

ANZSCDB Newsletter

Australia and New Zealand Society for Cell and Developmental Biology INCORPORATED



December 2011



A word of thanks

I want to begin this report by formally thanking my predecessor Edna Hardeman for her hard work and dedication to the role of

president of the ANZSCDB over the last three years. It is fair to say that Edna's dedication to the role has been extraordinary and she has poured her heart and soul into the role. She sought, and was granted, a three year term instead of the two years normally afforded to the president in order to complete a number of the reforms that she has sought to undertake. Edna leaves the society in a more structured and organized manner and has sought throughout her term to place the society on a more professional footing. During Edna's term we have seen a complete overhaul of the Societies web site, an increased financial contribution to the State ANZSCDB meetings and a rejuvenation of our State and NZ representatives, the formation of the ANZSCDB Council and the redefinition of the roles of individuals on the executive. We are grateful for all your efforts

Edna, you're a class act and the society is much better off for all your hard work and dedication.

State and NZ Chapter Activities

The state and NZ chapter activities continue to grow under the program of reform initiated by the previous president. There has been a conscious effort to use the State and NZ representatives as a major mechanism to expand the activities of the society. The increased funding for the yearly state meetings has allowed the invitation of interstate speakers which has proved such a draw card for these meetings. Currently we have stand alone meetings now in 4 states: Victoria, NSW, Queensland and South Australia. We urge all members to attend and present at these local meetings. The activities of the Victorian State meeting have been particularly impressive, as has the standard of presentation of post docs and students. Improving and supporting these meetings will be a clear priority of the new executive. The key objective of these meetings is to foster a community feel for our members locally. Our thanks to the State reps who drive

President's Report

Read Up On:

ComBio 2011

Profiles on Robert Parton and Eldon Ball

Notifications of Meetings in 2012

Reports on Meetings held in the Last Half of 2011

Regional activities from Australia and New Zealand

Members News

these initiatives.

President's Medal and Young Investigator Awards



President's Medal

At this year's Combio, the Society's official Annual meeting, we awarded our two top honours: the President's medal and the Young Investigator Award. This year's President's medal was awarded to Rob Parton, Institute for Molecular Bioscience, University of Queensland for his seminal findings into the role of Caveolae in cellular processes. Rob's talk was a tour de force of cell biological analyses of caveolae structure and function, focusing on the imaging techniques for which he is world renowned. Rob received his award from Kathryn Carey from Sigma Bioscience who continue to sponsor our top award, and we remain very grateful for their contribution to this award. Congratulations again to Rob. The ANZSCDB Young Investigator Award recognises our up-and-coming leaders, and this year's award was made to Dr Dagmar Wilhelm, also of the Institute for Molecular Bioscience. For her research into determination and gonad development from the angle of gene regulation by noncoding RNAs. Dagmar's productivity in her short career is remarkable and her talk illustrated the determination and effort required in these early phases of an independent career. We wish her all the best moving forward. We hope the YIA will draw attention to the achievements of our best and brightest and provide a bit of a leg up in the tough funding milieu that we all face. We are grateful to Zeiss Australia for their continuing support of our young scientists in sponsoring this award.

COMBIO 2011

This year's COMBIO was held in Cairns, at

the Cairns convention centre. Although the numbers were inevitably down due to the cost associated with travel to Cairns, and the lack of a local brigade of attending members the program was exceptional. Those who did make the journey were rewarded with a dizzying array of international speakers as well high quality presentations from our local members. Although ANZSCDB is one of the smaller societies at COMBIO, the quality of the programme organized by our members is always commented on by members of the other societies that attend the meeting. This year's ANZSCDB directed component of COMBIO was organized by Queensland and we wish to thank Carol Wicking and Rohan Teasdale for their efforts with the exceptional programme. The venue was excellent and the meeting went off without a hitch in the beautiful sunshine of North Queensland. International speakers sponsored by the society included: Hiroshi Ohno (Riken, Yokohama Institute), Dave Drubin (Berkeley), Andreas Nagy (Toronto) Matt Scott (Stanford) and Beatrix Fuller (Stanford). This meeting remains the best place to experience quality international speakers in Developmental and Cell Biology in Australia and the programme of the other societies adds depth to the meeting programme. The talk of Nobel Laureate Roger Tsien, co-discover of green fluorescent protein, was an example of the "added value" that the COMBIO format can bring, which was a fascinating talk that spanned all the interests of the societies attending.

COMBIO 2012

Next year's COMBIO will be in Adelaide, Adelaide Convention Centre 23 - 27 September 2012 and the confirmed international speakers look amazing. Paul Thomas, Sharad Kumar and Yeesim Khew-Goodall will be looking after the Developmental and Cell Biology program so thanks to you all for all of your hard work. Speakers confirmed for the meeting so far include:

- Sean B Carroll - University of Wisconsin, USA

- Raymond J. Deshaies - Howard Hughes Medical Institute, California Institute of Technology, USA
- Richard Dixon - Samuel Roberts Noble Foundation, Ardmore, OK, USA
- Seth Grant - Sanger Institute, UK
- James Hurley - National Institutes of Health, Bethesda, USA
- Michael Karin - University of California San Diego, La Jolla, USA
- Robin Lovell-Badge - National Institute for Medical Research, London, UK
- Chris Marshall - Institute of Cancer research, London, UK
- Anne Osbourne - John Innes Centre, Norwich, UK
- Peter Reich - University of Minnesota, USA
- Dale Sanders - John Innes Centre, Norwich, UK
- John D Scott - Howard Hughes Medical Institute, University of Washington, Seattle, USA

I think the programme speaks for itself and that is likely this will be one of the best COMBIO programmes ever. I invite you all to join us in Adelaide in September next year!

The ANZSCDB Executive

This last year saw an experiment initiated by the previous president to offset the terms of the President and the Treasurer and Secretary. This meant that Kieran Harvey (Treasurer) and Ian Smyth (Secretary) joined the executive mid 2011 and received a real baptism of fire, joining right before COMBIO and the end of financial year reporting. The reason for this was the hope to retain some corporate memory and not have every one new to their positions each time the executive rolled over. This was achieved, but at some cost as the new treasurer and secretary (taking over from the hard working Kat Gaus and Geraldine O'Neill), were were brought in at the busiest time of the year for the society. The roles and responsibilities of the Secretary and Treasurer have also been considerably enhanced so I specifically wish to draw attention to the effort that both Kieran and Ian have brought to their new

roles and the amount of work that they are undertaking on the society's behalf. I also want to acknowledge the hard work of Susan Dacre for the effort of putting together of the newsletter which I think looks fantastic. Thanks also to Ros and Magic Touch for the web site, the place where you can learn about all the society's activities <http://www.anzscdb.org/>.

Membership Issues and Fees

As always, growing our membership is a major priority of the society. We cannot continue to support the many activities that the society underwrites without members and the fees that they produce. ANZSCDB remains one of the cheapest of the professional societies to join and represents great value for money. While this newsletter is obviously preaching to the converted I urge all of you to ensure that your colleagues become members. A new initiative of the executive is the membership committee who will be working hard to identify potential members. Lapsed members can expect an email in the near future from the membership committee and we hope this new initiative will boost membership numbers in a sustainable manner. Member can renew or join online at <http://www.anzscdb.org/ANZSCDB-Membership.html>





ComBio 2011 Round Up

Jim Burnell reports on the recent conference of ASBMB held in conjunction with ASPS and ANZSCDB

For the first time since ASBMB annual meetings were held at Australian Universities, the annual meeting of the society was held outside a major capital city; the meeting, scheduled to be held in Queensland, was held in Cairns in place of Brisbane. The lack of local research institutions in the Cairns region meant that almost all conference participants had to travel in excess of 2000 kilometres to attend the conference and this was

a major cause for concern in the lead up to the conference. However, although the conference was a little smaller than in recent years (a final tally of 613 registrants coupled with the 53 booths in the Trade Display) the conference was deemed to be a success by many of the participants. The participation of the Sustaining Members was more important than ever given the lower number of registrants and I would personally like to thank all Sustaining Members who transported their displays the extra distance "for going the extra mile!" The high participa-

tion rate in the Passport competition was driven by the number and quality of the prizes on offer and I recommend that, given the amount of support provided by the Trades Display, that the value and number of the prizes on offer be continued at future Combio conferences.

The facilities and staff of the



Cairns Convention Centre were exceptional and both the registrants and the Sustaining members were highly complimentary of the Convention Centre as a venue. In contrast to the overwhelming size of the Melbourne Convention Centre, the Cairns Convention Centre with both the size and proximity of the rooms used for the symposia and the plenary sessions, was ideally suited to the number of registrants.

In contrast to the long gestation time of Ozbio2010, the organization of the scientific program

began in earnest in May 2010. The organising committee only met once (May 2010) with all further communication achieved electronically.

There was a total of 23 plenary speakers (18 from overseas) and 245 symposium presentations (including 31 overseas speakers). Following on from the

success of colloquia in Melbourne in 2010, six concurrent colloquia were run in Cairns providing opportunities for 36 post-grads and junior post-docs to make oral presentations. These sessions were a great success and I would recommend they be continued at

future Combio meetings. One of the benefits of this year's meeting being a little smaller than past meetings was the fact that all 119 posters remained on display for the duration of the three days (while the Trade display was operating).

Holding the conference in a city that lacks a significant biochemical presence presented two sets of problems. Firstly, the conference organization had to occur elsewhere and the student support required had to be sourced. With respect to the organization

of the scientific program, my sincere thanks go to all members of the organizing committee: Graham Bonnett (Deputy Chair and ASPS), Bostjan Kobe (Program Chair), Carol Wicking (Program Deputy and ANZSCDB), Terry Walsh (Treasurer), and fellow members Greg Anderson, Nicole Cloonan, Alan Munn, George Muscat, Patrick Schaeffer (Social Organizer), Susanne Schmidt (ASPS) and Rohan Teasdale (ANZSCDB). As has been stated previously, the success of a conference is completely dependent on the quality of the scientific program; the quality of the science at Combio2011 made the conference an overwhelming success. And continuing the standard set at Ozbio2010, we are very thankful for the contribution made by Nobel Laureate Roger Tsien who delivered a clear demonstration of translational research. Regarding assistance that is essential for the smooth operation of the conference (satchel packing, registration desk and audio visual assistance) I would like to thank the team of James Cook University students who gave up their intra-semester break to assist with the conference.

The structure of the conference mimicked past meetings with two concurrent plenary sessions run on all four days interspersed with six concurrent symposia or colloquia covering ten separate streams. The scheduling of two concurrent plenary sessions on the final afternoon were successful as judged by the audience numbers. I am sure the scheduling of the plenary sessions was the reason for the excellent attendance at the

presentation of awards and the closing drinks that followed.

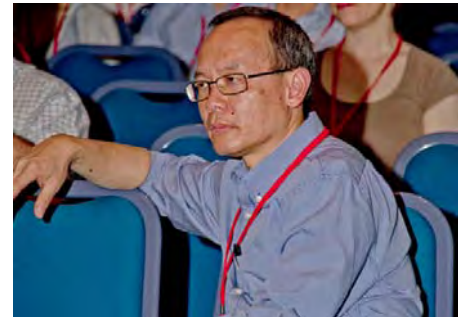
The Monday evening mixer, Tuesday evening cocktails and the Wednesday night dinner were all well attended and the accompanying food excellent.

The conference was blessed with perfect weather and many attendees were able to make the most of the opportunities offered by Cairns and surrounds.

My sincere thanks go to Sally and Chris Jay and their associates as well as Mark Stevens for their organizational skills and professionalism.

Finally, judging by the recent emails received from some of our overseas plenary speakers who commented on the "casual atmosphere", "the beautiful surrounds" and the "excellent science", that Cairns Combio2011 was a great success.

Jim Burnell



ComBio 2011

Honoured on the Night

The President's Medal celebrates excellence and distinction in the fields of Cell and Developmental Biology. This year the honour has been conferred upon Professor Robert Parton. Robert's research focuses on the cell surface and, in particular, on the structure and function of caveolae. Caveolae are small pits in the plasma membrane which have been linked to tumour formation and muscular dystrophy. We are investigating the role of caveolae in cell physiology and their exploitation by pathogens.

Other prize winners at this year's event included:

★2011 Young Investigator
Dagmar Wilhelm

★Toshiya Yamada Early Career
Award
Michael Tallack

★David Walsh Student Prize
Cheryl Chia

★Keith Dixon Prize in Developmental Biology
Lisa Kass

★Cell Biology International Student Poster Prize
David Williamson

Photographs

Top Row L to R: President's Medal Winner Prof Robert Parton and Katherine Carey from Sigma Aldrich - Young Investigator Dr Dagmar Wilhelm and ANZSCDB President Peter Currie
Bottom Row L to R: Past ANZSCDB President Edna Hardeman presents prizes to David Williamson, Lisa Kass, Cheryl Chia and Michael Tallack



ROBERT PARTON

Art for science's sake

Fiona Wylie

When Rob Parton looked down his electron microscope as a graduate student and saw his first row of flask-like caveolae in a cell membrane, little did he know that these quite beautiful and enigmatic structures would take him on a scientific journey of achievement, surprises, different continents and many life-long friends.

