Australia and New Zealand
Society for Cell and Developmental Biology
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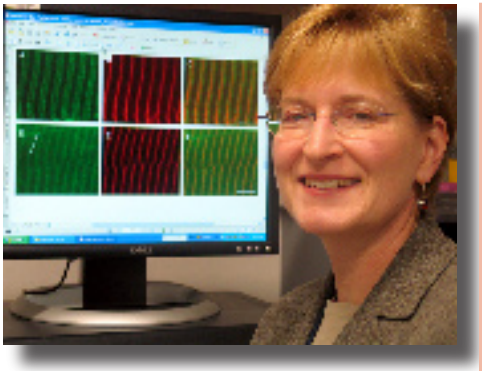

Edna Hardeman

IN THIS ISSUE

President's report.....1
Editor's column.....2
Profile:
Prof. Alpha Yap..... 5
Conference annoucements..... 8
ANZSCDB Young Investigator Awardees:
Ruth Arkell.....13
Kieran Harvey..... 13
Reports:
AHMRC.....14
Science meets parliament.....15
Muscle Coloquium..... 16
Executive officers/committee members..... 18

MAXIMISING YOUR RESEARCH IMPACT

THE ROLE OF INTERNATIONAL COLLABORATION

Internationally collaborate or perish?

A recent study from the Forum of European Australian Science and Technology has provided convincing data to support the view that international collaboration increases the impact of Australian science in the global arena. The report measured the median citation rates of publications from 1991-2005 authored by Australians alone, Australians plus Europeans, Australians plus North Americans and publications co-authored by researchers from all three locations. The conclusion is unlikely to surprise anyone: in medical and health sciences the median citation rate for Australian only papers (1.05) was substantially below that of Australian plus European ((1.8) and Australian plus USA ((2.1) and the highest rate was 3.6 for papers with co-authors from all three geographical locations. A similar conclusion derives from analysis of biological research.

What does it all mean?

There has been increasing support for the proposition that we should have mechanisms in place which facilitate international networking and collaboration. The main policy drivers for this approach are identified in the study of Matthews et al (FEAST Discussion Paper 1/09; http://www.feast.org/document.php?ID=1) :

• "Reduced unnecessary duplication of research efforts,
• Enhanced economies of scale and scope in research teams,
• An improved ability to exploit synergies between different capabilities, types of instrumentation and natural circumstances,
• Improved knowledge transfer,
• Enhanced skills development and recruitment,
• More effective work addressing global challenges,
• Contributing to constructive international relations,
• Stimulating foreign investment flows, and
• Facilitating access to research infrastructure."

Governments are increasingly looking to both measure and maximise productivity from academic research and in both the biological and medical and health sciences. The fact that research in these areas is most effectively and efficiently measured by CPP (citations per paper) will enhance the acceptance of this analysis in government circles. Note that 78% of biological and 73% of medical and health sciences university publications are captured by the Web of Science. Hence bibliometric analysis of these research fields can be taken as a good indicator of research output and impact.

Is CPP the only relevant indicator?

What government really wants are patents, commercial outcomes, improved 'evidence-based' health outcomes and a high standard of population health care. These are quite hard to measure, particu-

Presidents Report

larly when a large fraction of the research activity is directed at the basic end of the spectrum, some distance away from practical application to either commercial or health outcomes. In addition, CPP is very easy to measure; whereas, commercial and health outcomes are much more difficult to measure and involve complex considerations often involving multiple inputs from diverse members of a research field. Whether it is 1) at best, a poor surrogate to use CPP or 2) at worst, a distorting exercise that takes us away from the real objective of publically funded research is not the issue for this discussion. CPP has provided some hard numbers that cannot easily be dismissed. Whether they reflect a true indication of the value of research activity or a poor approximation they will be taken seriously and probably do indicate a trend that is both real and should be taken seriously.

Government support for international collaboration

Mathews et al. recognise that government support for international collaboration will be enhanced by this analysis: "In general terms, the best type of case to make for increasing the level of funding available to support international engagement in research will be the case most likely to influence the Treasury (or Central Economic Ministry to use the generic term). This will inevitably tend to take the form of a productivity equation and it is therefore important to recognise that citation impact will, in such circles, tend to be approached as one element in productivity assessments. Given this, the scope exists to assess the extent to which increased support for international research collaboration can be expected to generate a productivity dividend – as expressed in the impact on citation rates."

Detailed analysis of Australian research output

International collaboration is impacting on Australian research output. International co-authorship of Australian publication increased from 21% in 1991 to over 44% in 2005. Thus, international collaborative papers are increasing at over twice the rate of Australia alone papers. This trend is observed over a wide range of disciplines indicating that there are general principles at work here which go beyond any discipline specific issues. Hence, there is a strong incentive to pursue international collaborative research. This could be used to argue that an increased proportion of national research funds should be made available to support international collaboration in order to increase our global impact.

Global Collaboration Clusters (GCCs)

One of the major surprise conclusions to come out of this study is the recognition that the traditional view of supporting discrete bilateral collaborations may be counterproductive. Instead, we should be focussed on participation in GCCs. This does not mean that all research activity should be seen from this perspective, but it does identify GCCs as one way to increase our global impact. For many of us, this is something we do instinctively, but for others, this is food for thought, particularly as government takes increasing interest in our research output and contribution to improved commercialisation and health outcomes.

ANZSCDB's role in fostering international collaborations

A primary role of ANZSCDB must be to support events that provide opportunities for members to engage in global collaborations. At a practical level, ANZSCDB is increasingly going to look to support activities that foster engagement of leading international researchers with the Australian research community. This involves two strategies, bringing the research leaders to you and providing opportunities to expose ANZSCDB to members of the international community.

Bringing international scientists to you through the support of international meetings organised locally . . .

EDITOR'S COLUMN

I hope you enjoy the first issue of the ANZSCDB newsletter for the year. We welcome new executive officers and committee members for 2009 & 2010.

Our president, Edna Hardeman, provides some insight into the value of internation collaboration. We also hear about Alpha Yap's (past president) life as a scientist.

Congratulations to the two ANZSCDB Young Investigator Awardees, Drs Ruth Arkell and Kieran Harvey.

Please keep me updated with any comments, news and research advances that you would like to share with other ANZSCDB members.

