Goethe University, Germany.

Paul Gleeson (University of Melbourne) opened the symposium and provided a historical perspective of the first description of "autophagy" in 1963 by Christian de Duve. This was followed by the first plenary presentation by Sharon Tooze whose talk provided great insight into the early molecular events involved in autophagy induction, illustrating the wealth of information generated from cell biology studies investigating the subcellular localization of autophagy proteins.

There was an impressive selection of National invited speakers included James Harris from Monash University "Autophagy as a regulator of inflammatory cytokines", Siok-Keen Tey from QIMR Berghofer Medical Research Institute "Autophagy mediates TAP-independent presentation of endogenous virus epitopes", Sharad Kumar from University of South Australia "Transcriptional control of autophagic cell death in Drosophila", Stan Sidhu from University of Sydney "MicroRNA regulation of autophagy in medullary thyroid cancer", Oded Kleifeld from Monash University "Protease Proteomics-tools to study proteases and their substrates", Yeliz Boglev from Monash University "OTP1-A novel open reading frame involved in yeast mitophagy", Julie Atkin from La Trobe University "Disruption to optineurin and C9ORF72 function in motor neuron disease" and Rod Devenish from Monash University "A Burkholderia pseudomallei protein that induces host cell autophagy?". The presentations illustrated the role of autophagy in disease settings and the use of model systems to

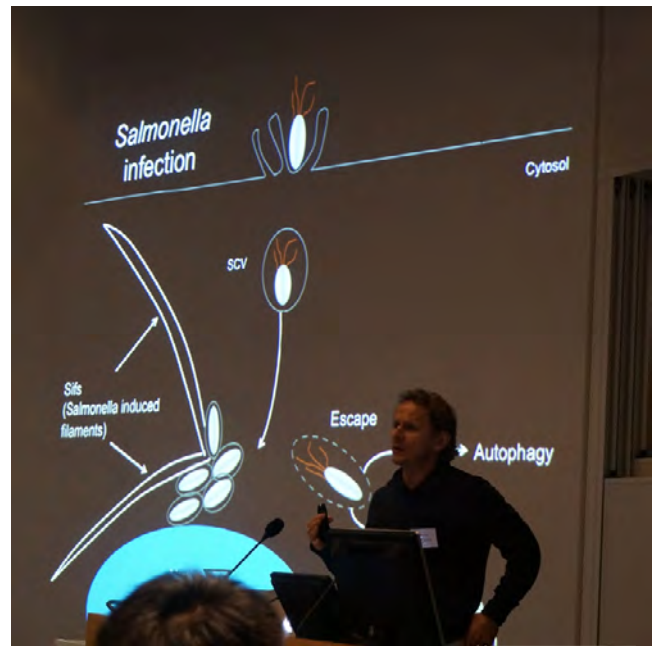


understand the molecular mechanisms and regulation of autophagy. A constant theme running through the program was the complex roles of autophagy during normal development and in disease progression.

Exceptional presentations were made by a number of postdoctoral fellows and PhD students selected from submitted abstracts. The students included Matthew Eramo from Monash University describing the skeletal muscle role of the inositol polyphosphate 5-phosphatase, SKIP, in promoting autophagy, Lucie Leveque from QIMR Berghofer Medical Research Institute describing how autophagy is required for hematopoietic stem cell function and G-CSF mobilization, Avnika Ruparelia from Monash University who told us about autophagy and its role in the mechanisms of disease in BAG3-related myofibrillar myopathy and Laura Osellame from La Trobe University who discussed autophagy in Neuropathic Gaucher Disease. Fuelling controversy about the role of BCL-2 family members in autophagy, Lisa Linqvist from Walter and Eliza Hall Institute of Medical Research revealed that in the absence of Bax and Bak, Bcl2, BclxL and Mcl1 are not major regulators of autophagy.