English by birth and by football religion, Parton graduated from his undergraduate degree in biochemistry at Scotland's Edinburgh University in 1984. He then zoomed through his PhD with David Critchley at the University of Leicester back in England, finishing in 1987. It was during those three years that Parton discovered cell biology, and more specifically, endocytosis. Using a combination of biochemistry and the tool that was to become his trademark, electron microscopy (EM), he helped to characterise how tetanus toxin enters neuronal cells.

"I must admit I didn't really enjoy it (the EM) at the start," says Parton. "I was pretty well working on my own and with the sort of samples and microscopy I was doing, it was really difficult. Nobody else in the facility was working with cells. But in a way I was also very fortunate

because I had the freedom to work on my own, make my own mistakes and work out how to



fix them – it was a great learning exercise. I also had no fears at all about EM by the time I finished my PhD."

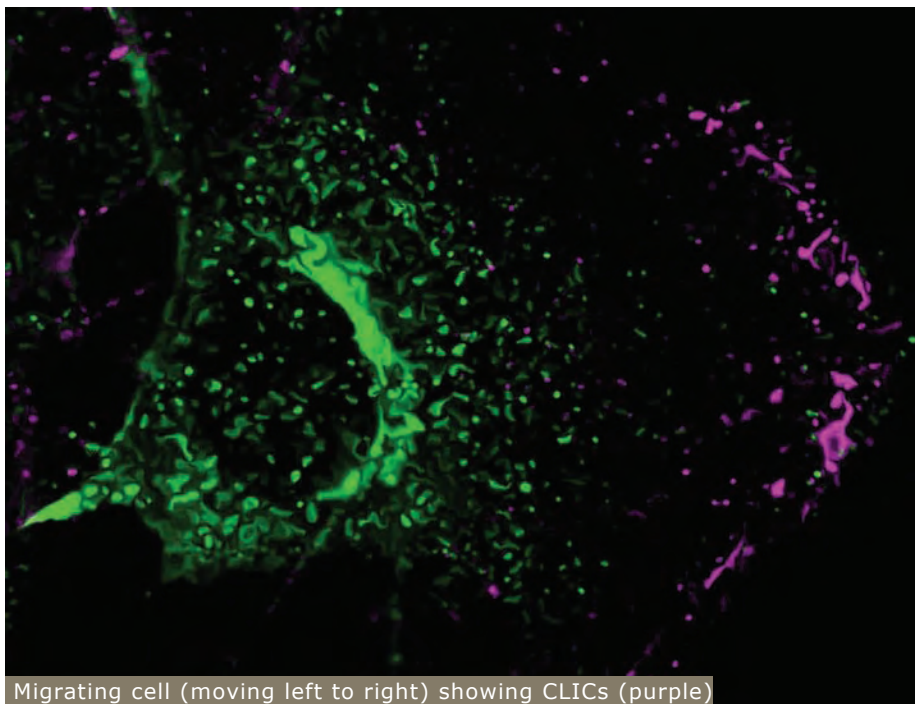
Beer, science and sauerkraut Towards the end of his PhD, Parton decided that Heidelberg in Germany looked good for the sorts of science he was interested in pursuing and so applied for a few things there. He ended up with a Royal Society Fellowship and then an EMBO Long-term Fellowship to work at the European Molecular Biology Laboratory (EMBL). So at the end of 1987, Parton headed to

the beautiful hills above Heidelberg to work in the Cell Biology division at EMBL in a team with Gareth Griffiths and Kai Simons. According to Parton, it was a very exciting place to do cell biology at the time and many of the 'gurus' of the field worked there for some time during the 9 years that Parton was there.

Under the mentorship of scientists like Simons and Griffiths and alongside the likes of Jean Gruenberg, Marino Zerial and Carlos Dotti, Parton polished his skills in immunoelectron microscopy and at the same time firmly established his own research profile. Soon he was also collaborating with other groups throughout the institute. "I

still have many of the contacts I made at EMBL – we are still friends and most are collaborators as well. Most of the people who really influenced my science path are from there."

Making his mark on the cell membrane Four years later and at the age of 26, Parton was appointed as a junior group leader at EMBL, allowing him to establish true independence. Whilst continuing the many collaborative projects he had established, the position also enabled Parton to narrow his research focus to the struc-



Migrating cell (moving left to right) showing CLICs (purple)

ture and function of caveolae. “The caveolae work actually started in my PhD, but we had no markers for them at all, and could only study them by EM. And then it was just by chance when I was then at EMBL and working with Kai Simons that we found the newly discovered protein VIP21 (now called caveolin-1) on caveolae. I remember looking down the microscope that day and realising that we had probably found the first marker of caveolae.”

This was a very important finding for the caveolae field, but also for Parton professionally because it became the field he would pursue. “At that stage of my career I was looking for something novel to work on that could be looked at by EM, and it turned out to be caveolae. This is really a beautiful structure that we can study by light and electron microscopy, and once we had the markers we could start to find out what it was doing in the cell.”

Other findings from the Heidel-

berg period that Parton cites amongst his most pivotal are showing that the protein caveolin is required to make caveolae and his cloning of the muscle-specific caveolin-3 with Michael Way (both published in 1995). Caveolin-3 later turned out to be associated with mutations occurring in muscle pathologies such as Duchenne Muscular Dystrophy, and this work in particular would provide new insights into the molecular defects that may contribute to disease phenotypes.

These and other studies helped establish a new molecular era of caveolar research and cemented Parton’s international reputation in this area.

Beer, science and sausage rolls In 1996 Rob saw the light with a move to Australia and new challenges at The University of Queensland (UQ). He joined the Centre for Microscopy and Microanalysis as Deputy Director and also became a research group leader at the Centre for Molecular and Cellular Biology. In 2000, his group became part

of the newly formed Institute for Molecular Bioscience at UQ. Starting his group from scratch, Parton was quick to attract people locally and from overseas to work with him, and he was soon back up to speed in the cell biology field. “Australia has a great cell biology community and I got a lot of support from a number of people ever since coming here.”

Over the next few years Parton continued to contribute new scientific insights into the understanding of caveolae biology, but also to the wider and related focus of endocytosis and functional domains on the cell membrane. In one such series of studies, he and John Hancock at the IMB showed that one of Parton’s caveolin-1 mutants could potentially inhibit Ras signaling, and that this inhibition was affected by cholesterol in the cell.

These exciting findings opened up whole new avenues of research into the previously unrecognized overlap of cholesterol regulation, caveolin and crucial cell signaling pathways. More specifically, it also encouraged a new field of research aimed at understanding the cell biology of the lipid droplet, following Parton’s identification of a role for caveolins in lipid droplet function including lipid storage during liver regeneration.

Put one more bit in on latest research – clathrin-independent pathways

To infinity and beyond Did Parton have an inkling of the huge field that caveolae and all its associated structures and proteins would generate when

he first started? “We knew that these things were incredibly abundant – up to 50 % of the surface of some cells was caveolae. So we always knew that they must have a really important role, but we really had no idea at all how many different areas of medical research they would have relevance in and where it would take us.”

Whilst Parton’s main game technique-wise has always been electron microscopy, he also recognises that EM is still just one toy in the box, especially these days with the gamut of fantastic tools available to cell biologists. Indeed, his group has always used a range of existing experimental systems and have made their own major contribution to developing new techniques in asking how caveolae form, dissecting the structure of caveolae and caveolins, and investigating the role of caveolae in health and disease. Such techniques include the quantitative analysis of surface microdomains by electron microscopy, cloning and characterisation of caveolins from zebrafish, proteomics screening and mass spectrometry, innovative systems for recapitulating caveola biogenesis in cell systems, and more recently, the development of new correlative methods to combine light and electron microscopy after fast freezing.

“This combination of tools and techniques has been so important for our findings on caveolae and caveolin – nothing in isolation could have done it,” says Parton. “For instance, we are now using EM tomography on a routine basis - where a few

years ago it took weeks to generate one tomogram, now we can do it in half a day. Indeed, the studies on caveola formation by caveolin were complemented by the first high-resolution quantitative studies of caveolae in 3D in fast frozen material by electron tomography.”

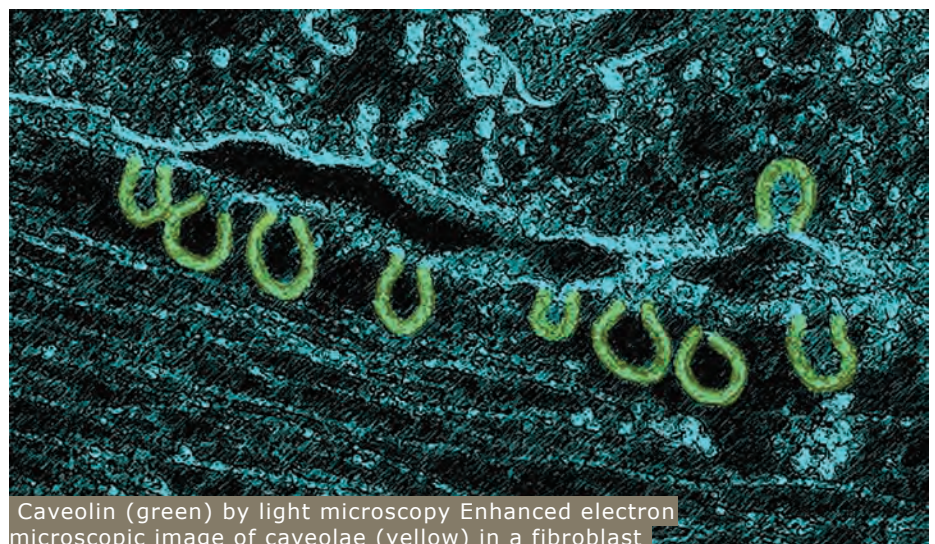
To do their stuff, Parton’s team also plays with knockout mice, knockdown experiments, eukaryotic systems to understand how caveolae are formed, live cell imaging, and then a range of other techniques in immunoEM and light microscopy including using some of the new fluorescent and electron-dense probes that are being developed. This impressive breadth of technical expertise and what they do with it makes the Parton lab a powerful force in cell biology research.

Getting out of bed each day?

Parton still has many reasons for making it into work each day. “I love that there are always surprises – you can make a prediction, do the experiment and get exactly the opposite answer, throwing up a whole lot of new questions. The international environment that we have now in the IMB is also really fantastic

and makes the place very exciting – people and groups from different places and working on a range of different things – new ideas coming in. It reminds me of EMBL. Having said that, I also love the opportunity to travel, virtually anywhere in the world, to conferences or to meet with friends and collaborators and discuss our science.”

“And finally, I love that doing EM is still a bit of an art (like many microscopists, Parton dabbles in a bit of art himself). I still go on the microscope myself every week and I would really miss that if I couldn’t. I love still being able to view the cells. Even when the experiment throws up a negative answer or hasn’t worked, there is always something very special to look at.”



Caveolin (green) by light microscopy Enhanced electron microscopic image of caveolae (yellow) in a fibroblast

An illuminating journey

Fiona Wylie



Dr Eldon Ball has lived and worked in our Nation's capital for most of the past 40 years since joining the Department of

kids might even collect a few of these creatures, live or dead, to keep at home. But when one of those kid's collections eventually ends up in several museums, he or she was probably always destined for scientific endeavours. And this was indeed the case for American-born Ball, who now studies the molecular control of coral development in Canberra at the Australian National University (ANU) College of Medicine, Biology and Environment.

Illuminating from the start From his amateur boyhood start as a "serious insect collec-

with two-handed drawings using coloured chalk (no Powerpoint in those days). One evening a few of us were working in the lab when Abbott came in and asked whether we wanted to see something amazing. He took us to a darkened basement aquarium and there we saw some large comb jelly's (ctenophores) over which waves of bioluminescence passed whenever they were disturbed." And in that moment, Ball 'saw the light' literally and figuratively, cementing his decision to start a PhD in Marine Biology, and to join Jim Case at the University of California,



Neurobiology at ANU in 1971 as a Research Fellow. These days characterizing himself as a zoologist, Ball feels fortunate to have been involved in many different sorts of research during his long and highly successful career. He will cease formal employment at the end of December but hopes to continue doing science in some capacity as long as he is able.

Many children spend at least some of their formative years staring at and even capturing some of the weird and wonderful organisms hanging out in the garden, creek or seaside. Some

tor", Ball's first introduction to 'real' academic research was as a Stanford University science undergraduate when he undertook a total immersion research course at the University's marine station. This course spiked his interest so much that he followed it up with a summer course in Invertebrate Zoology, and basically from there his future was pretty well set.

"The summer course was taught by a very intense man named Don Abbott who was famous throughout the invertebrate community in particular for his final all-day lecture on invertebrate evolution illustrated

Santa Barbara to work on bioluminescence.

Ball's doctoral work focused on epithelial electrical conduction and behavior in a solitary hydroid. Hydroids are small marine carnivores related to jellyfish, sea anemones and corals, and he describes the species on which he worked as looking like a small, animated, palm tree. "I certainly had a memorable graduate school career," recalls Ball. In addition to the day-to-day research, it included expeditions mapping the marine fauna of the west coast of the Americas from Peru to California, a few months

studying bioluminescence in New Guinea and living through the anti-Vietnam war riots on his doorstep at Isla Vista, next to the UCSB campus.