Megan Chircop (nee Fabbro)
mchircop@cmri.com.au

ANZSCDB's Distinguished Visiting Lectureship in Cell & Developmental Biology Program sponsors an internationally renowned overseas cell and/or developmental biologist to speak at the Hunter Cell Biology meeting (http://hcbm.mtci.com.au/) with associated visits to the laboratories of two ANZSCDB members. This year ANZSCDB's distinguished visiting lecturer was Lila Solnica-Krezel from Vanderbilt University USA who spoke on mechanisms of gastrulation in zebrafish. Alpha Yap, Institute for Molecular Biosciences and Peter Currie, Monash Australian Regenerative Medicine Institute, hosted pre- and post Hunter visits.

ANZSCDB is providing sponsorship for an invited international speaker at the Barossa 2009 Meeting "Cell Signaling in Cancer and Development" (http://www.sapmea.asn.au/conventions/signalling09/index.html) which is the 4th in this series of highly successful meetings held in November, in the Barossa Valley, SA.

ComBio2009 is ANZSCDB's annual meeting and this year it will be held in Christchurch, New Zealand in December (http://www.uco.canterbury.ac.nz/conference/combio09/). ANZSCDB member organisers Peter Koopman, Peter Gunning, Ian McLennan and Phil Crosier have secured four prominent scientists in the fields of cell-cell interactions, stem cell and regenerative medicine, fibroblast growth factor, and wnt signalling as plenary speakers: Benny Geiger (Weizmann Institute), Tom Rando (Stanford University School of Medicine), Dave Ornitz (Washington University School of Medicine), Terry Yamaguchi (National Cancer Institute, Frederick MD). In addition, ANZSCDB sponsors two student travel scholarships to ComBio2009 and awards 4 postdoctoral and student prizes at the meeting.

Supporting and promoting international meetings in the Asia/Pacific region . . .

Recognising the wealth of muscle research talent in the region, former ANZSCDB president Miranda Grounds launched, and ANZSCDB provided sponsorship for the inaugural Indian Ocean Rim Muscle Colloquium (http://www.anhb.uwa.edu.au/about/Muscle2009) held at the University of Western Australia in January 2009. This meeting was designed to foster interactions between leading researchers in various fields of muscle research from India, Singapore and Australia. Plans for the second meeting January 2011 in Bangalore, India are underway.

Three prominent cell and developmental biology organisations have joined forces to host the ASCB/JSCB/RIKEN CDB meeting "Building the Body Plan: How Cell Adhesion, Signaling and Cytoskeletal Regulation Shape Morphogenesis" (http://www.ascb.org/japan2009/) that will be held in Kyoto, Japan in September 2009. ANZSDB is proudly sponsoring the session 'Adhesion and Cytoskeletal Regulation During Development' (http://www.ascb.org/Japan2009/program.cfm) .

ANZSCDB supports the first Keystone meeting in Australia on "Telomere Biology and DNA Repair" (www.keystonesymposia.org/9T1) that will be held in October 2009 at RACV Royal Pines Resort in Ashmore, Queensland.

Bringing you to the international scientists . . .

As a member of the International Federation of Cell Biology (IFCB), ANZSCDB was invited to send a member to the 2009 IFCB International Training Program in Cell and Molecular Biology (ITPCMB2009) in Taiwan in June15-26, 2009. Dominic Ng, Peter Doherty Fellow from the Bio21 Institute, Melbourne was chosen and was very generously provided with free registration, accommodation, local transportation, incident expenses, travel insurance and a travel scholarship covering airfare.

For the latest information about ANZSCDB sponsored activities visit the website http://www.anzscdb.org/.

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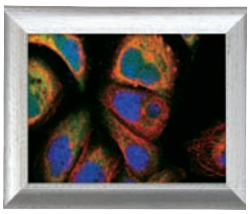

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Professor Alpha Yap

Head of division: Molecular Cell Biology
Institute of Molecular Biosciences
The University of Queensland,
St Lucia, QLD

Profile

ALPHA YAP

BUILDING CONTACTS ALONG THE PATH

For this first profile of the year, Past President of the Society and head of the Molecular Cell Biology division at the Institute for Molecular Bioscience, Associate Professor Alpha Yap chats to Fiona Wylie about life in science, in his own, ever-eloquent words.

Growing up in the leafy suburbs of Brisbane, Alpha Yap was surrounded by the common perception that if you worked hard doing A and B, then C would happen and eventually D, and you would be on that path for the rest of your natural life…and all would be swell. A few decades down the track, Yap knows that it doesn't work that way…and in fact, probably never did. "There is no one path in science, and you can change directions as many times as you like if necessary." His advice now to research scientists at almost any stage of their career is focussing on the questions that drive you and finding the personal desire and initiative to build your own path.

Yap remembers always being interested in questions of a biological and academic nature, through school and into a 6-year medical degree at The University of Queensland (UQ). It was during this undergraduate time that he first experienced scientific research in the form of a Bachelor of Medical Science 'gap' year. The decision to interrupt his academic studies was inspired mainly by one of his lecturers in physiology, Simon Manley, and a growing interest in the discipline of physiology. "Simon worked on the thyroid – he was very bright and had an impressive ability to articulate ideas. In retrospect, this interest in the biology of the thyroid gland was a neat link between epithelial biology, cell biology and endocrinology."

At this stage, Yap was keen to pursue research after finishing his medical degree. However, over the remaining three academic years he was drawn again into the clinical side of things, and particularly into endocrinology. "One thing then led to another without necessarily any great forward planning", recalls Yap, and he ended up completing another six years of clinical work at various Queensland hospitals to attain his specialist training. "At that time (mid-to late 80s), endocrinology was a very academic branch of clinical medicine in Australia. There was a lot of research happening in the area, and the idea prevailed that one could and should combine research and clinical practice in a career…and, importantly, there were opportunities to do that."

The dye is set

To pursue this academic side of endocrinology in the manner expected of a clinician doing research, Yap enrolled in a PhD at UQ and returned to Manley's group in the Physiology Department. During the subsequent three years, Yap became more and more interested in epithelial biology and adhesion. The broad aim of his PhD was to understand how the epithelial cells of a thyroid organise themselves into the 3-dimensional cyst-like gland structure. He was happy with the progress he made, despite one examiners' comment that still makes him smile (although somewhat wryly) – "it is a pity that you didn't solve the problem".

On completion of his PhD and the carrot of clinical medicine still dangling, Yap opted to continue along the research route. He moved himself and his young family to New York to work with cadherin guru Barry Gumbiner at the Memorial Sloan-Kettering Cancer Centre. He secured an NHMRC CJ Martin postdoctoral Fellowship to investigate the molecular and cell biology of adhesion and the role of cadherins.