The poster presentations revealed the extensive range of autophagy research activities from model organism to disease, and the day finished off with a superb plenary lecture from Ivan Dikic describing the role of autophagy in limiting endoplasmic reticulum expansion. Overall, the meeting provided a great opportunity to hear about the exciting research in the field of autophagy and other pathways of protein degradation. It provided a forum for autophagy researchers to interact and build networks that will hopefully facilitate future collaborations. Many thanks must go to our sponsors for their support of the meeting: ANZSCDB, Autophagy Landes Bioscience, QIMR Berghofer Medical Research Institute, Bio21 institute, The University of Melbourne and CSL, and Millenium Science. Finally, thanks to all the participants for their excellent presentations making it a stimulating day.

We look forward to seeing you at the next Ozophagy symposium.



Ivan Dikic



Sharon Tooze

Organising Committee: Justine Mintern (University of Melbourne), Mark Prescott (Monash University), Kelli McDonald (QIMR Berghofer Medical Research Institute) & Donna Denton (University of South Australia).



# ComBio2014

National Convention Centre, Canberra, ACT **28 September to 2 October 2014**

Extended Poster Abstract Deadlines can be viewed at: [www.asbmb.org.au/combio2014/abstracts.html](http://www.asbmb.org.au/combio2014/abstracts.html)



## Themes of the conference will include:

- Plant Biology
- Plants and Global Change
- Cell Biology
- Developmental Biology, Stem Cells & Regeneration
- Genome Biology & Bioinformatics
- Signaling
- Protein Structure, Function & Proteomics
- Education

## Overseas Plenary Speakers

Confirmed Overseas Plenary Speakers at this time:

- **Eva Benkova** Institute of Science and Technology, Austria
- **John Blenis** Meyer Cancer Center at Weill Cornell Medical College, New York, USA
- **Susan Buchanan** National Institutes of Health, Bethesda, USA
- **Xiao-Ya Chen** Chinese Academy of Sciences, China
- **John Gurdon** The Wellcome Trust/Cancer Research UK Gurdon Institute, University of Cambridge, UK
- **Jim Kadonaga** University of California, San Diego, USA
- **Aki Kusumi** Kyoto University, Japan
- **Jennifer Lippincott-Schwartz** National Institutes of Health, Bethesda, USA
- **Bill Lucas** University of California, Davis, USA
- **Steve McKnight** UT Southwestern, Texas, USA
- **Kateri Moore** Mount Sinai School of Medicine, NY, USA
- **Tom Rando** Stanford University, USA
- **Alfred Singer** National Institutes of Health, Bethesda, USA
- **Mikiko Siomi** Keio University School of Medicine, Japan
- **Uwe Sonnewald** Universität Erlangen-Nürnberg, Germany
- **Linda Van Aelst** Cold Spring Harbor Laboratory, NY, USA
- **Joy Ward** University of Kansas, USA
- **Marino Zerial** Max Planck Institute of Molecular Cell Biology and Genomics, Germany

### Incorporating the annual meetings of:

- Australian Society for Biochemistry and Molecular Biology
- Australian Society of Plant Scientists
- Australia and New Zealand Society for Cell and Developmental Biology

### Further information

#### Convenor/Conference Chair:

**Edna Hardeman:**

[e.hardeman@unsw.edu.au](mailto:e.hardeman@unsw.edu.au)

#### Deputy Chair:

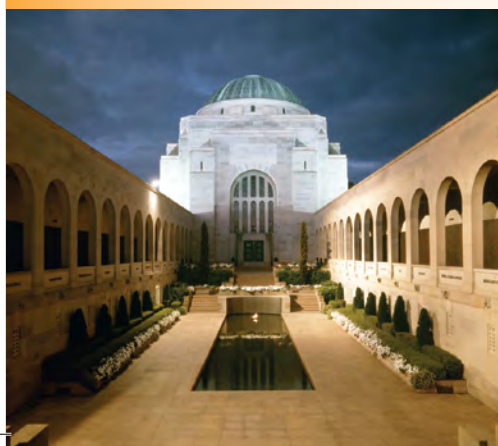
**Ulrike Mathesius:**

[ulrike.mathesius@anu.edu.au](mailto:ulrike.mathesius@anu.edu.au)