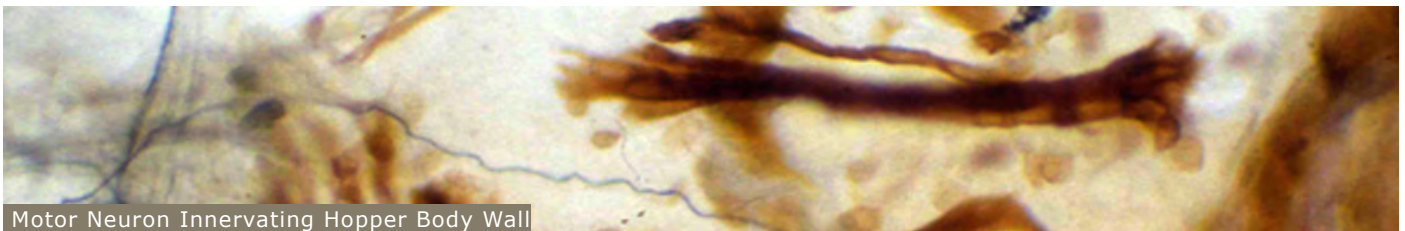
To the light on the hill
While studying bioluminescence in New Guinea, Ball accidentally became involved in looking at biological succession on a newly created volcanic island. Follow-

ing to Ball. "From 1982 to 1984, Goodman's group published 5 papers in Nature, 3 in Science, 5 in Journal of Neuroscience and many more in lesser-known journals." (In the "small world" department, it was here that he first met Edna Hardeman, who was a post-doc in a lab down the hall).

During that first sabbatical at

1990s I got involved in studies on the molecular control of coral development with David Miller at the ARC Centre of Excellence for Coral Reef Studies in Townsville and with David Hayward, his long-term Canberra collaborator.

David Miller could not say enough to adequately praise his collaborator and long-time mentor. "I am privileged to call



ing on from that, he completed his PhD in 1971 and headed down under to take up a post-doc in Adrian Horridge's newly formed Department of Neurobiology in the Research School of Biological Science at the ANU, in part to be able to revisit "his" New Guinea island. For the next 10 years or so he stayed in this department investigating invertebrate sensory systems and their development in crickets and crustaceans using electrophysiological methods and electron microscopy.

Another life-changing research experience came along in 1981, when he went on sabbatical to the lab of Corey Goodman back at Stanford. "It was a very exciting place to be at that time for studying developmental neurobiology – they were combining dye-fills of developing neurons with laser cell ablations, the use of monoclonal antibodies and electron microscopy." This exciting work translated handsomely into productivity, accord-

Stanford, Ball worked on neuromuscular development in the grasshopper, characterizing the development of muscle pioneers and their innervation. In fact, Ball lists this work amongst his most prized research achievements. "I continued the work on my return to Canberra, resulting in a series of papers in Developmental Biology and Development over the next few years." In 1990 he again returned for a short sabbatical in Goodman's lab, now located at UC Berkeley, to learn some molecular biology.

From creepy-crawlies to coral Ball is also proud of the insect work he subsequently undertook back in Canberra when Jim Truman came to the lab for a year from the University of Washington. "Together, we worked on the role of nitric oxide in the developing insect nervous system, and we were among the first to study this topic at the level of individual identified neurons." In parallel with this later insect work, from the early

Eldon a friend and colleague, and don't know how we will cope when he retires," says Miller. "As a scientist, he is exemplary - he is critical, ruthlessly honest and completely selfless in his support for others. He is also one of the very few real scholars that I know; he knows the literature from the year dot, and is tireless in attention to detail.

Ball's other main coral collaborator, David Hayward, echoed Miller's sentiments very closely and loudly. Hayward joined Ball's group in the early 1990s during the grasshopper development period, and soon found him to be extremely hard working and infectiously enthusiastic about his research. "Eldon has a broad zoological background, a great knowledge of early cnidarian literature and his expertise in microscopy has helped many students and colleagues to obtain great images."

"Eldon also has the patience to work through difficult tech-

niques where others may give up, which, for example, resulted in our being able to carry out *in situ* hybridization on lipid-rich coral embryos." On a personal level, Eldon is always friendly and cheerful, has a great sense of humour, and, though never not busy, is always generous with his time. He is a pleasure to work with, and is, for me, a source of inspiration."

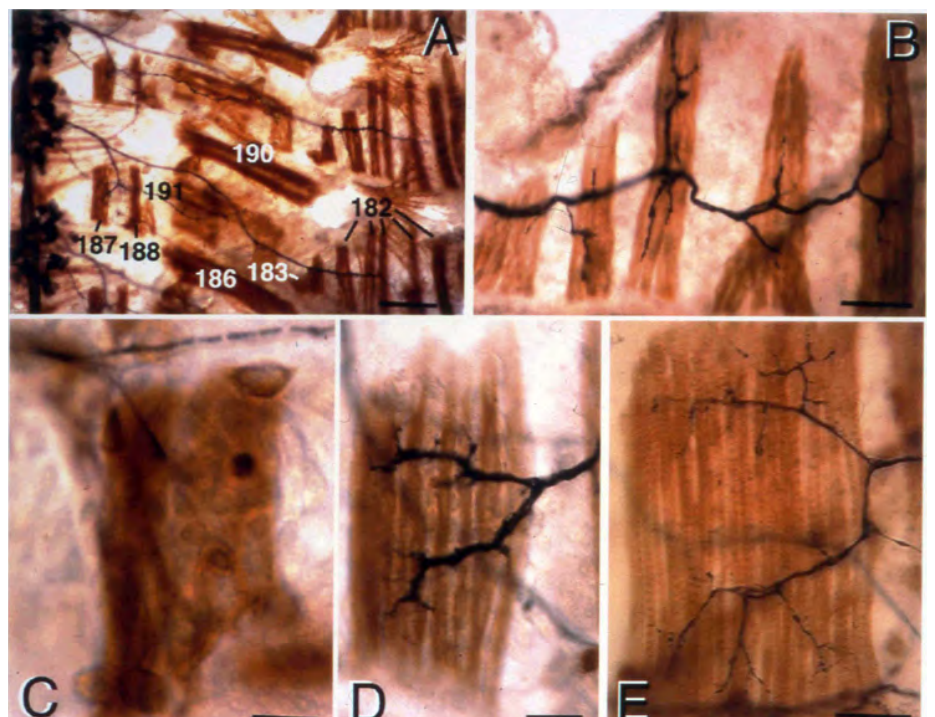
This ongoing collaboration with Miller and Hayward has always been very productive and grew increasingly exciting for all concerned as they moved from cloning individual genes using PCR to recently producing a sequenced genome and transcriptome. "Our studies on coral development have made *Acropora millepora* the most studied coral in the areas of development, genomics and transcriptomics. This in turn has presented us with an infinite number of research possibilities that we could only have dreamed of a few short years ago."

Always more still to do
More than 50 years after his main scientific interest was collecting bugs, Ball now finds himself on the edge of retirement. "I hope to continue the coral work as long as I am able, and in addition to pushing ahead with the molecular work I would like to do some anatomical studies of the sort that are currently rather out of fashion, to put our gene expression studies more in context."

And to those still coming through, Ball has some words of wisdom that almost anyone could learn from. "Be totally

involved and persistent in what you are studying - most of those who really WANT to do science find a way of doing so. Also, don't be afraid of opportunities when they present themselves - much of life is determined by accident, lucky or unlucky, so when you get a good opportunity, don't be afraid to take it.

Photo below: Hopper neuromuscular development - stained black with an antibody to cGMP, while the brown staining is of a monoclonal antibody specific to muscle pioneers.





ComBio2012
Adelaide Convention Centre
Adelaide, South Australia

23 to 27 September 2012

**Early Registration and
Abstract Deadline:
Friday, 22 June 2012**

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
- New Zealand Society for Biochemistry and Molecular Biology
- New Zealand Society of Plant Biologists
- Australasian Microarray & Associated Technologies Association

and the inaugural meeting of:

- Australasian Plant Pathology Society - Molecular and Physiological Plant Pathology Special Interest Group

ComBio2012 will be held in the Adelaide Convention Centre from 23 to 27 September 2012. The venue is located in the centre of Adelaide and is world class. Close by are museums, the botanical gardens, the famed Adelaide Central Market and the shopping precinct of Rundle Mall.

Further information:

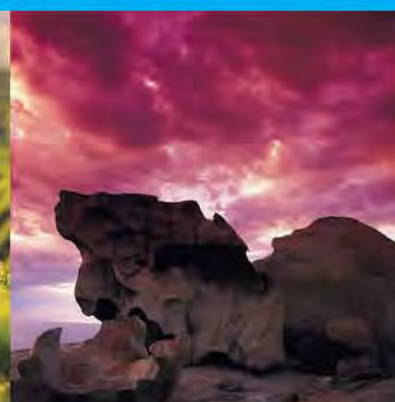
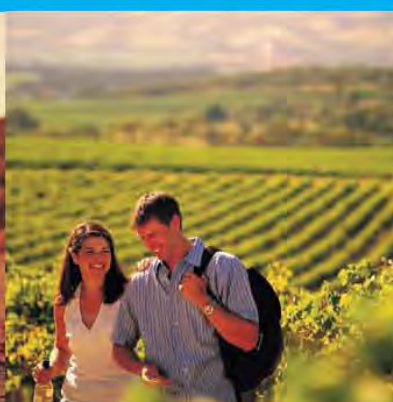
Conference: Stuart Pitson
stuart.pitson@health.sa.gov.au

Registration/Exhibition: Sally Jay
combio@asbmb.org.au

www.asbmb.org.au/combio2012

Themes of the conference will include:

- Protein structure, function and proteomics
- Gene regulation, genomics and bioinformatics
- Plant biology
- Cell biology, architecture and trafficking
- Signalling
- Developmental biology
- Molecular and physiological plant pathology





The 12th **Hunter Meeting**

Convenors:
Peter Gunning | Jennifer Stow

March 27-30, 2012
The Sebel Kirkton Park, Pokolbin, NSW, Australia

*Australia's Premier Meeting of cell and developmental biologists
~ in NSW's Premium Wine-growing district*

Invited Plenary Speakers

Nobutaka Hirokawa
(Japan)

Valerie Weaver
(USA)

Fiona Watt (UK)

*Fiona Watt's attendance at the Hunter Meeting
is generously sponsored by the ANZSCDB*

Dennis Brown
(USA)

Mike Snyder
(USA)




Hideyuki Okano
(Japan)

Bart Vanhaesebroeck
(UK)

Philippe Sansonetti
(France)

Anna Akhmanova
(The Netherlands)

 *Philippe Sansonetti will
present the EMBO Plenary
Lecture*

Alan Cowman
(Australia/WHO)

Registration <http://hcbm.mtci.com.au>

*on-Line registration ~ close of Early-Bird registration: January 20, 2012
Close of abstracts for inclusion as posters in the printed program: February 10, 2012*

ZEBRAFISH

13th Australia and New Zealand Meeting
5th - 8th February 2012



Foothills Convention Centre
Dandenong Ranges
Melbourne

INTERNATIONAL SPEAKERS

Prof. Ajay Chitnis - Laboratory of Molecular Genetics, NICHD, NIH, USA
Prof. Roger Patient - University of Oxford, United Kingdom, EMBO lecture
Prof. Joachim Wittbrodt - University of Heidelberg, Germany
Prof. Jeroen den Hertog - Hubrecht Institute, The Netherlands

Register before 25th November 2011

<http://anzzebrafish.org/>



Conjoint
AWTRS and **ASDR** Conference
MAY 22-24, 2012 Sydney, Australia

Session topics include:

Fibrosis and scarring
Skin biology
Cellular mechanisms of repair
Epidermolysis bullosa
Diabetes and chronic wounds
Genodermatoses and alopecia
Regeneration
Inflammation
Biomaterials
Autoimmunity and Allergy
Photobiology/cancer
Wound management
innovation CRC
MasterClass

Key speakers include:

Sabine Eming (Germany)

Inflammation and wound healing

Luisa DiPietro (USA)

Scar-free wound healing

David Woodley (USA)

Epidermolysis Bullosa

Nadia Rosenthal (Aus)

Regeneration

Peter Byers (USA)

Connective tissue biogenesis

David Hart (Canada)

Proteinases and wound healing

Virginia Sybert (USA)

Genetic testing

Jakub Tolar (USA)

Stem cell transplantation and tissue repair

Register on-Line ~ <http://awtrsasdr2012.mtci.com.au>

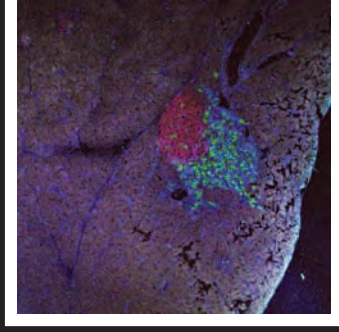
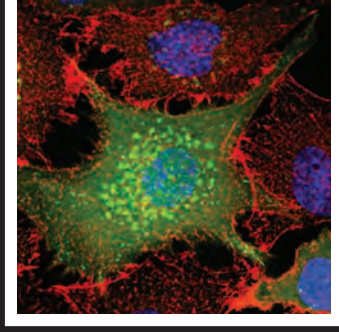
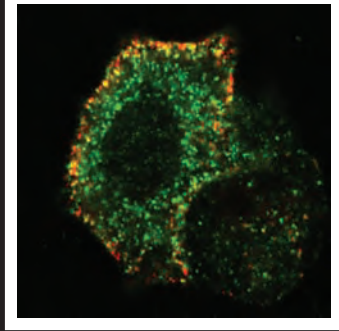
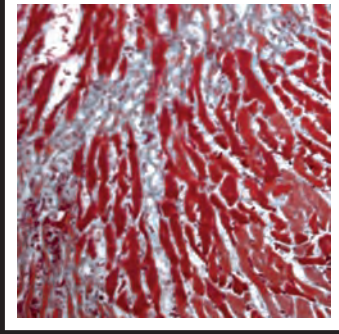
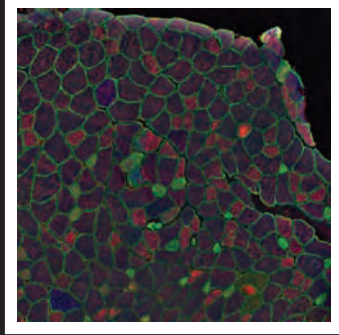


The Australasian Wound
and Tissue Repair Society
www.awtrs.org

The Australasian Society
for Dermatology Research



18th NSW Cell & Developmental Biology Meeting



Monday 26th March 2011 (*the day before the Hunter Meeting*)

at the Garvan Institute of Medical Research, Sydney.