After 3 years in the US, Yap returned to Brisbane for family reasons. Once home and continuing his postdoctoral research back at good ol' UQ, he realised that his interest and drive had moved a fair distance away from clinical practice. "I juggled for a few years between research and trying to keep up my clinical work, with weekend shifts etc. (to pay the school fees), but there was not an easy institutional way to do this then – we didn't have anything like the physician scientist positions available in the US."

His research focus and scientific reputation was now firmly adhered to exploring cadherins in epithelial biology (sorry!). He established his own research space in the Department of Physiology, initially in Manley's lab, and then soon after in his own right. "Simon and the Department were really great for providing that transitional help in terms of lab space, start-up funding etc. – it was a big help and not so easy to find here in Brisbane." An RD Wright Fellowship from the NHMRC followed, then a year later in 1999, Yap swapped it for a Wellcome Trust 5-year senior Fel-

lowship. “This was really the start of my independent research career.” His funding gradually built up from there from varied sources and in 2005, Yap became an NHMRC Senior Fellow. Already a joint appointee, Yap moved his lab entirely to the Institute for Molecular Bioscience at UQ in 2003 when they took up their new digs, literally only a stone’s throw away from his front door.

The genesis stage

Yap’s group in Physiology had started with himself and one research assistant back in 1998, but grew fairly rapidly with his first PhD and Honours students arriving soon after (Andrew Paterson and Radiya Ali). Within a couple of years, he had a group of 5-6 people, including his first postdoc Eva Kovacs who started in 2000 (she calls herself Alpha’s alpha postdoc). “I had zero experience in cell biology so Alpha himself, who still worked at the bench at the time, taught me a lot.” In fact, Kovacs has recently returned to Yap’s group as a senior research officer after a stint in the US. “It is a pleasure to be back in Alpha’s group. His contagious enthusiasm and enjoyment of science is highly motivational. He expects hard work, but he is hugely supportive of all his staff and students, encouraging them to take a bit of risk in aspiring to greater things. Alpha’s ‘personability’ also ensures that the laboratory environment is collegial and productive.”

Yap attributes the relative ease and success of his lab during that early growth time directly to those with him in the first few years like Kovacs – “everything was new and everyone was new to this including me. The expertise of the lab had to grow from scratch, and it is a remarkable tribute to all of those people that it was possible and happened so successfully in terms of productivity…they laid the foundations.”

Research claims to fame

The top of Yap’s list in terms of research achievements came out of his postdoctoral period in New York with Gumbiner. There, he demonstrated a new molecular mechanism for adhesive strengthening that involves lateral clustering of the cadherins (J Cell Biol 1998). “A decade down the line, this seems a relatively focussed question, but I think the idea that this is a dynamic molecular apparatus and not just ‘Velcro’ is the implication that persists from this body of work.”

Yap’s own group’s biggest contributions to date centre around demonstrating that cadherins are more than just effective glues – that when cadherins bind, they activate signal transduction pathways in the cell, and that signalling is important for the biological function of an associated receptor or cellular function. “Much of our work concerns cadherins regulating the actin cytoskeleton, and in this regard, we have added to the complexity of what we are dealing with in terms of molecular mechanisms. One of our ultimate goals is to understand how these interactions and functions are regulated in time and space.”

The broad vision is cadherin needing the actin cytoskeleton to do different things at different times for different purposes. “It may need to make filaments, couple to the contractile apparatus or reinforce itself against external forces…using separate sets of actin regulators for these different needs, and the coordination of these modules must be signal dependent. In some respects this idea is easier to articulate in

Alpha in the lab taking a break

a hand-waving fashion than to work out, but this is what my group is working towards." A recent and peer-driven honour for Yap that culminates a lot of his work is a recent invitation to Chair the Gordon Conference on Cell Contact and Adhesion in 2011 – "that's voted by the crowd, so I take it as a real honor to be asked."

In the bigger picture, Yap also wants to understand how adhesion-based programs control morphogenesis – the organisation and cellular patterning within tissues – and then how the unspooling of those programs contributes to human diseases such as inflammation and cancer. The short-term objective is to unravel the key molecular elements involved. Yap thinks of these elements as modules, whereby the choice of module is controlled by a hierarchy of factors - various signalling molecules and the mechanical landscape of the cell. "Characterising such modules and their components can be used to address two basic questions: 1. Are they truly important for morphogenesis? If we go into an organism like zebrafish, can we see them happening and if we mess them up, is morphogenesis perturbed, and 2. If we look in a model of tumourigenesis, can we see one of these modules being pathogenetically perturbed, and is it significant?"

The Life of Science

"The wonderful thing about science is that you meet a lot of people around the world who you like and who you value, both for who they are and for what they do." The first formative time for Yap in this respect was in Barry Gumbiner's lab, and particularly in his associations with the other people in the group. "I just happened to be there at a really great time – there were some pretty independent people." He particularly relished those times, often late in the afternoon waiting for an incubation or similar to finish, when people would chat…about science…and about problems or issues they were having. "I think in some respects I learnt the most then from them. Since that time, I have learnt from a lot of different people – those in my lab for a start – and in sort of a magpie-like fashion. You assimilate this stuff and sometimes it is directly about science – a beautiful insight that you can translate to your work and to others – and sometimes it is about the life of science."

One person who has been incredibly influential for Yap, especially when he returned to Brisbane, was Janet Keast, now at the Kolling Institute of Medical Research in Sydney. "I knew her as a graduate student when she was a new lecturer at UQ" Yap recalls. "She taught me immunofluorescence microscopy and later, how to write a grant, and we have stayed firm friends over the years." He particularly valued her as a role model, scientifically, but also on "how to balance all these ridiculous things in your life…basically how to be a good person in science."

Keast has equally fond memories of Yap, in his early days at UQ as an atypical PhD student with his excellent appreciation of both medicine and fine wine, and later, sharing discussions about the pains and pleasures of mid-career research. "In those early days at UQ, our friendship grew in parallel with a common scientific interest based on our mutual fascination by cell structure. I greatly valued our discussions and especially Alpha's acute insight into both his and my experiments. It was completely predictable from early in Alpha's career that he would become a successful independent researcher who would lead his field."

Another attribute listed by almost anyone who knows Yap is his impressive lexicon and command of the English language…although, it has the potential to get him in trouble in the presence of bad acoustics. Long-time UQ colleague and friend, Rob Parton remembers Yap introducing him at a conference soon after they had met. "Alpha described my career as "peripatetic", but I thought he said "very pathetic" – I was more than a little shocked."