#### Registration/Exhibition:

**Sally Jay:**

[combio@asbmb.org.au](mailto:combio@asbmb.org.au)



[www.asbmb.org.au/combio2014](http://www.asbmb.org.au/combio2014)



# 7th Australian Developmental Biology Workshop

Tangalooma Island Resort, Moreton Island, QLD, Australia  
12th-15th November 2014

**Robb Krumlauf**

**Sally Dunwoodie**



**Thomas Lecuit - EMBO Plenary Lecture**



**Mary Mullins**

**Phil Crosier**



The ADBW provides attendees with an opportunity to advance their knowledge of Developmental Biology in an intense, highly personalised meeting. In-depth plenary research talks by high profile international and national speakers, will be combined with round-table discussions of experimental strategies, model systems and career issues. A mix of students, postdocs and lab leaders will be chosen on the basis of their interest in the field, track record and potential benefit.

For more information see the website <http://adbw.imb.uq.edu.au/>

Applications addressing the selection criteria (see website) should be emailed to: [adbw@imb.uq.edu.au](mailto:adbw@imb.uq.edu.au)

Applications close on 1st August 2014.

Organising Committee: Melissa Little, Ben Hogan, Ian Smyth, Edwina McGlenn.

Sponsored by: EMBO, Zeiss, ANZSCDB Inc, Tecniplast, ARMI, IMB University of Queensland & Monash University.



We make it visible.



**IMB** Institute for Molecular Bioscience



**MONASH** University  
Department of Anatomy and Developmental Biology





# Reproduction and Developmental biology satellite meeting Queenstown Research week 2014

August 28-29<sup>th</sup> 2014, Rydges Hotel, Queenstown, New Zealand

Invited speakers include:

Prof. Joel Rothman (University of Auckland/UCSB)

Dr Anne Voss (WEHI)

Dr Michael Piper (University of Queensland)

Prof. Neil Gemmell (University of Otago)

Prof. Andrew Shelling (University of Auckland)

Dr Matthew Naylor (University of Sydney)

Dr Annemiek Beverdam (University of NSW)

**Sessions include: Reproduction, Infertility, Fate determination, Organ development, Human disease and cancer, Neurodevelopment, Stem cells, germ cells and pluripotency. Student speaker and poster prizes on offer thanks to Australia and New Zealand Society for Cellular and Developmental Biology (ANZSCDB) and Genetics Otago**

For a further details and registration go to <http://www.qmb.org.nz/>

# Science Meets Parliament, Canberra, 2014

**Jo Bowles (Institute for  
Molecular Bioscience, Qld)**

On March 17th and 18th this year I attended the 14th “Science Meets Parliament” (SmP) in Canberra as the ANZSCDB representative. This event is organised each year by Science and Technology Australia (STA), which was formed in 1985 to lobby on behalf of scientists – currently more than 68,000 are represented. This year 200 scientists and more than half (130) of the federal parliamentarians took part in SmP. The aims of SmP are for scientists to learn more about politics, policymaking and the media and to get Parliamentarians and scientists talking together and, hopefully, breaking down the cultural barriers that exist between the two groups.

The first day we were at Gandel Hall, at the National Gallery of Australia, for an address by the President of STA, Dr Ross Smith and STA’s CEO, Catriona Jackson. The Hon Bill Shorten, Leader of the Opposition (in green St Pat’s day tie), gave a surprisingly good speech encouraging scientists to use perhaps 1% of their time to engage with the political system. Afterwards he was mobbed by a journalist pack outside, perhaps leading to a change of heart from the Prime Minister whose people contacted STA saying that he would meet, the next day, with the best and brightest (no, I didn’t make the cut).

The PM had a captive audience



That day we enjoyed sessions including ‘How journalists work and how to help them make your science into news’, ‘The art of the perfect political meeting’ and ‘Getting our science out of the lab’ – each of these forums were informative and entertaining.