Keynote Presentations (International & National) and talks from abstracts.



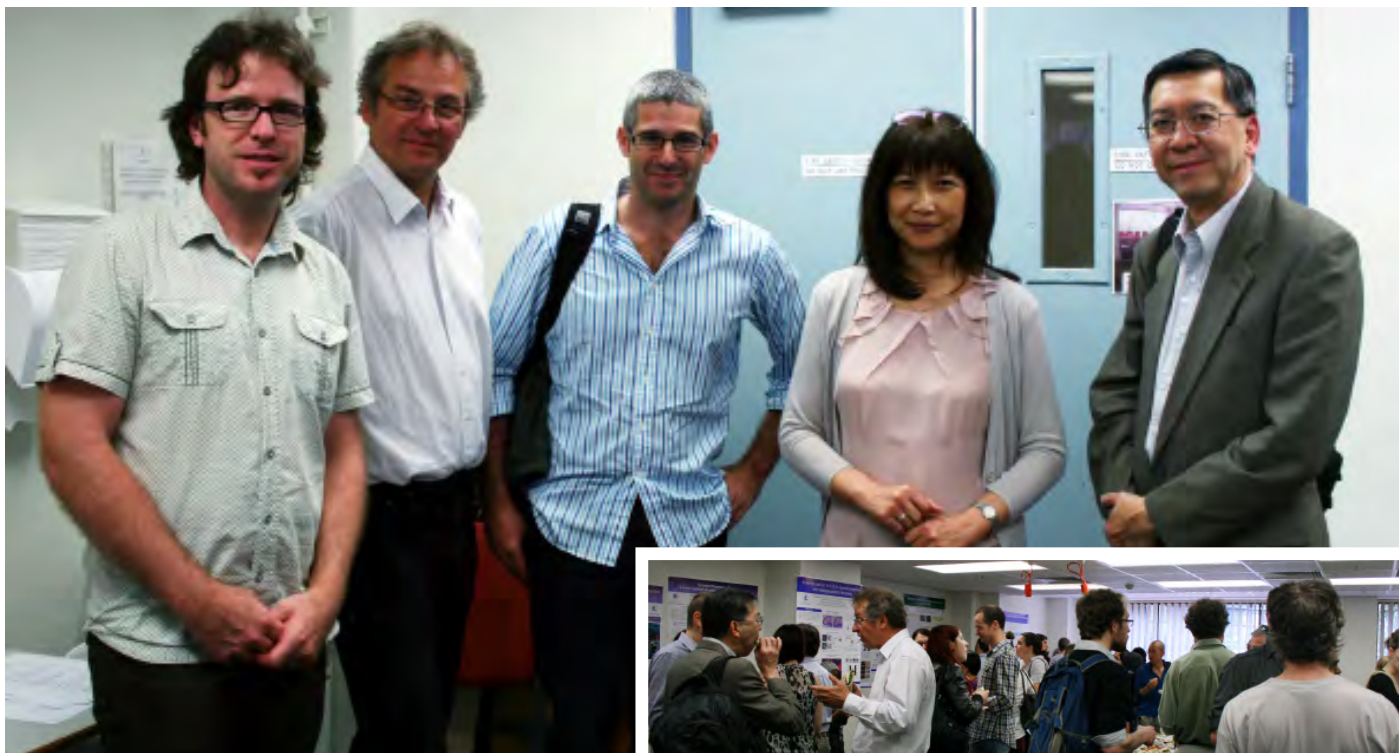
for details and abstract submission contact:

Will Hughes; w.hughes@garvan.org.au

Antony Kee; a.kee@unsw.edu.au



Adelaide Meeting



Organisers and invited speakers. L to R – Quenten Schwarz, Andras Nagy, Will Hughes, Yeesim Khew-Goodall and Patrick Tam

Yeesim Khew-Goodall and Quenten Schwarz



Attendees at Poster Session

In similar fashion to the larger states the inaugural Adelaide Cell and Developmental Biology Meeting kicked off in spectacular fashion. Headlined by a stellar list of world-class invited speakers, around 90 people attended the day long event. Professor Andras Nagy from the Samuel Lunenfeld Institute (Canada) began the day with an overview of his past 25 years in science. His discussions about the conception of tetraploid fusion and non viral iPS cells were particularly enjoyable. The second Plenary presented by Dr Will Hughes from the Garvan Institute (Australia) covered recent advances in high resolution microscopy and how this has impacted on his own work. The day was then finished with Professor Patrick Tam from the Children's Medical Research

Institute (Australia) who gave an overview of the lineage tracing techniques conceived in his laboratory and how this has impacted on his recent research. Several overarching themes and words of wisdom were well received throughout the plenary sessions, including the necessity for fruitful collaborations, luck (Andras's analogy here was the use of a dice on all of his slides), lateral thinking and most importantly that there is no substitute for thorough and detailed investigations.

Breaking up the Plenary sessions was a showcase of local talent with exceptional 15 min presentations from students and post docs. Local research was also on show at the poster session held over the lunch interval.

Congratulations go to Dr Kelly Betterman and Mr Hamish King for the presentation awards, and to Dr Donna Denton and Mr Joey Puccini for the poster awards. It was very pleasing to see representation from each of the Adelaide Universities and research centres.

We would like to thank everyone that made this day a major success. In addition we would also like to thank the School of Molecular Biosciences (University of Adelaide), Life Technologies, Biorad, SA Pathology and the Centre for Cancer Biology for their kind sponsorship. We look forward to recapitulating this event over the coming years.

22nd Nov 2011.

5th Barossa Signalling Meeting

(Yeesim Khew-Goodall & Quenten Schwarz, SA State Representatives)

The 5th Barossa Signalling Meeting was held from 23-26 November, 2011 at the Barossa Novotel, SA, with the overarching theme this year being 'Cell Signalling and Molecular Medicine'. The meeting was attended by over 130 participants who were treated to feasts of outstanding science during the day followed by gastronomic and viticultural pleasures to end the day, now becoming a distinguishing mark of the Barossa meetings. This year's meeting featured 12 international speakers (Facundo Batista, UK; Zhijian 'James' Chen, USA; Ivan Dikic, Germany; Vishva Dixit, USA; Mukesh Jain, USA; Shige Nagata, Japan; Andras Nagy, Canada; Tony Pawson, Canada; Juan Rivera, USA; Frank Slack, USA; Sarah Spiegel, USA; Henning Walczak, UK) who presented work ranging from signalling systems in

inflammation, cancer and development to non-coding RNAs. A highlight of all the Barossa meetings is the awarding of the Clifford Prize (a Perpetual Trophy and an *ad hominem* glass sculpture together with a magnum of Grange Hermitage (donated by Penfolds)) in recognition of international excellence in cancer research that have established new paradigms for cancer therapies. This was followed by the Clifford Lecture and Dinner. This year's award was presented by the SA Minister of Health to Dr Vishva Dixit of Genentech, USA, for his pivotal role in elucidating how cell death receptors work, which has led to the development of new therapeutic strategies for cancer. In the Clifford Lecture, Dr Dixit gave the audience a peak into the thought processes that turned unexpected findings into novel discoveries. This year, the ANZSCDB-sponsored speaker was Prof Patrick Tam from Children's Med-

ical Research Institute, Sydney, an eminent embryologist well-known to ANZSCDB members. Patrick gave an insightful presentation about the intersection of transcriptional and signalling activity for tissue morphogenesis in embryos. A number of SA's ANZSCDB members (Sharad Kumar, Natasha Harvey, Quenten Schwarz, Yeesim Khew-Goodall) also gave platform presentations of their research. The Organisers of the meeting would like to acknowledge that the high calibre science presented at the meeting was made possible by the generosity of sponsors which include Novartis (platinum), BMS Oncology (gold), Medvet (gold), CSL (silver), Pfizer (Bronze), CRC for Biomarker Translation, Leukaemia Foundation, ASBMB and ANZSCDB. Congratulations and thanks also go to the convenors Greg Goodall, Stuart Pitson and Angel Lopez for their hard work in making this meeting a success.



Boden Research Conference

Trevor Lithgow and Jenny Stow

2011 Boden Research Conference: Cellular Microbiology – new aspects of host-pathogen interactions

With the generous support of the late Dr Alex Boden AO FAA, the Australian Academy of Science established an annual series of small specialist conferences in the biological sciences to enable active research workers in rapidly advancing fields to discuss current advances and problems. Cellular Microbiology was the 53rd in this distinguished series of specialist conferences which continue to be a unique opportunity for the scientific community to exchange ideas and advance their fields of science.

New developments in imaging technology have revealed aspects of cellular ultrastructure that were previously beyond our imagination. The Cellular Microbiology – new aspects of host-pathogen interactions meeting at the Shine Dome (October 18-21, 2011) focused on revelations in the organization within bacterial cells and the nature of the interactions bacterial cells make

when they encounter humans. This included three-dimensional structure of bacterial protein secretion machines and the nature and function of effector proteins that they secrete, imaging and understanding the dynamics of membrane ruffling and reorganization in human macrophages



International Speaker - Professor Thomas Marlovits

as they encounter bacteria, re-organization of structures in bacterial cells within niches they create in the human body, nanotubes that dock bacteria to cells of other species and Microbiology's platypus: bacterial cells that have an internal membrane structure mirroring many of the features previously thought exclusive to eukaryotes such as ourselves.

International speakers included Professor Thomas Marlovits (Institute for Molecular Biotechnology - Austria), Professor Chris Whitfield (University of Guelph - Canada), Dr. Abigail Clements

(Imperial College London – UK), Professor Sigal Ben-Yehuda (IMRIC – Israel) and Dr. Damien Devos (EMBL – Heidelberg). Talks highlighted applications of atomic force microscopy, single-particle cryo-electron microscopy and super-resolution microscopy, interspersed through a program ranging across biological and biomedical systems that are just beginning to be addressed by detailed imaging and other innovative technologies. A feature of the program was the long breaks for discussion where breakthroughs and controversies were discussed and new

collaborations were forged. All student registrations at the conference were fully-funded by the Australian and New Zealand Society for Cell and Developmental Biology (ANZSCDB).

The conference was organized by Professor Trevor Lithgow (Monash University) and Professor Jennifer Stow (University of Queensland) and was supported by the ANZSCDB, the Australian Society for Microbiology, Monash University and the University of Queensland.

Brisbane Research Conference

Michael Piper

On October 14th 2011, the Queensland arm of the Australian and New Zealand Society for Cell and Developmental Biology (ANZSCDB) held a 1-day Cell and Developmental Biology Meeting at The University of Queensland's Institute for Molecular Bioscience. This meeting, made possible with generous support from the ANZSCDB, as well as from the Institute for Molecular Bioscience, the Queensland Brain Institute and the School of Biomedical Sciences at The University of Queensland, showcased the fantastic research into cell and developmental biology being performed in Queensland. The overseas plenary lecture was presented by Assoc. Prof. Peter Dearden

(University of Otago), who gave a fascinating insight into axis formation from an evo/devo standpoint. We were also lucky enough to have two young and dynamic Australian researchers present the other plenary lectures, namely Kat Gaus (University of New South Wales), who presented her work on the molecular mechanisms of T cell activation, and Edwina McGlinn, who talked about patterning the early embryo. As well as this, we had a number of fantastic short oral presentations delivered by PhD students and post-docs from around the Brisbane region. Over lunch and coffee we also had a very interactive and exciting poster session, which was extremely well attended. Prizes were awarded to the best

oral and poster presentations; this year Josh Mylne and Rajesh Ghai won the awards for best oral presentations, while Michael Tallack, Elanor Wainwright and Tam Duong took the gongs for best posters. Thanks must go to all of those who contributed to the smooth running of this symposium. Overall, the meeting, which had over 100 registrants, was a great success, and we look forward to the next installment of this meeting in 2012.