Being the boss

The concept of being the boss has matured slowly for Yap with the genesis of his group and with the years – he cites sorting out his role in the group as one of the challenges. "I suspect a lot of other things have changed – for example, I fear that I can't pipette anymore." Although he misses direct contact with the data and its generation, he realises the importance of someone taking a step back, to ask what is the bigger picture. "This is always harder to do when you are at the coalface and also harder to do when you are just starting. It helps to have someone around whose job it is to do that - to help you see the story. And I guess that is me."

El Presidente…past

Yap values his time as President of the ANZSCDB last year. "I learnt a huge amount - about the inherent value of contributing more to the profession than just looking after your own lab and your own career, about working with different viewpoints and perspectives…and I learnt about innate goodwill." The tenure and the years of active contribution before that also really impressed on him how societies and their members can make a difference to the profession, even if it is only for enriching the community covered by the society.

He advises younger scientists and his peers to get involved. "There is a danger in the early stages of one's career of becoming too insular. It is essential to look beyond and to actively move out into the community to build your place there, because ultimately, if this is the direction you want to go in, you have to make your own path. A real danger to avoid is becoming passive in your career path and waiting for stuff to happen…generally you have to make it happen for yourself." He stresses that this means being successful in your research, but it also requires es-

tablishing ties with the local and broader community, through talking to visiting seminar speakers, going to conferences and the like. He sees the society as a good way to facilitate these ties and to actually enrich the community.

The other big things

Finally, "Frances Brodsky once gave me this neat piece of advice…that as a scientist there is room in your life for at least one other big thing, and importantly, you should use that time for those other big things." According to Yap, his trouble with this advice is having "too many other big things!" Top of that list for Yap is his family. He has really enjoyed watching his family grow, particularly his two children becoming very talented musicians and "really nice people". The rest of the list, in no particular order comprises music, reading literature, riding his very flash and fast bicycle and…watching Roger Federer play tennis – "he is just a magician." By the sounds of it, it is probably fortunate for science that most of Federer's matches are on in the middle of the night, Australian time.

Fiona Wylie

OF INTEREST TO OUR MEMBERS...

NHMRC and the 2009–10 Budget
In the budget announced Tuesday 12 May, NHMRC received $703.065 million in 2009-10 to fund health and medical research. This is an increase of $85 million from 2008.

NHMRC Research Fellowships Scheme
NHMRC is conducting a public consultation on its Research Fellowships scheme.

Around a decade ago, this scheme underwent major changes. The NHMRC's Research Committee has been considering whether any refinements or changes should be made. Submissions from all interested stakeholders are invited.

The Consultation Paper and submission form is available on the NHMRC website.

Submissions will close on Monday 29 June.

CONFERENCE ANNOUCEMENTS

4th Asian Epigenomics Meeting
Biopolis, Singapore, 24 - 25 August 2009
Epigenomics is an emerging frontier of research that addresses the gobal analyses of epigenetic landscapes at the whole genome level. This meeting will focus on understanding and analyzing epigenomes with an emphasis on human diseases and stem cells.
http://www.gis.a-star.edu.sg/epigenomics09/index.php

6th International Society of Developmental Biologists Congress
Edinburgh, UK, 6-10 September 2009
The British Society for Developmental Biology is hosting the 16th Congress of the International Society of Developmental Biologists Congress. The 2009 Congress is the premier conference of developmental biology and will highlight the best of international developmental biology,
www.isdb2009.com

7th International Meeting on Yeast Apoptosis
Graz, Austria, 9th-13th September 2009
This meeting will bring together investigators from around the world to present and discuss research employing yeasts as model organisms to study cell death and its role in stress responses, aging and development.
http://www.yeast-apoptosis.org

COMBIO2009

CHRISTCHURCH CONVENTION CENTRE

CHRISTCHURCH, NEW ZEALAND, 6 –10 DECEMBER, 2009

Matthew Turnbull (NZSPB/ASPS) and David Palmer (NZSBMB) invite you to join us at ComBio2009 in Christchurch. We are planning a comprehensive and wide ranging scientific programme with plenty of the traditional ComBio features. We also hope that you will take the opportunity to use Christchurch as a gateway to the fantastic New Zealand landscape.

Protein Structure and Function	Cells and Development	Signal Transduction and Gene Regulation		Genetics and Genomics
Emily Parker/Juliet Gerrard (U Canterbury)	Phil Crosier (U Auckland), Ian McLennan (Otago U)	Pete Shephard (U Auckland)	Jack Heinemann (U Canterbury)	Tony Merriman (U Otago)
Bostjan Kobe/Jenny Martin (U Queensland)	Peter Gunning (Westmead), Peter Koopman (U Queensland)	Phil Robinson (CMRI)/ Christina Mitchell (Monash U)	Merlin Crossley (U Sydney)	Christine Wells (Griffith U)

Plant Biology	Plant Ecophysiology and Global Change Biology	Microbiology	Agricultural and Horticultural Science	Medical Science
David Collings (U Canterbury)	Margaret Barbour (Landcare Research, NZ)	Andrew Hudson (ESR, NZ)	Jon Hickford (Lincoln U)	Allan Herbison (U Otago)
Steve Tyerman (U Adelaide)	Owen Atkin (ANU)	Hatch Stokes (Macquarie U)	Julian Heyes (Crop + Food Research, NZ)	Phil Hogg (UNSW)

Invited International Speakers

Sir John Walker FRS	Nobel Prize in Chemistry 1997	**Doug Eaton**	Why we don't drown every day; a new paradigm for lung fluid balance	**Yair Shachar-Hill**	Title to be advised
Vern L. Schramm	Enzymatic transition states and inhibitor design	**Misha Perouansky**	Mechanisms of anesthetic action – why we know so much and understand so little	**John Grace**	The links between the nitrogen and carbon cycles under climate change
Janet L. Smith	Enzyme domains in assembly lines for antibiotic biosynthesis	**Caroline McMillen**	Fetal and postnatal programming of obesity and metabolic disease	**Guillaume Tcherkez**	Isotopic fractionation in plant metabolism
David Ornitz	Fibroblast growth factors in development and disease	**Pankaj Sah**	Generation of patterned neuronal activity in the brain	**Aled Edwards**	Genome-scale studies of the structure and function of protein families
Benjamin Geiger	Mechanisms underlying environmental sensing via focal adhesions	**Tim Wiltshire**	Title to be advised	**Rudi Amman**	Analyzing the microbial catalysis of biogeochemical cycles by combining quantitative diversity studies with (meta) genomics
Thomas A. Rando	Molecular regulation of muscle stem cell fate	**Wan Lam**	Title to be advised		
Peter Lobel	Title to be advised	**Chris Hawes**	Imaging secretory pathway dynamics in living cells		
Michael Karin	Title to be advised				

Registration information and on-line registration: www.conference.canterbury.ac.nz/combio09

Enquiries – Email: combio09@uco.canterbury.ac.nz, **Phone**: +64 3 364 2534

Fourth Barossa Meeting

Cell Signalling in Cancer and Development

18 - 21 November 2009 Barossa Valley, South Australia

SCIENCE AMONGST THE VINES®

REGISTRATION AND ABSTRACT DEADLINE

28th August 2009, limit first 100 registrations.
A number of abstracts will be selected for oral and poster presentations.