Dinner was held in the Great Hall in Parliament house. This was a brilliant night, hosted by the wonderful Robyn Williams AM of Radio National fame (The Science Show and Ockham’s Razor) and an official National Treasure. Speakers included The Hon Ian Macfarlane MP (who claimed to be our ‘Science Minister’ but is actually the Minister for Industry - a portfolio that includes science given the absence of a dedicated Federal Minister for Science) and The Hon Bill Shorten MP. The Keynote Address was given by Professor Christine Bennett, AO, Dean, School of Medicine, Sydney, The University of Notre Dame, Australia.

Notably, the dinner was used to re-launch the cross-party Parliamentary Friends of Science group (currently 90 members) – an initiative started in 2012 that aims to ensure that science underpins policy and informs political debate. The launch was done by co-founders and co-chairs

Liberal MP Mrs Karen Andrews MP (BEng) and Labor MP The Hon Richard Marles (BSc).

On day 2 a breakfast forum was held in Parliament House, featuring Professor Aiden Byrne, CEO of the ARC. When asked to comment on the large amount of work involved for researchers in reviewing

grants he suggested, pointedly, that if only ‘well-developed’ grants were submitted the workload would greatly diminish.

In small groups we then went to meet our assigned Minister, Shadow Minister, Member or Senator – mine was Mrs Jane Prentice, Liberal member for Ryan, the electorate in which UQ is placed. Mrs Prentice is very interested in UQ, though possibly not so interested in science. She was very personable, although didn’t respond to a follow-up email invitation to visit UQ’s Institute for Molecular Bioscience.



The Hon Ian McFarlane (Minister for Industry) at dinner



The Hon Kim Carr MP (previously the Science Minister and now the Shadow Minister for Higher Education, Research, Innovation and Industry and Shadow Minister Assisting the Leader for Science) spoke to us as delegates came and went throughout the morning attending their assigned meetings. He made the point that, although we as a race are now at our most technologically savvy, the level of scientific literacy in the population as a whole may well be at its lowest. This allows the expansion of 'anti-science', perhaps most obviously with respect to climate change and vaccine take-up. He encouraged us to ride out the political cycle because at some point, government encouragement of science will return.

The Hon Kim Carr kept us entertained before and after MP meetings



I was really excited to be going to the National Press Club for an address by Professor Ian Chubb AC, Chief Scientist of Australia. The venue was smaller than expected, the food better than expected – not time to savour it though, one has to wolf it down as quickly as possible so that no clinking is heard whilst the speech is televised. Happily we were allowed to continue drinking the excellent wine (no slurping though) To my disappointment it seems that only the press gets to ask questions! I guess that's why they call it the 'Press Club'?



Our Chief Scientist Ian Chubb fielding questions at the Press Club lunch flanked by STA President Ross Smith

Professor Ian Chubb delivered a speech entitled "Australian Science: Without it we'd be in trouble!" He started out by telling us we were up against it, with a recent survey finding that just 39% of Australians thought that the benefits of science outweigh the risks. We nearly choked on our delicious duck confit. Having cleverly won our attention he emphasised the need for education of the public so that they can understand the difference between scientific evidence and the doubts sown by vested interest groups in the community. He also made the point that support for science isn't something that can just be turned on and off according to the whim or the emergency of the moment. We need "evidence built upon evidence built upon evidence that leads to conclusions that lead to applications". The 'fuel' for technological growth is new knowledge. Without it, we will never make the leaps that we need to make; our leaps will be shuffles – small, incremental and not often detectable in a reasonable timeframe. He said that it would be unwise for all researchers to be sitting around deep in scholarly thought, communicating with each other but with little communication with the communities that support them – but that some researchers

should be doing just that. The problem is to find the balance. Chubb had some concern about diminishing real funding levels, quoting Paul Nurse – "cutting funding for science during an economic downturn is like burning the seed-corn, it will only damage our economic recovery and future sustainable growth". His greater worry, however, was in regard to the dwindling numbers of school students taking up science and the effect this will have on our workforce in years to come. He thinks we need a strategic, possibly incentive-based, approach to ensure a balance in study choices that might bear some relationship to future workforce needs, including in the areas of research and development.