On behalf of the organizing committee of the Cell and Developmental Biology Meeting



Plenary Speaker Assoc Prof Peter Dearden

Combined Biological Sciences Meeting

Aleksandra Filipovska and Evan Ingley

This August we hosted the annual Combined Biological Sciences Meeting (CBSM) and as part of this our WA branch was kindly awarded sponsorship by the ANZSCDB to host a session dedicated to cell and developmental biology. Our invited speaker was Dr Peter Boag from the Department of Biochemistry and

were three additional and diverse presentations from the other plenary speakers at CBSM. Professor Justin Marshall gave an amazing insight into the world of the mantis shrimps and their unique vision system, Professor Robin Anderson gave an insight into the genes and molecular mechanisms that cause and lead to metastasis, Associate Professor David Edwards

The enabling technologies session of the meeting was particularly informative on the current cutting-edge methods used in cell biology



Molecular Biology at Monash University. He presented a series of vignettes of his exciting research that focuses on the role of RNA-binding proteins in post-transcriptional gene regulation and how they influence development and cellular function in *C. elegans*. He gave an inspiring presentation on the power of the worm as a model organism to study development and gene expression. There

discussed how advances in next generation sequencing can lead to improved understanding of crop genomes with applications for future crop improvement and Assistant Professor Beth Shapiro gave an interesting account on the evolutionary history of different species, that is helping to better understand the process of extinction and how humans contribute to the changes in their ecosystems.



Mantis Shrimp

Gordon Research Conference



Alpha Yap - Chair 2011 Gordon Research Conference on Cell Contact & Adhesion

The Gordon Research Conferences are a traditional highlight of the scientific summer in North America. These are a series of small conferences that are generally held throughout New England (often in boarding schools vacated for the summer). Over 100 meetings are held each year. Gordon Conferences are nothing if not immersive experiences: they are famous for their intensity, scientific energy, and sometimes also their rather Spartan accommodations.

While the whole portfolio of meetings encompasses a broad gamut of science, each indi-

vidual conference has a specialized focus. Each conference also recurs on a second-yearly basis, thus providing an opportunity for researchers in a field to get together and regularly take stock of progress in their discipline. They also allow those new to a field to dive in the deep end. Gordon Conferences are private conferences: there are no published abstracts, photography of posters is prohibited, and it is forbidden to publically retail information presented at the meetings. All of this is designed to encourage free discussion and presentation of new, unpublished data.

This year, the 20th edition of Gordon Research Conference on

Cell Contact & Adhesion met at Mt Snow resort in Vermont. Over 40 years this meeting has been the premier conference in cell adhesion; it has seen many of the major advances and charted the changing trends. When the inaugural meeting was held in 1973, proteins of the extracellular matrix had just begun to be identified, but none of the cellular receptors were known. We have come a long way: now we have a host of players and molecular mechanisms. Despite this, many of the big questions remain open. How do adhesive interactions between cells and their environment influence organogenesis and tissue organization? Conversely, how might disruption

of these processes contribute to disease?

In June, the conference met again to consider these issues. Focusing primarily on cell-cell interactions, the program encompassed detailed molecular, structural and biophysical analysis of cell-cell adhesion molecules; the cellular processes with which they interact to control cell shape, locomotility, polarity and cell division; and ultimately the developmental and biomechanical contexts in which those cellular behaviours play out to control tissue organization.

Two emerging themes were especially exciting. Firstly, it has become clearly apparent that mechanical forces need to be incorporated into any understanding of morphogenesis, both at the tissue and cellular levels. Many adhesion systems serve to transduce force exerted upon

cells through adhesion receptors and coordinate cellular responses to such mechanical stimuli. Ultimately, the balance of force generation and force sensing contributes to tissue patterning as cells couple into supracellular assemblies. Secondly, the mechanistic link(s) between cell-cell contact and growth control are starting to emerge. This revisits the old phenomenon of contact inhibition of growth, an intriguing phenomenon that has grumbled along for the past several decades. However, new evidence that links cell-cell adhesion to regulation of growth factor signaling and the Hippo pathway promises to revitalize this question. These will undoubtedly be major topics for discussion at the 2013 meeting.

The success of this meeting was made possible by the support of the ANZSCDB. And, importantly, many of the most exciting devel-

opments presented at the conference came from the confluence of cell and developmental biology. Thus the conference exemplified again the productive marriage of the two disciplines, exactly as represented by our Society.

Science Meets Parliament

Darren Saunders

Back in June I joined 200 other scientists descending on Canberra for the annual Science Meets Parliament (SmP), organised by Science and Technology Australia (formerly FASTS). This two-day event aims to encourage direct dialogue between scientists and politicians, and is a great opportunity for scientists to gain a deeper understanding of the political process.

SmP this year coincided with the launch of the "Respect The Science" campaign to explain the peer-review process and influence politicians to embrace science when making policy decisions. This was quite timely in the context of the heated debate over climate change, death threats to ANU climate scientists, and the appointment of the new chief scientist Ian Chubb in the same week.

Day one was spent in the member's dining room in Old Parliament House being briefed by a great lineup of speakers on communication and engagement, the nature of political influence, the budget process and much more. A recurring theme quickly emerged - that the languages of public debate and science have very little in common. This point was reiterated throughout the day, and by many of the politicians we met the following day.

John Flannery (Director Public Affairs and Media, AMA) shared some of his substantial political experience, pointing out how science has been largely sidelined in the political debate. He challenged us to engage politicians with big ideas, not just requests for more money.

Richard Dennis (Executive Director, Australia Institute) con-

tinued on a similar theme. He argued that one of the biggest challenges in communicating science is that scientists tend to highlight the caveats and uncertainties in any story, often at the expense of a compelling narrative.

A "Meet the Press" session with political correspondents Phil Coorey (Sydney Morning Herald), James Massola (The Australian), and Alex Hart (Channel 7) gave us a peek into the inner workings of the media and was probably quite an eye opener for most. The take-home message was that any story (science or other) needs broad appeal, real people, and a local angle.

After all that briefing we headed up the hill to Parliament House for dinner in the Great Hall, with speeches by former Victorian premier John Brumby, and the





president of Science and Technology Australia, Cathy Foley. Politicians, staffers, and speakers were seated at tables with the scientists, providing an extended opportunity for exchange of ideas and insights. Parliament was sitting at the time and it drove home just how hard politicians work as they scurried off to make speeches and vote on divisions throughout the evening.

Day two was spent in the somewhat imposing halls of Parliament House. A question and answer session with the Minister for Science, Kim Carr, gave us some insight into the thinking behind the government's approach to science policy and funding. It was clear that the minister (at least) holds science in very high regard. He lamented that few scientists have a good understanding of politics and implored us to engage in political debate without being intimidated by its adversarial nature.

Disappointingly, Minister Carr was quite dismissive of several questions asking about the inefficiencies and administrative load of the current funding system.

After watching the almost comical theatre of a heated question time in the House of Reps it was time for my meeting with WA Greens Senator Rachel Seiwert. As one of the sponsors of the Patent Amendment (Human Genes and Biological Materials) Bill 2010, she had a genuine interest in research and we had an extended chat about numerous topics including the need for evidence-based policy, gene patents, and science funding.

The day finished with an informal meeting over drinks with Senator Christine Milne, and Member for Melbourne Adam Bandt, a leading supporter of the Discoveries Need Dollars campaign for medical research funding. They again stressed that we have a responsibility

to engage policy makers in our research and to let them know why it's important.

In summary, SmP was a fantastic opportunity for professional development and a rare chance to get direct access to those formulating science policy and funding levels. I can't speak highly enough of the experience and sincerely thank ANZSCDB for nominating me to attend.



Student AIMB Meeting



Michael Murray and Leonie Quinn

This year, the first Student Australian Insect Molecular Biology Meeting (AIMB) was held at the University of Melbourne Graduate Centre, on Monday 12th September. The annual Australian Insect Molecular Biology (AIMB) Meeting, formerly known as "Corowa", has long been a highlight in the calendar of many developmental biologists, particularly those in the Australian insect community.

Traditionally, AIMB is held as a 2 day long retreat, with each lab being allocated a block of time to present. This year, however, AIMB was split into two separate events. The first event was a day of talks incorporated into the annual meeting of the Genetics Society of Australasia, in Melbourne. This was an exciting day of excellent talks, but with only one day available, many of the graduate students didn't get an opportunity to present a talk.

Therefore the AIMB co-Chairs for 2011 (Michael Murray and Leonie Quinn) organised a second AIMB meeting specifically to provide Honours, Masters and early PhD students a forum to give oral presentations.

For many of the twenty students that

spoke, this was the first time they had presented their research outside of their departments. In spite of this, talks were of very high quality, and covered a wide range of insect molecular biology topics from fundamental aspects of cell biology (e.g. transcription, proliferation, growth and apoptosis), developmental topics such as morphogenesis and pattern formation, genetic regulation of copper and zinc homeostasis, population genetics of moth pest species and odorant receptors, and bioinformatics.

In keeping with the theme of providing opportunities for new researchers, sessions were chaired by three late stage PhD students/early post-docs; Rosemary Manhire-Heath (Murray/Saint lab, Uni. of Melb.), Adrian Monk (Hime lab, Uni. of Melb.) and Jessica Lye (Burke lab, Monash Uni.).

As is usual with AIMB, many talks dealt with the Developmental Genetics and Cell Biology of the fruit fly, *Drosophila melanogaster*. The day kicked off with Melissa Pert (Saint/Murray lab, Uni. of Melb.) who described her work in identifying and analysing new genes regulating cell migration in the *Drosophila* midgut. She was followed by Arjun Chahal (Hime lab, Uni. of Melb.), who discussed the role of Snail family genes in stem cell populations in *Drosophila*. Michelle Bennett and Alex Johns (Warr lab, Monash Uni.) described their research into *torso-like* and the genetic regulation of terminal patterning in the fly. Heidi Wong (Saint lab, Uni. of Melb.) discussed genes that can promote apoptosis in cells with a weakened mitotic checkpoint, while Nida Zeeshan (Saint Lab, Uni. of Melb.) investigated polyploidy as a cause of tumourgenesis in the fly. Following on from this Nicola Cranna and Amanda Lee (Quinn lab., Uni. of Melb.), described their investigations of the role of Hfp and Psi in controlling transcription of the *Drosophila myc* orthologue, while Lucas Dent and Sam Manning described the continuing progress in the Harvey lab (Peter MacCallum Cancer Centre) in elaborating the genetic heirarchy controlling the Hippo growth pathway.

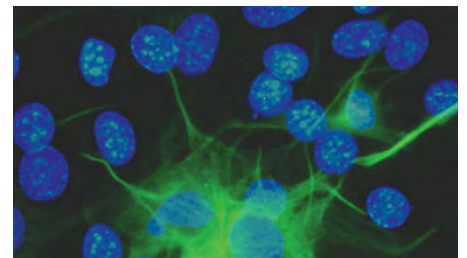
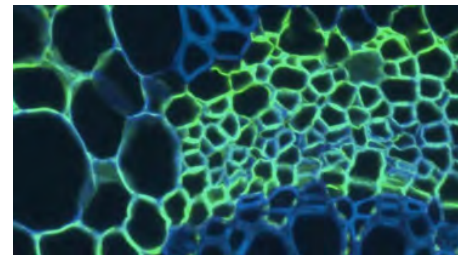
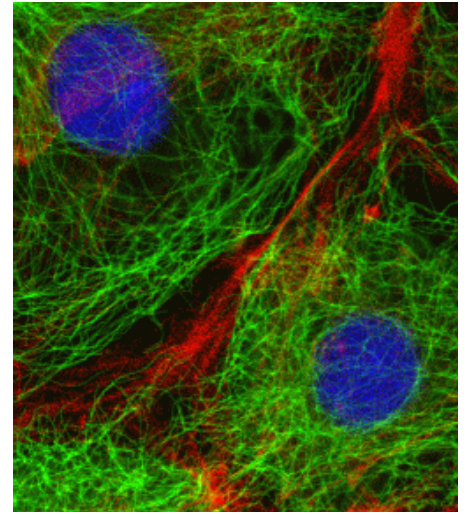
The day concluded with the presentation of three prizes. A



\$200 ANZSCDBI-sponsored prize for best talk in the field of Developmental or Cell Biology went to the first speaker of the day, Melissa Pert (left) for her work on the genetic regulation of mid-gut migration in the fly. Prizes of \$100 each, sponsored by OzDros and Pathtech, were then awarded to two other students: Lucas Dent, from the Harvey lab at the Peter MacCallum Cancer Centre, who described the proteomic identification and subsequent genetic analysis of two new GTPase regulators of the Hippo pathway; and Phoebe Watt, an Honours student visiting from Sean Millard's lab in the University of Queensland, described powerful genetic techniques employing both phiC31 and FLPase mediated recombination to make specific modifications to endogenous gene loci.

All in all, the day was a great success, not only accomplishing the essential task of provid-

ing valuable experience to early stage researchers, but also giving the more senior amongst us the opportunity to see the depth of talent in our future leaders in the Developmental Biology field.



Membership News

Dr Julia Horsfield, Otago Zebrafish Facility Director, was awarded a Royal Society of New Zealand Marsden grant of \$990,000 for the project Linking cell division with differentiation: is stem cell fate sealed by cohesin? In its best-known role, cohesin acts as a binding agent, holding DNA pairs together during cell division. Dr Horsfield's research was among the first to identify a role for cohesin in gene expression, including genes that maintain stem cell identity. This project will examine how cohesin might determine cell fate, using zebrafish embryos.