CONFERENCE THEMES

MicroRNAs, 3D view of cytokine receptor signalling, Apoptosis, Cancer stem cells, Signalling circuits in immunity, Phospholipids in cell signalling, Signalling in vascular development, Signalling in morphogenesis, Novel therapeutics, Global regulation of signalling.

CONFIRMED SPEAKERS

Russell Basser, CSL Ltd, Melbourne
Christer Betsholtz, Karolinksa Institute, Stockholm, Sweden
Andrew Boyd, QIMR, Brisbane
Blanche Capel, Duke University Medical Centre, Durham, USA
John E Dick, University of Toronto, Ontario, Canada
Vishva Dixit, Genentech Inc, San Francisco, USA
Mark Febbraio, Baker Institute, Melbourne
Christopher Garcia, Stanford University, Stanford, USA
Antonio Giraldez, Yale University, New Haven, USA
Yusuf Hannun, Medical University of South Carolina, Charleston, USA
Doug Hilton, WEHI, Melbourne
Tim Hla, University of Connecticut, Hartford, USA
David Huang, WEHI, Melbourne
Lina Obeid, Medical University of South Carolina, Charleston, USA
Michael Parker, SVIMR, Melbourne
Rob Parton, IMB, Brisbane
John D Scott, University of Washington, Seattle, USA
Frances Shannon, JCSMR, ANU, Canberra
Steven Stacker, Ludwig, Melbourne
Alex Swarbrick, Garvan Institute, Sydney
Vinay Tergaonkar, Institute of Molecular and Cell Biology, Singapore
Mike Tyers, Samuel Lunenfeld Research Institute, Toronto, Canada
Carola Vinuesa, JCSMR, ANU, Canberra
Brandon Wainwright, IMB, Brisbane.

REGISTRATION OF INTEREST

Regular updates on the meeting will be available at **www.sapmea.asn.au/signalling09**
Log on and register your interest to attend the meeting.

ORGANISING COMMITTEE

Angel Lopez (Chair), Claudine Bonder, Michael Brown, Greg Goodall, Michele Grimbaldeston, Mark Guthridge, Natasha Harvey, Tim Hughes, Yeesim Khew-Goodall, Stuart Pitson, Paul Thomas, Jo Woodcock, Anna Nitschke.

MEETING SECRETARIAT

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SA PATHOLOGY

ASCB/JSCB/RIKEN CDB 2009 Meeting

Building the Body plan: How Cell Adhesion, Signaling and Cytoskeletal Regulation Shape Morphogenesis

September 21–23, 2009

Kyoto International Conference Center, Kyoto, Japan

www.ascb.org/japan2009

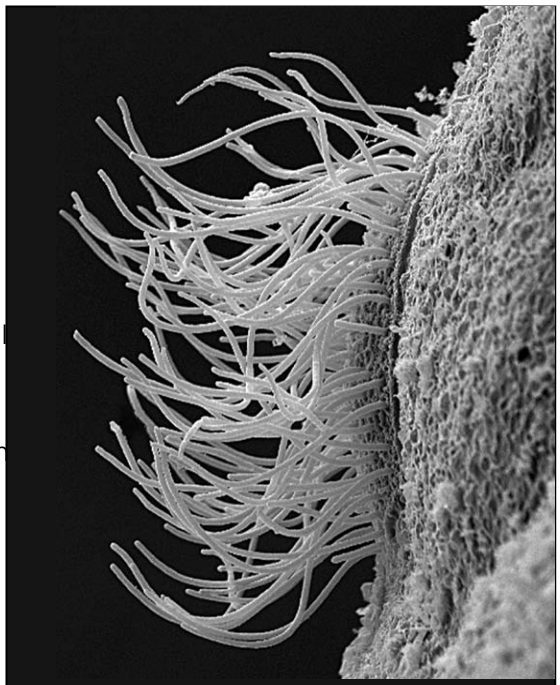
Co-organizers:

Mark Peifer, University of North Carolina, Chapel Hill, ASCB
Masatoshi Takeichi, RIKEN Center for Developmental Biology, Japan
Sachiko Tsukita, Osaka University, Japan, JSCB

Some of the most exciting areas in biology today are at the interface between cell and developmental biology. One challenge is to understand how cells integrate signaling events, cell adhesion and cytoskeletal regulation to shape the body plan. This meeting will allow graduate students and postdocs to interact with leaders in the field from around the world in an intimate setting. Thirty-six platform talks, 15 of which will be chosen from the abstracts, will complement afternoon poster sessions. Topics (subject to change) will include neural, development, tight and gap junctions, junctional complexes and cell polarity, signaling by junctional proteins, EMT and cell migration, morphogenesis and planar polarity, and cell adhesion and cytoskeletal regulation.

Confirmed Speakers:

David Bilder, University of California, Berkeley
Mikio Furuse, Kobe University Graduate School of Medicine
Shigeo Hayashi, RIKEN Center for Developmental Biology
Maria Leptin, Institute of Genetics, University of Cologne
Mark Peifer, University of North Carolina, Chapel Hill
Christine Petit, Institut Pasteur
Jonathan Pettitt, University of Aberdeen Institute of Medical Sciences
Pernille Rorth, Temasek Lifesciences Laboratory, Singapore
Iris Salecker, National Institute for Medical Research, London
Lilianna Solnica-Krezel, Vanderbilt University
Masatoshi Takeichi, RIKEN Center for Developmental Biology
Sachiko Tsukita, Osaka University
Tadashi Uemura, Kyoto University
Richard B Vallee, Columbia University
Valeri Vasioukhin, Fred Hutchinson Cancer Research Center
John Wallingford, University of Texas at Austin
Doris Wedlich, Karlsruhe Germany
Rachel Wong, University of Washington
Alpha Yap, University of Queensland
Jennifer A. Zallen, Sloan-Kettering Institute