We then wizzed back to Parliament House for Question Time in the Public Gallery, House of Reps. It was amazing - complete chaos and some very casual behaviour going on including long private conversations on the backbench, compulsive use of technology (obviously their phones aren't confiscated) and lots of wandering in and out during proceedings. My representative, the newly elected Terri Butler (member for Griffith, replacing Kevin Rudd) was front and centre, taking notes and looking thoughtful and intelligent



- I was pleased. Our conference gatherings seem organised, collegial, respectful and productive by comparison.

At the end of the day Adam Bandt MP, Deputy Leader of The Greens (and spokesperson for Science and Research) made a surprise launch of the Respect Research initiative (at the end of meeting drinks). Hopefully you have ‘signed the pledge’ (as I encouraged you to do on 20 March!). The aim is to protect research from Budget cuts and grow public support for research. Today (19 June 2014) there are 18,794 signatures, just short of the 20,000 target. If you haven’t done this yet please sign up (<http://www.respectresearch.com.au/>). On the strength of more than 10,000 signatures the Greens raised the issue of science funding in the House of Reps on March 27 in the leadup to the budget. Obviously ‘maintain public funding for all areas of research’ didn’t eventuate in the May budget. Let’s see if other aims such as ‘back our researchers, scientists and educators by providing secure career pathways and more certain funding arrangements’ and ‘lift Australia’s total spending on research and development to 3% of GDP’ are taken up...



Photo acknowledgement: “Image credit: Lorna Sim / Science & Technology Australia”

# Member Publications

Here we celebrate just some of the great work being published by our members. Highlights include a recent *Developmental Cell* paper resulting from the combined efforts of the laboratories of Melissa Little (The University of Queensland) and Ian Smyth (Monash University) who joined forces to document the highly dynamic development of the mouse kidney in exquisite quantitative and visually stunning detail. This highly significant piece of work will no doubt serve as a template for the analysis of the morphogenesis of other organs, as well as providing a framework for assessing the affects of genetic and environmental insults on kidney development. Joint first author Alex Combes is also an ANZSCDB member. Other papers in *Science* (Andrew Brooks - The University of Queensland), *Nature Cell Biology* (Alpha Yap, Guillermo Gomez, Rob Parton - The University of Queensland), *Blood* (Evan Ingley - The University of Western Australia). *PNAS* (Joan Heath - WEHI; Graham Lieschke - ARMI; Michael Lardelli- University of Adelaide) and others, show that our members continue to make high impact contributions at an international level.

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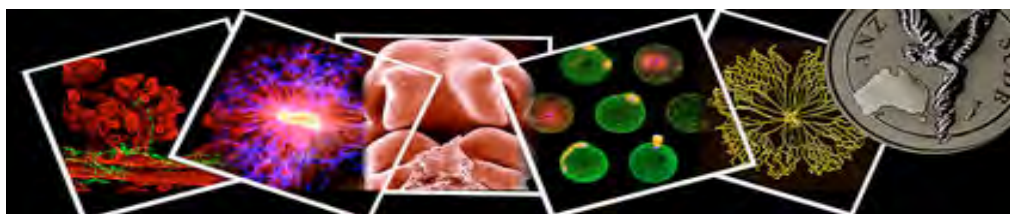
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e: tanja.albers@biotools.com.au

#### South & Western Australia

Diane O'Handley  
m: 0412 700 101  
e: diane@biotools.com.au



# Membership News



Kieran Harvey, former ANZSCDB Treasurer and Young Investigator Award recipient in 2009, received the prestigious Gottschalk medal for outstanding research in the medical sciences for 2014 from the Australian Academy of Science



Gottschalk Medal

Associate Professor Kieran Harvey's research findings are important for understanding species diversity and development, and are directly relevant to human diseases such as cancer. Organ size-control is a fundamental aspect of biology and varies greatly among animals. Signalling networks that control organ size are only beginning to be unravelled. Foremost among them is the recently discovered Hippo pathway. Greater knowledge of size control will potentially have a huge impact on human cancer and degenerative diseases, and provide fertile ground for therapeutic interventions. Associate Professor Harvey was an integral member of the team that discovered the Hippo pathway. He was also the first to show that the Hippo pathway is evolutionarily conserved, and that it is mutated in human cancer. More recently, Associate Professor Harvey's laboratory discovered that the Hippo pathway controls organ regeneration. [AAS website]