Have you seen the recent link on the ANZSCDB website homepage?

There is a link to BSCB – Images, this is a link to the British Society for Cell Biology site that has a range of cell and developmental biology images with explanations and is an

The triumph of biology is the ability to control physics and chemistry in time and space. It is the meeting place of both probability and predictability where the singular event is often, if not always, stochastic but the summation of related events gives us the predictable outcome required for the survival of the organism. Cell and developmental biology are increasingly utilising molecular approaches to both capture individual events and integrate them into increasingly sophisticated models of cell and tissue structure and function. The 2012 Hunter Meeting will provide insights into these mechanisms across a range of systems and processes. Our international speakers are at the forefront of research in areas as diverse as the dynamic organisation and regulation of intracellular space, the organisation of cell function in the context of complex tissues and the integration of information at the level of molecules, cells and tissues. Yet what is emerging is the remarkably common principles that account for the cellular and developmental processes which produce the viable organ-

excellent resource for teaching.

News & Notes

ComBio 2012
Adelaide Convention Centre
23 - 27 September 2012
Advertise the meeting

BSCB - Images
Cell Biology images for educational purposes [more...](#)



The 7th International Proteolysis Society (IPS) <http://www.protease.org/> bi-annual conference was a great success in San Diego, California. Most biomedical and some botanical applications of protease research were presented. Featured talks included new data on cathepsins, caspases, serpins, thrombin, MMPs, dipeptidyl peptidases, rhomboid proteases, convertases and the proteasome. The new field of fluorescence - guided surgery (Roger Tsein) fascinated us. We saw that the activity - based fluorescent probes for proteases, particularly cathepsins, inside cells and inside mice, which was a new area at IPS conference only 4 years ago, are now widely used. The development of such probes grew in part from an understanding of substrate specificity, which is now an expanding field as the highly specialised tools of degradomics are disseminated. Many talks focussed upon new discoveries of protease substrates using degradomics.

The next IPS conference will be in 2013, Oct 24-29, in Capetown, South Africa. The next protease - focussed conference will be the Gordon Conference on Proteolytic Enzymes 17-22 June 2012 in Italy.

Mark Gorrell, IPS Treasurer

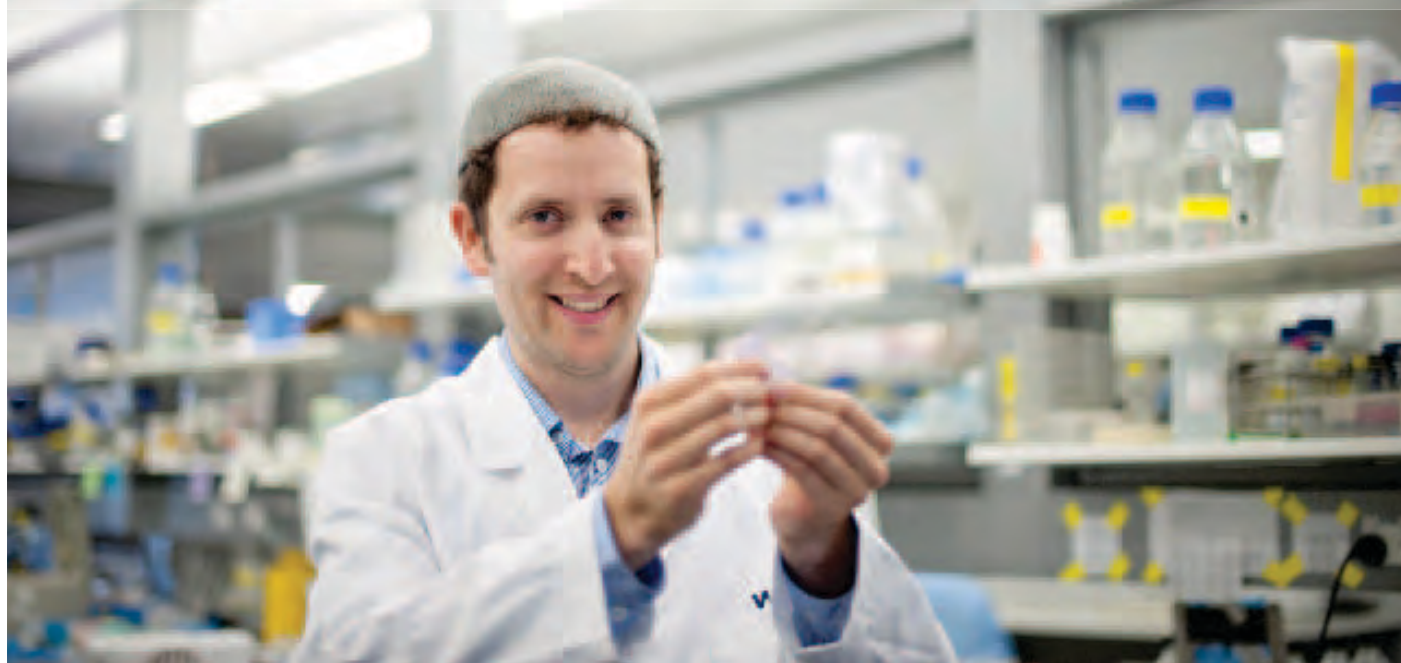
Malaria researcher Dr Jake Baum has won the Walter and Eliza Hall Institute's 2011 Burnet Prize for his work to understand the 'motor' that drives movement of the malaria parasite. Dr Baum's research aims to identify crucial parasite proteins that are involved in infection and transmission of malaria parasites, including the most viru-

tle terrifying, to look at the list of previous winners and see the impact they have had, particularly in translating their research to real human health outcomes. It is my greatest hope that we might see the same impact from our work in the future."

Dr Baum said there was still a lot that was not understood

regulators to disable the malaria parasite," he said. "If the parasite can't move, it can't infect the mosquito or human host, and the disease won't have a chance to reproduce or spread." World Health Organization figures indicate that about half the world's population is at risk of contracting malaria, which is spread by the bite of infected

Burnet Prize for Research on Malaria Parasite 'Motor'



lent strain that infects humans, *Plasmodium falciparum*. Such proteins could serve as important targets for development of new antimalarial drugs. Dr Baum said he was honoured to receive the Burnet Prize. "The award is wonderful recognition for my research group, and I'd like to thank them specifically, along with my colleagues and the institute for their support over the past eight years," Dr Baum said. "It is humbling, if not a lit-

about the processes that regulate how malaria parasites move. "Our lab is focused on understanding the regulation of the parasite's actin-based motor and visualising the intricate processes underlying cell movement and invasion."

He said that the team was using genetics, protein chemistry and the latest tools in fluorescence microscopy and live-imaging to understand the cell biology of motility. "Our primary objective is to target key 'movement'

mosquitoes. Annually, there are 225 million cases of malaria and almost 800,000 deaths, mainly in children from sub-Saharan Africa.

In 2011, Dr Baum's group made two significant discoveries in the quest to better understand the internal controllers of malaria movement. They captured, for the first time, high-resolution images of malaria parasites in the act of invading red blood cells. "The beauty of the new imaging technology is that it

provides a quantum leap in the amount of detail we can see, revealing critical molecular and cellular events required for each stage of the invasion process," Dr Baum said.

The team also solved the structure of a key protein, actin-depolymerising factor 1 (ADF1), which is involved in controlling the movement of malaria parasites. The research overturned decades-long understanding of the relationship between protein structure and cell movement across almost all species, and could lead to potential new antimalarial, or even anti-cancer, drugs.

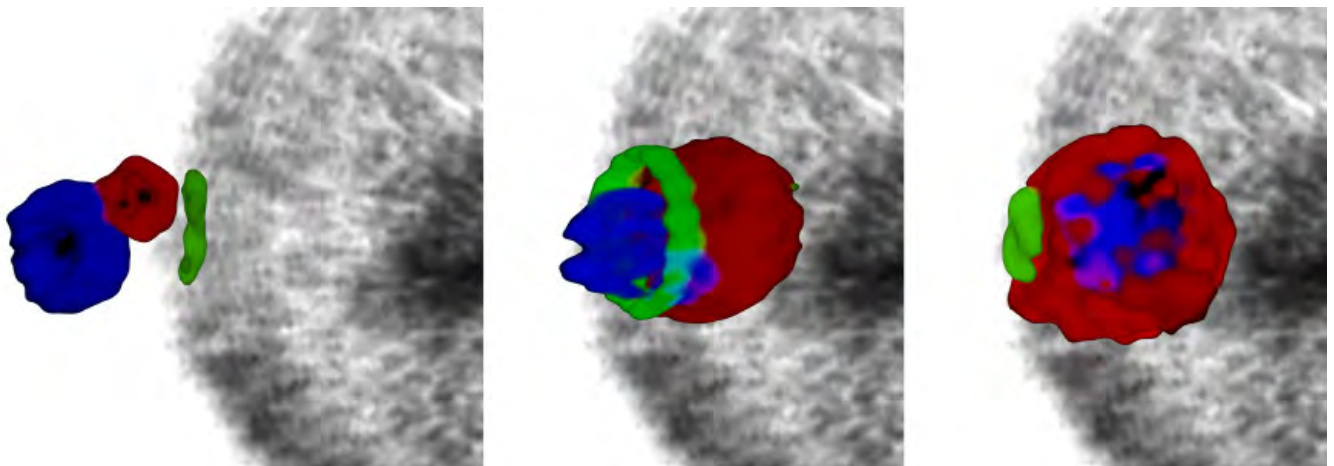
Dr Baum began his research career in human population genetics in the UK, studying the patterns of natural selection on the human genome. During his PhD he developed an interest in patho-

gens, and in light of the work being done at the institute in malaria parasite genetics, moved to Australia in 2003 to work under the mentorship of Professor Alan Cowman.

During his postdoctoral studies, and following an inspiring sabbatical at Yale University in 2006, Dr Baum started to focus on the mechanisms of malaria movement. "The holy grail of malaria research has been to find a vaccine or drug that is effective against all stages of malaria parasite infection," he said. "Since the parasite must keep moving at all times, we are trying to take apart the motor to understand every process involved, to find a target that meets this criteria. Over the next five years we hope to develop a complete 'toolkit' for drug development against motil-

ity, using a range of tools and techniques from biochemical through to whole cell to identify new targets in the malaria parasite.

The Burnet Prize is awarded annually to early-career scientists at the institute who have produced pioneering research. It was established in 1987 through a bequest of Sir Macfarlane Burnet and includes a cash prize of \$2000 and a bronze plaque created by Melbourne sculptor Michael Meszaros.



This image is a composite showing the behaviour of different parts of the malaria parasite as it invades a red blood cell, at nanometer scales. The three components of the malaria parasite are labelled with fluorescent proteins (blue = parasite nucleus, red = secretory organelle, green = tight junction).

Image 1: The parasite is about to invade the red blood cell. The tight junction (green) is like a window that the parasite brings with it and inserts into the red blood cell to gain entry.

Image 2: This image is mid-invasion, the first time this step has even been visualised. The parasite 'opens' the window it has inserted into the cell, and walks through. The secretory organelle (red) secretes its contents through the tight junction (green) and creates a vacuole which the parasite lives within in the red blood cell. In this image we see the parasite nucleus (blue) moving through the 'window' into the cell.

Image 3: The parasite has completed invasion and is within a vacuole inside the host red blood cell. The window has been closed again, and will break down at a later stage. The parasite is now enclosed within its vacuole (red), the nucleus (blue) showing the parasite safely inside.



2012 Academy Awards for Scientific Excellence Announced



Kat Gaus, recipient of the 2010 ANZSCDB Young Investigator Award and former Treasurer of ANZSCDB received the prestigious Gottschalk medal from the Australian Academy of Science

The winners of the Australian Academy of Science 2012 awards for scientific excellence have been announced.

Honorary awards of a medal and monetary prize are presented to career researchers for life-long achievements and outstanding early-career researchers under the age of 40. In addition, the Academy gives a number of awards for research support.

In 2012, the Academy will award a total of \$218 000 in honorary medals and research support.

In announcing the medals and awards, Academy President Professor Suzanne Cory said: "Each year, it is the Academy's privilege to recognise excellence in diverse fields of science. Several of the awards celebrate career-long contributions by some of Australia's most distinguished

researchers; others draw attention to remarkable discoveries made by younger investigators. The Academy warmly congratulates each of these outstanding awardees."

Most of the award winners will receive their medals at the Academy's annual conference being held from 2 to 4 May 2012.

2012 Early-career research awards

- Professor Harvey Millar, The University of Western Australia – Fenner Medal for research in biology (excluding the biomedical sciences).
- Dr Manuel Ferreira, Queensland Institute of Medical Research – Ruth Stephens Gani Medal for research in human genetics.
- Associate Professor Katharina Gaus, The University of New South Wales – Gottschalk Medal for research in the medical sciences.

Katharina Gaus, recently promoted to Professor, has been awarded the 2011 Gottschalk Medal from the Australian Academy of Sciences for outstanding research in the medical sciences. The award recognises her leadership in the field of cellular immunology and molecular



microscopy. The main aim of her research has been to gain a mechanistic understanding of the organisation of the plasma membrane within cells. She has pioneered fluorescence microscopy approaches to examine and quantify T-cell signalling on a single molecule level (super-resolution microscopy) in living cells. Her research has provided the first evidence for lipids being linked to T-cell activation on a molecular and functional level, and may explain why immune function is compromised in obese people.