Important Deadlines:

Abstract:	**Wednesday, July 22**
Travel Award:	**Wednesday, July 8**
Registration:	**Thursday, August 20**

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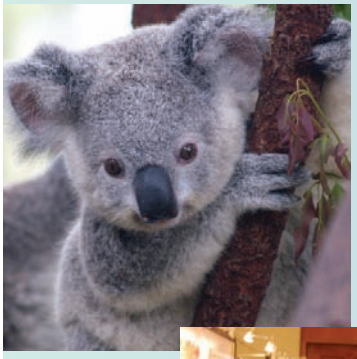

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Deadlines

Abstract and Scholarship: June 10, 2009
Late-Breaking Abstract: July 13, 2009
Early Registration: August 10, 2009

Keynote Address

Stephen C. West, Cancer Research UK
Identification of the Human Holiday Junction Resolvase

Plenary Session Topics

- DNA Damage Sensing and Signaling
- Telomeres and DNA Damage Response
- BIR and ALT
- DNA Repair
- Telomerase/Control of Telomerase
- Telomeres, DNA Repair and Human Disease

To view the complete meeting program, please visit
www.keystonesymposia.org/9T1.

Scientific Organizers: Roger R. Reddel, Michael B. Kastan and Titia de Lange

Confirmed Speakers

Frederick W. Alt, HHMI, Children's Hospital and Immune Disease Institute, Boston, USA
Steven Artandi, Stanford University, USA
Monica Bessler, Washington University School of Medicine, USA
Peter M. Burgers, Washington University School of Medicine, USA
Keith W. Caldecott, University of Sussex, UK
Junjie Chen, Yale University School of Medicine, USA
Karlene A. Cimprich, Stanford University, USA
Alan D. D'Andrea, Dana-Farber Cancer Institute, USA
Titia de Lange, Rockefeller University, USA
Marco F. Foiani, Instituto FIRC di Oncologia Molecolare, Italy
Eric Gilson, CNRS ENSL UCB IFR128, France
James E. Haber, Brandeis University, USA
Maria Jasin, Memorial Sloan-Kettering Cancer Center, USA
Jan Karlseder, The Salk Institute, USA
Michael B. Kastan, St. Jude Children's Research Hospital, USA
Martin F. Lavin, Queensland Institute for Medical Research, Australia
Jiri Lukas, Danish Cancer Society, Denmark
Michael J. McEachern, University of Georgia, USA
Peter J. McKinnon, St. Jude Children's Research Hospital, USA
Carolyn M. Price, University of Cincinnati, USA
Roger R. Reddel, Children's Medical Research Institute, Sydney, Australia
Jerry W. Shay, University of Texas Southwestern Medical Center, USA
David M. Shore, University of Geneva, Switzerland
Camilla Sjögren, Karolinska Institute, Sweden
Helle Ulrich, London Research Institute, UK
Raymund Wellinger, University of Sherbrooke, Canada
Stephen C. West, Cancer Research UK, UK
Woodring E. Wright, University of Texas Southwestern Medical Center, USA
Virginia A. Zakian, Princeton University, USA

Information current as of May 5, 2009. Please see website for updates.

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ANZSCDB Young Investigator Awardees

Dr Ruth Arkell

Young Invesigator Award recipient for 2009, Dr Ruth Arkell is a Senior Fellow in the Research School of Biological Sciences and Centre for Molecular Genetics of Development at the Australian National University in Canberra. Her research focuses on the gene networks required for mammalian embryonic development. In particular, she wants to understand those that function during the crucial stage of gastrulation, when the cells of a developing embryo organise into three distinct axes.

Arkell's current focus is the Zic family of genes and their role in several mouse models of genetic defects in forebrain development. "My group studies the three Zic genes that are expressed during gastrulation: Zic2, Zic3 and Zic5. We are currently trying to clone some of the Zic pathway components and work out how they might be regulated – upstream and downstream players, regulators, post-translational effects and interactions, and how the Zic genes themselves might be regulated at a cellular level." Very little is known so far about how the Zic gene products function, which according to Arkell is "good and bad."

Arkell started her academic science career at the University of Sydney, graduating with First Class Honours in Genetics and Biochemistry. With a growing interest in mouse genetics and embryology, Arkell headed to the UK in 1992 to do a PhD with Rosa Beddington at the National Institute for Medical Research at Mill Hill in London. There she focused on defects of mouse gastrulation and specifically the role of TGF-□-related molecules.

By 1996, attention in the genetics field was shifting to the mouse genome. This was great news for Arkell, who by this stage was just completing her PhD and firmly ensconced in the molecular world of mice embryos. "It meant that we could do so many more things with the mouse than was possible to that point." Arkell took up a postdoc at the Hammersmith Hospital Clinical Sciences Centre in London to work on a gastrulation-defective Gene Trap mouse mutant, before securing a 3-year MRC fellowship to work at the highly regarded MRC Mammalian Genetics Unit at Harwell in Oxfordshire in 1997. She was there until 2006, for the last 6 years as a programme leader.

At that time, the MRC Unit at Harwell was setting up extensive ENU-based programs, and this was a major drawcard for Arkell. With sequencing of the mouse genome nearing completion, the stage was set to start doing useful forward genetics in the mouse to identify mutagen-induced point mutations. At Harwell, Arkell launched into genetic screening of mice embryos for defects, with significant success. "Early on, we found two different mutations in two different Zic genes expressed during gastrulation…it was a pretty good basis to study this whole family." Importantly, of the five Zic genes in mice, four are related to genetic defects in humans including the forebrain defect, holoprosencephaly.

"We developed several good mouse models of genetic defects and all the work I am pursuing here now came out of those screens at Harwell." In addition to the approaches she had always used, Arkell has now added cell biology to her lab's repertoire – "our aim is to run the mouse genetics, embryology and cell biology together to attack the questions from all angles."

The Holy Grail for Arkell would be connecting all the genes in a network rather than just trying to understand how a single gene functions. "We want to understand what regulates a given gene and what it regulates to function. I would love to prove that even one of our genes acts in vivo as our in vitro work predicts, and that these things actually happen in the embryo." She admits that this is probably a "tough ask", particularly with mammalian embryos, but feels it is important to always keep this big picture in mind.