Associate Professor Kieran F. Harvey  
Peter MacCallum Cancer Centre  
Cancer Research Division

*The Gottschalk medal recognises outstanding research in the medical sciences by researchers up to 15 years post-PhD in the calendar year of nomination.*

# Membership News

**ANZSCDB student's image from 2013 Woods Hole MBL Embryology course chosen for prestigious journal cover.**

Kathryn McClelland, a PhD student at the Institute for Molecular Bioscience in Brisbane wrote a report for the 2013 summer newsletter about her course at the Woods Hole course.

Now an image she produced there (together with fellow students Nathan Kenny and Sophie Miller) has been voted onto the cover of *Development*. Kathryn is understandably very excited and is grateful to all her voters!!

**Cover: A squid (*Loligo pealeii*) embryo stained for acetylated tubulin (red) and serotonin (green), and with DAPI (blue, nuclei). The image was taken using a Zeiss LSM 700 confocal microscope and was chosen by readers of the Node (<http://thenode.biologists.com>).**



# ANZSCDB FYI

## Report from the Australian Academy of Science National Committee for Cellular and Developmental Biology.

Dear ANZSCDB Members,

I wrote previously in this forum to introduce you to a new National Committee (NC) of the Australian Academy of Science (AAS) - the National Committee for Cellular and Developmental Biology. The Academy NCs are discipline-specific working groups of senior Australian scientists and early-mid career researchers (EMCR) who can respond to the needs of the AAS, and develop work plans that promote their specific disciplines nationally and internationally. They sit between the AAS and discipline-specific societies. A key function of the NCs therefore is to connect the AAS with such societies in a way that enables a two-way flow of information and expertise. On the one hand, the AAS can draw on the expertise held within societies when needed, for example, in formulating position papers to present to Government, or responding to the community's need for information and informed opinion. Conversely, the NCs link directly to societies through membership on those committees (on a rotating basis). Therefore, there is a link directly back to society Executive Committees, and societies can provide input into the workings of the NCs.

The NC for Cellular and Developmental Biology is one of three newly configured NCs that redress the imbalance in representation of the biological sciences within the NC structure. As noted previously, our current committee comprises Richard Harvey (member AAS, Chair), Peter Currie (ANZSCDB), Marie Bogoyevitch (ASBMB), Moira O'Bryan (Society for Reproductive Biology), Christine Beveridge (Australian Society of Plant Scientists), Martin Pera (Australian Society of Stem Cell Research/ Stem Cells Australia) and Benjamin Kile (EMCR). Alpha Yap will also join this NC in due course representing ANZSCDB (replacing Peter Currie), as will Natasha Harvey, as an EMCRC and representing the Australian Vascular Biology Society.

Our activities over the last months have been rather muted due to grant writing activities. However, we had our first teleconference in late November 2013, where we discussed committee membership, Terms of Reference and other

administrative issues, and initiated a dialogue with AAS staff focused on NC activities. We also committed to the necessary society outreach activities that will include establishing channels of communication through newsletter reports such as this one, and appropriate web-links.

I am happy to report that we have secured Sir John Gurdon as the Keynote speaker at ComBio2014 (28th Sept-2nd Oct) and that he has also agreed to give a lecture at the Shine Dome on 27th Sept 2014, hosted by the AAS. A formal letter of invitation has been forwarded by AAS President Suzanne Cory. This is a great opportunity for both the lay and scientifically literate public to get a glimpse into the mind and achievements of a Nobel laureate. We also plan to engage the media and policy arms of the AAS in working with Stem Cells Australia and other bodies to raise awareness of the proliferation of bogus stem cell therapies in Australia and abroad.