The background of the entire page is filled with a complex, organic pattern of green lines. These lines form various shapes, including circles, spirals, and elongated loops, resembling biological structures like DNA or neural pathways. The lines are of varying thickness and are set against a plain white background.

Development

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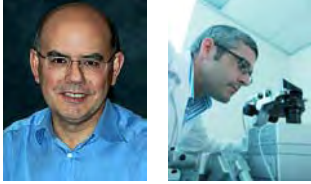
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A new community website for developmental biologists

<http://thenode.biologists.com>

Regional Round Up

New South Wales



Anthony Kee and Will Hughes

In October Dr Will Hughes (Diabetes and Obesity Program, Garvan Institute) became a NSW representative of ANZSCDB (a position he shares with Dr Anthony Kee, Neuromuscular and Regenerative Medicine Unit, School of Medical Science, University of New South Wales).

Dr Hughes is a leading cell biologist in the use of novel microscopy and image analysis techniques for examining membrane associated processes.

We would also like to thank Dr Thomas Fath for the fantastic job as outgoing NSW ANZSCDB representative, in particular for organising the 2010 and 2011 Annual Cell and Developmental Biology meetings. This is the annual scientific meeting of the NSW chapter of the Australian and New Zealand Society for Cell and Developmental Biology (ANZSCDB). In the last few years the calibre of International and National speakers has been outstanding and we think next year's meeting will be equally exciting.

Planning is well under way for the 18th NSW Cell and Developmental Biology. The meeting

is being organised by the two NSW ANZSCDB representatives Anthony Kee and Will Hughes. The meeting will be held at the Garvan Institute on Monday March 26th, 2012. As in previous years we will have a line up of exceptional international and Australian invited speakers and a number of talks chosen from submitted abstracts.

The 12th Hunter meeting will be held in the Hunter Valley in March 2012 (27th-30th). This is one of Australia's premier cell and developmental biology meetings. A number of NSW ANZSCDB members are involved in organising this meeting, including Peter Gunning who is co-convenor, and Sally Dunwoodie and Richard Harvey are session chairs.



Outgoing Regional Rep - Thomas Fath

Regional Round Up

Queensland



Michael Piper and Annemiek Beverdam

COMBIO was held this year at the Cairns Convention centre from 15 to 19 September. Queensland members on the organising committee Carol Wicking (Institute for Molecular Bioscience) and Rohan Teasdale (Institute for Molecular Bioscience) organised the brilliant Cell Architecture & Trafficking and Developmental Biology Streams and have been able to secure top plenary and invited symposia speakers including Hiroshi Ohno (Riken, Yokohama Institute), David Drubin (Berkeley), Matt Scott (Stanford) and Margaret Fuller (Stanford) for plenary speakers. Queensland researchers took away 3 ANZSCDB awards this year. The President's Medal is the highest honour that our Society bestows and this year recipient was Rob Parton (Institute for Molecular Bioscience). Rob is an internationally renowned cell biologist and fellow of the Australian Academy of Science. He is an expert on microdomains of the plasma membrane, with a particular focus on caveolae and caveolins, and is credited with demonstrating that lipid droplets are functional organelles in the cells. Dagmar Wilhelm (Institute for Molecular Bioscience)

won the prestigious ANZSCDB Young Investigator for her work focuses on sex determination and gonad development from the angle of gene regulation by noncoding RNAs. Michael Tallack (Institute for Molecular Bioscience) won the Toshiya Yamada Early Career Award for best oral presentation.

On October 14th 2011, the Queensland arm of the Australian and New Zealand Society for Cell and Developmental Biology (ANZSCDB) held a 1-day Cell and Developmental Biology Meeting at The University of Queensland's Institute for Molecular Bioscience. This meeting, made possible with generous support from the ANZSCDB and others, showcased the fantastic research into cell and developmental biology being performed in Queensland. The overseas plenary lecture was presented by Peter Dearden (University of Otago). We were also lucky enough to have two young and dynamic Australian researchers present the other plenary lectures, namely Kat Gaus (University of New South Wales), who presented her work on the molecular mechanisms of T cell activation, and Edwina McGlenn (Australian Regenerative Medicine Institute), who talked about patterning the early embryo. As well as this, we had a number of fantastic short oral presentations delivered by PhD students and postdocs from around the

Brisbane region. Over lunch and coffee we also had a very interactive and exciting poster session, which was extremely well attended. Prizes were awarded to the best oral and poster presentations; this year Josh Mylne (Institute for Molecular Bioscience) and Rajesh Ghai (Institute for Molecular Bioscience) won the awards for best oral presentations, while Michael Tallack (Institute for Molecular Bioscience), Elanor Wainwright (Institute for Molecular Bioscience) and Tam Duong (Institute for Molecular Bioscience) took the gongs for best posters. Thanks must go to all of those who contributed to the smooth running of this symposium. Overall, the meeting, which had over 100 registrants, was a great success, and we look forward to the next installment of this meeting in 2012.

The fields of Developmental and Cell Biology have further been strengthened by a strong representation of the field in the 2nd ECR poster symposium held at the Institute for Molecular Bioscience on 4 November 2011. This meeting provided an outstanding opportunity for around 100 ECRs to promote and discuss their research, enhance their networking skills and gain invaluable contacts across several leading Brisbane institutes in a relaxed yet enthusiastic setting. Gregory James (SBMS - UQ) won the student prize,

while Dipti Vijayan (AIBN) was the runner-up in that category. IMB's Michael Tallack (Institute for Molecular Bioscience) came first in the postdoc category, with Timothy Barnett (SCMB/Institute for Molecular Bioscience) claiming runner-up.

Furthermore, the Brisbane Developmental Biology monthly seminar series organized by the Brisbane Developmental Biology Group at the Institute for Molecular Bioscience has run for 14 years now and attracted also this year top developmental biologists from Queensland and beyond including Humphrey Yao (National Institute of Environmental Health Sciences, USA), Heather Young (The University of Melbourne), Catherine Boisvert (Australian regenerative Medicine Institute), Keith Jones (The University of Newcastle), Gail Risbridger (Monash Institute of Medical Research), Richard Burke (Monash University) and Edwina McGlenn (Australian regenerative Medicine Institute). The 12th Australia and New Zealand Zebrafish Meeting was held at Tangalooma Resort on Moreton Island, just off the coast from Brisbane, from February 6-9 this year. This meeting is the primary meeting point for the Australian and New Zealand Zebrafish research community for the exchange of new ideas, presentation of research outcomes, discussion of emerging technologies and forging of collaborations. International plenary speakers included Stephen Wilson (University College London) who presented the EMBO lecture, Scott Fraser (California Institute of Technology), Andrew Oates (Max Planck Institute) and

Lalita Ramakrishnan (University of Washington). ANZSCDB member Professor Alpha Yap (Institute for Molecular Bioscience) was this year's chair of the prestigious Gordon Research Conference 'Cell Contact and Adhesion' that was held at the Mount Snow Resort, Vermont, USA from June 19-24. Since its inception in 1973 this has been a premier meeting on the biology of cell adhesion, drawing inputs from many disciplines, including cell biology, biochemistry, structural biology and developmental biology. This year's GRC was sponsored by the ANZSCDB.

Queensland ANZSCDB researchers snagged research prizes at this year's Queensland Health and Medical Research Awards. Kelly Smith (Institute for Molecular Bioscience) won the Postdoctoral Researcher Award for identifying the gene *wickham*, which causes a heart valve defect. Vicki Metzis (Institute for Molecular Bioscience) won the best oral presentation prize at the postgraduate student conference accompanying the Health and Medical Research Awards. Vicki's presentation was titled, "Novel roles for *Patched1* in nasal development and facial clefting disorders".

Finally, ANZSCDB member Professor Emma Whitelaw was elected to the Australian Academy of Science. Professor Whitelaw is current chair of the Queensland Institute of Medical Research (QIMR) Division of Genetics and Population Health, Head of QIMR's Epigenetics Laboratory and is an Australia Fellow. Furthermore, the Australian Academy of Science nominated ANZSCDB member Natasha

Behrendorff (School of Biomedical Sciences, UQ) to attend the 61st Meeting of Nobel Laureates in Lindau, Germany 26 June – 1 July 2011. She researches secretion in the exocrine pancreas.

Regional Round Up

South Australia



Quenten Schwarz and Natasha Harvey

2011 has been a busy year for the South Australian ANZSCDB members. On top of the conception of our first state Cell and Developmental Biology Meeting held at the Centre for Cancer Biology (22nd November) we also played a major part in the planning and execution of the 5th Barossa Signalling Meeting (23rd – 26th November) held at the Barossa Novotel. The Cell and Developmental Biology Meeting was well attended and the Barossa Signalling Meeting had record numbers (see reports for both events above). It was pleasing to see such a strong representation of ANZSCDB members at both events. The state members have also been busy organising Combio 2012. Special thanks go to Stuart Pitson, Yeesim Khew-Goodall, Sharad Kumar and Paul Thomas for their exceptional efforts on this front. Combio 2012 promises to be a grand event.

Several of our state members have received nationally and internationally recognised awards throughout the year. Stuart Pitson (Centre for Cancer Biology) was awarded the 2011 Merck-Millipore Research Medal from the ASBMB for his outstanding contributions to the phospholipid signalling field. Sharad Kumar (Centre for Cancer Biology) was awarded the Ranbaxy International Award (Medical Sciences- Basic Research) for “Seminal contributions to the understanding of programmed cell death and the regulation of the protein function by ubiquitination”. Paul Thomas (University of Adelaide) was awarded the Royan International Research Award for Reproductive Genetics for his research into XX male sex reversal in mice and humans. Finally, Quenten Schwarz (Centre for Cancer Biology) was awarded the BioSA Young Achiever Award for his work on schizophrenia. The state representatives are hoping to build on the successes of this year with even more events in 2012.



Outgoing Regional Rep
Yeesim Khew-Goodall



Regional Round Up

Victoria



Julian Heng and Jeffrey Mann

On November 16th this year, the Victorian Chapter of the AN-ZSCDB held its annual Melbourne Cell and Developmental Biology meeting within the Clayton Campus of Monash University. The day-long event boasted an impressive speaker list comprising 8 postdoctoral and 8 PhD student researchers. This year's program again featured an extensive range of animal models (nematodes, drosophila, rodents, chick, zebrafish) for understanding growth, development and cancer. One strong, recurrent theme within this year's speaker programme was the importance of a developmental biologist's perspective for understanding disease. Studies of muscle development in zebrafish provided new potential targets for therapeutic intervention, while a different study on the neuronal colonisation during development for gut motility in mice offered unique insight into how obstructive bowel disorders in juveniles could potentially be treated with cell transplantation therapy.

Our speaker programme was augmented by the excellent presentations from our plenary speakers, Professors Christophe

Marcelle (ARMI, Melbourne) and Jenny Stow (IMB, Brisbane). Professor Marcelle's presentation on myogenesis in the chick featured a powerful combination of cutting edge molecular techniques, timelapse confocal microscopy and novel computer modelling/visualisation techniques. Professor Stow's equally impressive presentation featured high resolution microscopy techniques to elucidate the distinct roles for cell sorting machinery to regulate cytokine secretion. The audience was overwhelmed by the quality of their presentations, which together stand as a wonderful representation of the calibre of cell and developmental biology research within Australia.

While judging for the best presentations was made difficult by the excellent quality of all presentations on the day, this year's Merck/Roche student speaker prize went to Ms Micka Bertucci (Monash University), while the Leica postdoc speaker prize was awarded to Dr. Lincoln Stamp (Murdoch Childrens Research Institute). We would like to sincerely thank our sponsors for providing continued support for our meeting which is an important vehicle to showcase the strong and growing local talent in developmental biology in Melbourne.

Convenors 2011 Melbourne Cell and Developmental Biology meeting.



Regional Round Up

Western Australia



Evan Ingley and Archa Fox

WA has a new state representative of the society, to add to the existing team of Aleksandra Filipovska and Evan Ingley. Dr. Archa Fox is a cell and molecular biologist interested in understanding nuclear substructures and how they alter gene regulation in cancer. Archa's research uses 'paraspeckles' as a model system for tackling some of these issues. She discovered paraspeckles during her post-doctoral time in the laboratory of Professor Angus Lamond, at the University of Dundee, UK. Since arriving back in Australia in 2006, and joining the Western Australian Institute For Medical Research (WAIMR), Archa has focused on many aspects of paraspeckle biology, including being part of a team that discovered paraspeckles are unusual in that they are built around a long noncoding RNA scaffold. Amongst other areas, her research now investigates the structure and function of paraspeckles, as well as possible applications for the unusual gene regulatory properties of paraspeckles and their components. She hopes to add to the growing profile of the ANZSCDB in WA and looks forward to a fruitful relationship with the

Society!

Together the WA state representatives will continue the work initiated by Dr Alexandra Filipovska on identifying WA based investigators whom undertake cell and developmental biology and bring them together under the umbrella of the ANZSCDB to increase local and national/international interaction and collaboration. We also aim to continue our focus on the local CBSM and ASMR meetings as important forums to provide intellectual stimulation and support for students and early career researchers.

We are looking forward to hosting ANZSCDB members in 2013 attending the Combio2013 meeting (22 - 26 September 2013, Perth Convention Centre) and are hoping members make the most of this opportunity to experience the delights of WA as well as experience a superb scientific meeting.