At the time of this interview, Arkell was very busy at home enjoying her very own experiment in developmental biology – with 7-week-old Sophia softly making her presence known in the background. Of course, science is inevitably never far away, and only two weeks earlier, Arkell was juggling 3am feeds and daytime sleeps (or no sleeps) with writing two NHMRC project grant applications. Arkell is now concentrating on enjoying Sophia for a while and working her way slowly through the enormous email list!

Dr Kieran Harvey

Dr Kieran Harvey from the Laboratory of Cell Growth and Proliferation at the Peter MacCallum Cancer Centre in Melbourne is the Young Investigator Award recipient for 2009. His research focuses on how the Salvador-Warts-Hippo (SWH) signaling pathway regulates organ growth and size during development. Activation of this pathway restricts organ size by both limiting cell growth and proliferation and stimulating apoptosis.

Harvey's primary experimental model is Drosophila melanogaster (the vinegar fly), but the work also has important implications for human tumourigenesis. As one of the scientists involved in discovering SWH signaling in flies, Harvey is clearly keen to learn more about how it works in a broader setting including pos-

sible applications in human disease.

After completing a PhD with Sharad Kumar at the University of Adelaide in 2000, Harvey did a 5-year postdoc at the Massachusetts General Hospital Cancer Center in Boston and University of California, Berkeley. With developmental cell biologist Iswar Hariharan, Harvey was introduced to Drosophila as a model organism. "We were screening flies for genes that gave cells a growth advantage, looking for outgrowth of tissues such as eyes and wings." The group identified two components of a previously undiscovered pathway – a novel gene called salvador, and a previously known gene called warts (published in Cell, 2002). They subsequently found hippo, and together, these three genes comprise the core components of the Drosophila SWH pathway that is essential for normal cell growth, proliferation and apoptosis. Identifying hippo and showing that it controlled tissue growth with salvador and warts comprised a second Cell paper for Harvey in 2003.

Twelve components of the SWH pathway have now been identified in flies. All of these have mammalian counterparts and several have been implicated as tumour suppressors or oncogenes. They cover a range of protein classes: kinases (Hippo, Warts and Discs overgrown), scaffold molecules (Salvador), membrane-associated signaling proteins (Expanded and Merlin), and cytoskeletal motors (Dachs) to transcriptional regulators (Yorkie and Scalloped).

Harvey returned to Melbourne in 2006 to set up shop at the Peter Mac and to fill in more of the SWH signaling network (only 5 components known then). He took a candidate approach to identify receptors at the cell membrane that might signal to one or more of the known intracellular components. Looking for plasma membrane proteins known to regulate tissue growth in Drosophila revealed Fat as an SWH pathway component. An atypical member of the cadherin family of adhesion proteins, Fat was identified in flies in the1920's, but its role in organ development remained unknown. Fat was subsequently shown to regulate the apical membrane localisation of an intracellular protein called Expanded, another upstream regulatory protein in the pathway associated with the plasma membrane. "We now think that Fat restricts organ size by signalling to limit transcription."

Current work is trying to nut out exactly how Fat signals to the downstream SWH components, and how Fat itself is regulated. Evidence is mounting in both Drosophila and mammals that the SWH pathway is controlled by cell adhesion. "Fat is a likely candidate to mediate adhesion dependent-signalling given that it is a cadherin, but other proteins might also be involved, including other cadherins. In addition we are interested in defining the mechanism by which downstream SWH pathway proteins control transcription of target genes that control tissue growth."

Harvey has also started to look at the role of SWH pathway components in human cancers, with disruption of analogous human signalling molecules implicated in tumorigenesis. A large array of tumour samples from patients across the cancer spectrum available at the Peter Mac is enabling mutation screening for individual pathway genes and localisation of specific proteins in tumours. "Essentially, we are looking for expression of a common key downstream protein."

Harvey received funding from the Human Frontier Science Program (HFSP) and the NHMRC to set up his lab back in Australia, as well as a Career Development Award (CDA) from the Leukaemia Lymphoma Society and a Peter MacCallum Cancer Centre Junior Investigator Award. As testament to those funding decisions, Harvey has continued to make pivotal findings in the field of development cell biology, and in 2007 he secured a 4-year NHMRC CDA Fellowship, and in 2008 was awarded research grants from the NHMRC and the ARC.

Reports

4th AUSTRALIAN HEALTH and MEDICAL RESEARCH CONGRESS

The fourth Australian Health and Medical Research Congress was held in the Brisbane Convention Centre from Nov 16th -21st, 2008. Despite the wet and stormy weather the Congress was a huge success. Thirty scientific societies and organisations participated in this biennial Conference which is modelled after the multi-disciplinary American FASEB meetings. The Congress had over 1400 attendees and 980 presentations. There were over 60 international speakers in the total of 290 invited presenters.

As in past Congresses a daily plenary talk was presented by international speakers: Elaine Fuchs (Rockefeller University, USA) spoke on 'Stem Cells of the Skin: Biology and Clinical Promise'; Michael Karin (University of California, USA) on 'The inflammation - cancer conspiracy: the involvement of innate immune receptors in tumor promotion and metastatic progression'; Josef Penninger (IMBA, Austria) on "Molecular control of SARS infections and acute lung injury", Stephen Baylin (Johns Hopkins University, USA) and Nobel Laureate Roger Tsien (University of California, USA) on "Improving in vivo and clinical imaging with genetically encoded and synthetic molecules".

The ANZSCDBI was a Section Participant in the Con-

gress and organised symposia on two days –Tuesday the 18th and Wednesday, 19th November. These were convened by Nathan Subramaniam (QIMR, Brisbane). Elaine Fuchs, and James Nelson were international speakers nominated by the ANZSCDBI as plenary and invited speakers. Thirty-one ANZSCDBI members registered and attended the Congress with seventeen abstracts submitted.

The ANZSCDBI Symposium on Membrane Dynamics and Transport Proteins - Biology and Disease, featured Wanjin Hong (IMCB, Singapore) as the invited International Speaker and Jenny Stow (IMB, Brisbane) and Jacqui Stoeckli (Garvan, Sydney) as National Speakers. This symposium included a presentation from Rachel Peat which was chosen from submitted abstracts. This symposium was an unqualified success with significant level of interaction with the audience in terms of questions and comments A Free Communications Symposium was also run on the Tuesday and comprised six presentations chosen from submitted abstracts. These included some from some of our younger Society members.