I will report briefly here on two meetings that I participated in recently aimed at setting high-end agendas for the NCs. I participated in a teleconference with some of the new NC Chairs along with Andrew Holmes (AAS Foreign Secretary) and Nancy Prichard (AAS International Programs) on 4th Dec 2013, and also in a face-to-face meeting of all NC Chairs (or their delegates) on 25th March 2014 with the AAS executive (including President Suzanne Cory, Marilyn Renfree - Secretary, Biological Sciences, and Chennupati Jadadish - Secretary, Physical Sciences). The latter meeting in particular helped forge connections between NCs with common interests and overlapping society representation, and raise awareness of two important activities of the AAS and NCs. The first relates to linkages with international societies and unions, including the International Council for Science (ICSU/ ICS), a non-governmental organization with a global membership of 120 scientific bodies or unions representing 140 countries, and other discipline-specific umbrella organisations. The AAS maintains membership in a number of such bodies, including the International Union of Biochemistry and Molecular Biology, and International Union of Biological Sciences, and sees this as an important component of its international program, seeking to have a voice in setting international science policy



through voting membership on committees and involvement in large-scale projects such as International Polar Year, International Geophysical Year and Future Earth, and schemes that promote science in the developing world. Bruce McKeller (AAS former Secretary – Physical Sciences) has been involved recently in an external review of the ICSU and gave a report. In truth, the profile of the ICSU within the biological sciences is low (although this is being addressed through the review). Furthermore, I sense that while some 370 Australian scientists sit on international committees and commissions of international unions, activity amongst our biological societies appear to be either non-existent or low, and not generally perceived to be of significant value to scientific and society life in Australia. However, our NC will undertake a more formal evaluation of these links and explore ways to maintain and strengthen the ones that matter the most to us.

The other main issue discussed at the NC Chairs meeting was the value of discipline-specific Decadal Plans. Such plans represent a major undertaking, but can be a major force in shaping government opinion and science policy. They are designed to lay down a vision for the needs of specific disciplines into the future that can be used by government and other agencies such as the media to shape policy. They could cover, for example, infrastructure, technology development, international connections, education of a literate workforce, public expectations, issues of ethics and society etc. Many NCs have

taken up the challenge of producing Decadal Plans over the years, mostly in the physical sciences. Our initial impressions were that this might not be appropriate in the biological and biomedical science sectors due in part the fast evolving and mercurial nature of our disciplines and the appearance of other reports such as the McKeon Review from time to time. This is obviously an important issue for this NC and we will continue to discuss and debate this at a high level over the coming months. I will report further on these issues in subsequent bulletins.

I hope this has been informative. We of course welcome comment and feedback from our society membership and executive. You can find more about the Australian Academy of Science and its workings and committees, including Terms of Reference of National Committees and minutes on the 2014 NC Chairs meeting, at