Many WA based ANZSCDB members are also looking forward to the completion of the redevelopment of the Queen Elizabeth II Medical Centre in the coming years that will significantly enhance their capacity for interaction and collaboration by bringing together several major research institutes (Western Australian Institute for Medical Research, Telethon Institute for Child Health Research), hospitals

(Sir Charles Gairdner Hospital, Princes Margaret Hospital) and educational facilities (University of Western Australia) onto one campus/locality.



Outgoing Regional Rep -
Aleksandra Filipovska

Regional Round Up

New Zealand



Peter Dearden and Justin O'Sullivan



Christchurch earthquakes

2012 has been a huge year for cell and developmental biology here in the deep south of New Zealand. Most devastating has been the effects of the Christchurch earthquake. Many researchers in Christchurch are still out of their labs, or in borrowed ones, due to building damage. We wish them all luck in returning to normality.

One a more positive note, this year we ran a developmental biology satellite meeting to Queenstown Research week, an conference that occurs every other year. This year the meeting attracted excellent national and international speakers including Sue Brown (Kansas State University), Cassandra Extavour (Harvard), Victoria Prince (Chicago), Robert Ho (Chicago), Sebastian Bouret (University of Southern California), Arthur Lander (University of California), Anne Calof (University of South-

ern California), Daniel Nettles (Newcastle), Alan Davidson (Auckland) and Runlin Ma (Chinese Academy of Sciences). The meeting was a huge success and we aim to repeat it every other year. If you are looking for a local meeting with diverse international flavour, then mark this meeting down for late August 2013.

This year has also been a good one for hiring new people in cell and developmental biology with Dr Megan Wilson, ex Koopman and Dearden labs, achieving a lecturing position at the Anatomy Department, University of Otago, and Dr Lynette Brownfield, who works on male germline development in plants, being hired by the Biochemistry Department at the same University. Indeed the Anatomy department held a one-day symposium on development and reproduction in November with David de Kretser as an invited

speaker, indicating their strength in this area.

Grants and awards have also flowed to Cell and Development researchers with Christine Winterbourne winning NZ's top research award, the Rutherford Medal, for her work on cellular oxidative stress. Stephen Robertson, Christine Jasoni and Liz Frans were awarded a Marsden Grant for a project on a human developmental condition, and Liz Duncan, a previous Toshiya Yamada award winner, being awarded a Marsden grant for work on the development of Aphids.

All in all a good year for cell and developmental biology in the shaky isles, we are looking forward to a better one next year!



Robert Ho, University of Chicago

Member Publications

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[Dynamins inhibitors induce caspase-mediated apoptosis following cytokinesis failure in human cancer cells and this is blocked by Bcl-2 overexpression.](#)

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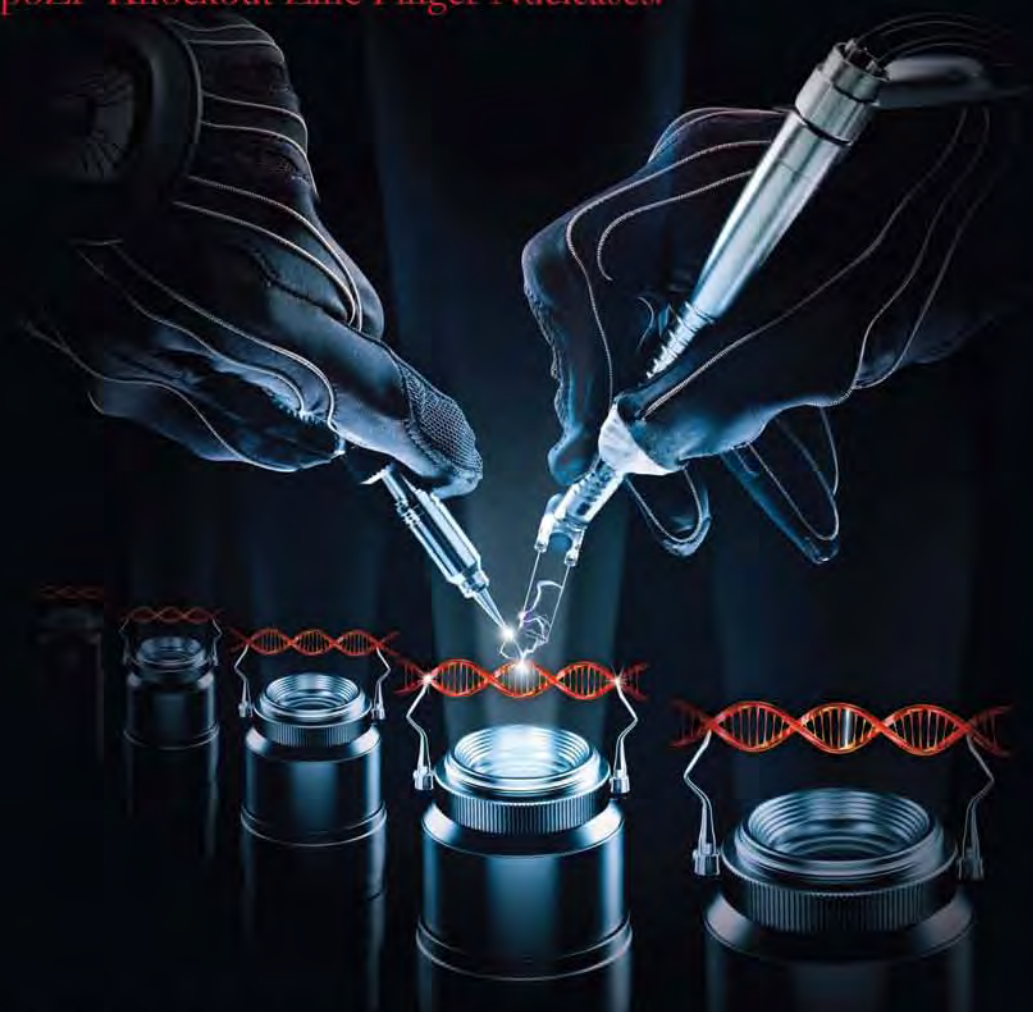
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Development In press.

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Your Committee Members



MIRANDA GROUNDS

University of Western Australia
Miranda has focussed on factors controlling the repair of damaged skeletal muscle and on potential treatments for muscle disease such as Duchenne's muscular dystrophy. Her research has pioneered many studies into factors controlling skeletal muscle regeneration with a particular emphasis on my-

ogenesis in post-natal skeletal in vivo, and ongoing interest in the role of extracellular matrix. Current research includes such things as in vivo role of IGF isoforms, inflammation and anti-cytokine therapies, all with applications to skeletal muscle wasting.
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CHRISTINA MITCHELL

Monash University
The research group led by Christina is currently pursuing the identification and characterization of novel proteins that regulate cell growth and differentiation. The team has two major fields of research; 1) characterizing several lipid phosphatases that terminate signals generated by the proto-oncogene

PI 3-kinase. 2) We have cloned and characterized a recently identified family of proteins, comprising on four and half LIM domains, which are predominately expressed in skeletal muscle.
christina.mitchell@monash.edu



RICHARD HARVEY

Victor Chang Cardiac Research Institute
The molecular dissection of heart development is important not only for understanding congenital heart disease causation and approaches to amelioration, but also to adult heart adaptation, stem cell deployment and disease. The aim of the Developmental

and Stem Cell Biology Division at the institute is to understand how different genes work together individually and in networks to guide development of an animal and its organs and how pathways might be augmented, particularly in regeneration.
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PHIL CROSIER

University of Auckland, New Zealand
Phil's major research interest is in the regulation of cell growth and differentiation, and lineage commitment. In this research he uses the zebrafish model system to investigate the transcriptional regulation of stem cell function and development of the innate and adaptive immune systems. In this

work the zebrafish system is also being used to model insights into human disease and utilize these systems in chemical genetic screens.
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Your Committee Members



ALPHA YAP

Institute for Molecular Bioscience, University of Queensland

My laboratory studies on set of cell-to-cell interactions, those that occur when cells attach to one another. We focus on the cadherin family of cell adhesion receptors. These critically determine the ability of the cells to recognise one another and organise into

coherent tissues. The importance of these receptors is emphasised by the fact that loss of cadherin function promotes cancer progression in epithelial tissues - the commonest form of cancers.

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PETER KOOPMAN

Institute for Molecular Bioscience, University of Queensland

Our group focuses on genes controlling the formation of various organs in the developing embryo. Our main interest is striving to understand the events that determine whether an embryo develops as a male or a female. We also specialise in the identification and

characterization of other sex development genes using techniques such as microarray screening and transgenic mouse models and studying how these affect sex development. We are interested in how an embryonic cell type known as germ cells comes to develop as a sperm or egg.

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SHARAD KUMAR

The two major interests in our laboratory are: 1) programmed cell death and (2) regulation of protein stability and trafficking by ubiquitination. Apoptosis plays a fundamental role in cell and tissue homeostasis and its misregulation results in a variety of human diseases. We are studying the function and regulation of caspases

that act as effectors in apoptosis. We also study ubiquitin-protein ligating enzymes (Nedd4 like proteins) The Nedd4 family belong to the HECT class of E3's. We are also studying a group of proteins that regulates the function of the Nedd4 family of E3's.

Sharad.Kumar@health.sa.gov.au

Changing the Guard

Farewell to an exemplary
helmswoman and to
State Representatives

who have supported and grown
the Australia and New Zealand
Society for Cell Development
and Biology (ANZSCDB) during
their time officiating.

Thanks to these members
of both the Executive Team
and State Representatives
who have contributed to the
successful governance of the
ANZSCDB. Without your tireless
commitment and dedication
the Society would not be in the
position it is currently in. We
take the opportunity to wish you
well with your endeavours and
hope that you will continue to be
an avid support of the ANZSCDB
in the future.

We farewell:

Prof Edna Hardeman, who acted
as the Society President for the
past three years.

State Representatives:

- NSW: Thomas Fath

(University of New South
Wales, Sydney)

- QLD: Eva Kovacs (Institute
for Molecular Bioscience,
University of Queensland)
- SA: Yeesim Khew-Goodall
(Centre for Cancer Biology,
Adelaide)
- VIC: Peter Fairlie (Monash
University, Melbourne)
- WA: Aleksandra Filipovska
(Western Australian Institute
for Medical Research, Perth)

On the flip side of the
farewells are welcomes. We
are delighted to be able to
introduce the following officers
and representatives to the
ANZSCDB.

President: Peter Currie

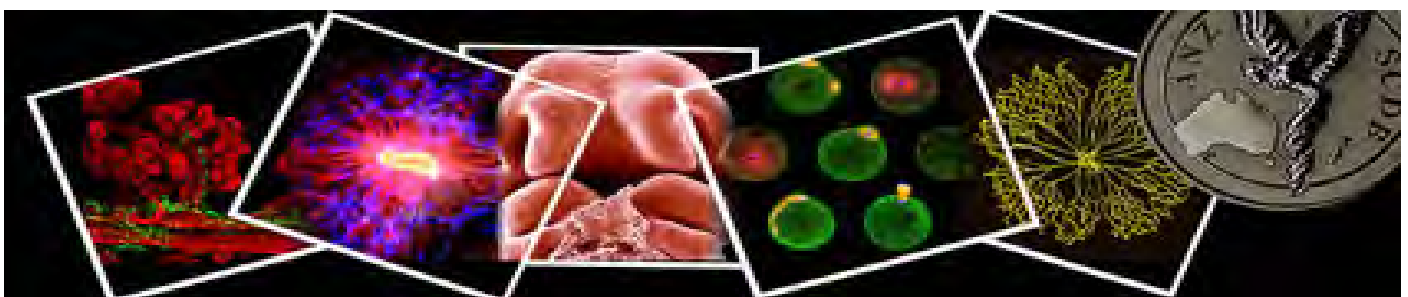
President Elect: Carol Wicking

Wiki Master: Tia Ditommas

State Representatives:

- NSW: Will Hughes (Garvan
Institute, Sydney)
- QLD: Annemiek Beverdam
(University of Queensland,
Brisbane)
- SA: Natasha Harvey (Centre
for Cancer Biology, Adelaide)
- VIC: Jeffrey Mann (Murdoch
Childrens Research Institute,
Melbourne)
- WA: Archa Fox (Western
Australian Institute for
Medical Research, Perth)

We look forward to the
continuation of the work
already undertaken by past
Executive Members and State
Representatives ■



Your Executive Team



President

PETER CURRIE

Australian Regenerative
Medicine Institute
Monash University
Clayton VIC

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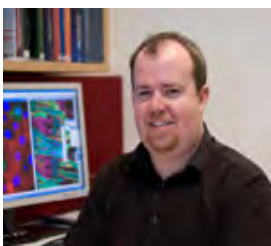


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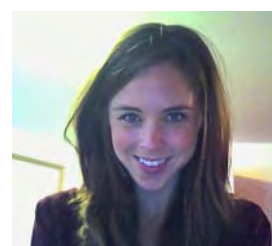


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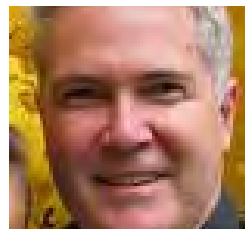
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