<http://www.science.org.au/>

On behalf of the NC for Cellular and Developmental Biology,

**Richard P Harvey (Chair)**

**Victor Chang Cardiac Research Institute,  
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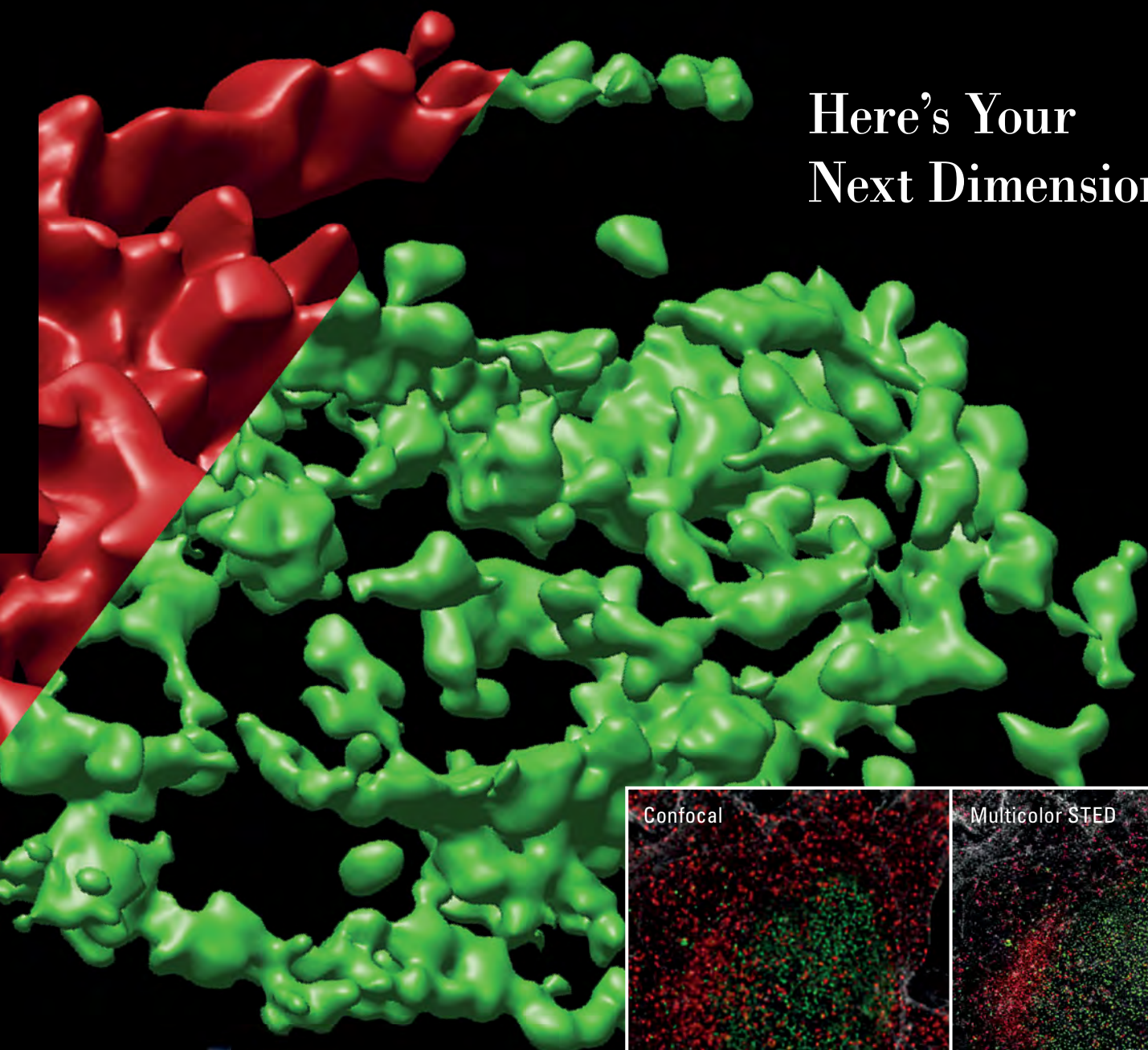
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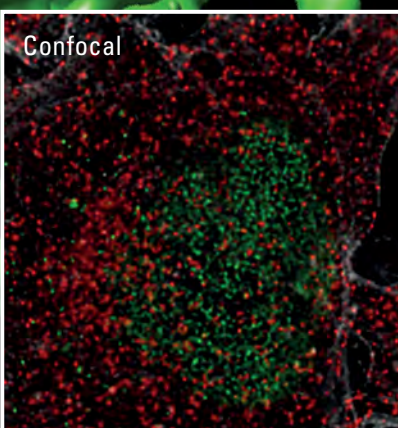
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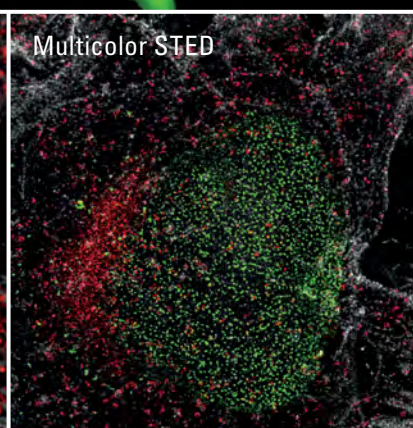
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