In association with the Australian Society for Medical Research (ASMR) the ANZSCDBI also organised symposia on "Epithelial development and differentiation" and "Epithelial Polarity". Invited speakers in these two symposia included Elaine Fuchs, Brandon Wainwright (IMB, Brisbane), Don Newgreen (MCRI, Sydney), James Nelson (Stanford), Alpha Yap (IMB, Brisbane) and Patrick Humbert (Peter Mac). In association with the Australian Society for Biochemistry and Molecular Biology (ASBMB) the Society also co-organised a symposium on " Lipids in Health and Disease" which featured Rob Parton (IMB, Brisbane), Andrew Brown (UNSW) and Fred Meunier (QBI, Brisbane) as invited speakers.

The ANZSCDBI and its members played an important role in the success and flavour of this Congress. The Congress Organisers ASN and ASMR as the lead society should be congratulated on a job well done. We look forward to the next Congress in Melbourne in 2010.

A/Prof Nathan Subramaniam
Convenor, ANZSCDBI Symposia at the AHMRC, 2008
Queensland Institute of Medical Research, Brisbane

MEMBERS IN THE NEWS

Professor **Rob Parton** of UQ's Institute for Molecular Bioscience and longtime member of ANZSCDB was elected to the *Australian Academy of Science* for his work on molecular cell biology: characterisation of novel proteins involved in plasma membrane organisation of mammalian cells. This was announced on March 25, 2009.

SCIENCE MEETS PARLIAMENT (SmP) 17-18 March 2009

Science Meets Parliament was a two day event organised by FASTS with a view to providing an insight into how scientists can most effectively communicate with politicians to aid and influence policy outcomes. The first day was held at Old Parliament House and provided the background needed to understand the machinations of politics and the demands on a politician's time. A series of talks and panel discussions from representatives of the press, parliamentary advisors and aides, an economist and the Shadow Minister for Industry, Innovation, Science and Research, were designed to provide insight into the political process and prepare participants for meeting with Members of Parliament the following day. The overwhelming message was have a point, be succinct and suggest a solution. The talks were intermingled with exercises on how to present your view to politicians, how to effectively grab their attention and the importance of follow up. That evening a dinner at Parliament House provided the opportunity to network with other scientists and Members of Parliament in an informal setting. The Chief Scientist Professor Penny Sackett delivered a passionate and informative speech on the impacts of climate change.

The second day primarily involved meetings with Members of Parliament in groups of 3 or 4 scientists, and provided the chance to put into practice the tips from the day before. We had been warned that meetings would be cancelled due to the pressures of parliament, but we were fortunate to have two fruitful and informative discussions. The first was with Liberal backbencher Dr Mal Washer, Federal Member for Moore, WA who was very interested and knowledgeable about medical research. The second was with Qld ALP Senator Claire Moore. As all scientific participants in both meetings were involved primarily in medically related research we stressed the need to support basic research and to appreciate the long term nature of the outcomes. In the meeting with Senator Moore the particular issues facing women in their scientific careers, and possible solutions for supporting women, became a focus of the discussion. Both meetings were inspiring and informative. In addition to individual meetings with Members of Parliament, all scientists were provided with the opportunity to attend a number of forums involving expert panels, lunch at the Press Club with an address by Senator Kim Carr (Minister for Industry, Innovation, Science and Research), and of course question time.

Overall SmP was an interesting glimpse into political life and provided invaluable insight into how to effectively influence policy outcomes. While it highlighted the stark contrast between the scientific and political process, the interdependence between the two cultures was also apparent. SmP was an extremely

valuable experience and Bradley Smith from FASTS should be congratulated on the level of enthusiasm and knowledge he brings to the organisation of this event. We would definitely recommend that other ANZSCDB members take the opportunity to attend SmP in later years.

Carol Wicking
IMB, The University of Queensland

Katharina Gaus
University of New South Wales

INAUGURAL INDIAN OCEAN MUSCLE COLLOQUIIUM

http://www.anhb.uwa.edu.au/about/Muscle2009

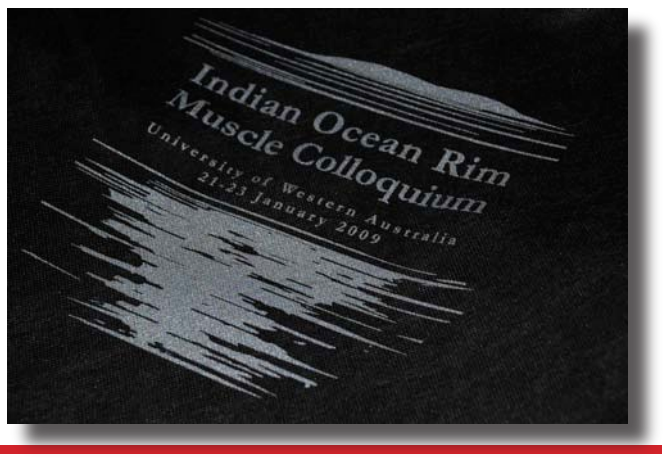
The inaugural Indian Ocean Rim Muscle Colloquium was held at the University of Western Australia from January 21-23, 2009 to bring together leading muscle researchers from India, Singapore and Australia and develop collaborations in the Indian Ocean region. This is highly attractive due to the geography, close time zones, biomedical expertise and rich cultural diversity. Skeletal muscle research has important implications for Medicine, Public Health (e.g the ageing population and the epidemic of diabetes), Agriculture (livestock industries) and Sports Medicine, in addition to contributing to understanding fundamental cellular mechanisms.

This meeting was considered extremely successful. It catalysed multiple interactions and research collaborations between researchers from the different countries and initiated plans to facilitate molecular diagnosis of neuromuscular diseases in the region. Strong interest was expressed to identify funding mechanisms for collaborative grants between investigators from the different countries to provide fellowships and/or travel support for students/postdoctoral fellows to visit collaborative laboratories for training in specific techniques to further foster such collaborations. There was much enthusiasm and support for the theme of increased communication and networking in the region with several strong initiatives emerging. This includes a decision to hold a second meeting within 2 years - planned for January 2011 in Bangalore (India), the establishment of emailing lists and a simple web site to co-ordinate information on regional meetings and funding opportunities, and identification of other muscle researchers around the Indian Ocean.

The meeting was attended by about 50 muscle scientists from India, Singapore and Australia and students (representing also Zimbabwe and Turkey), with 16 invited speakers (detailed in the attachment, p3). The many Institutes represented included, for India the National Centre for Biological Sciences in Bangalore and the Centre for Cellular and Molecular Biology in Hyderabad; in Singapore the Institute of Molecular and Cell Biology, Proteos, the National University of Singapore and Nangang Technological University; and from Australia the Universities of Western Australia, Sydney, New South Wales and Melbourne, the Australian Regenerative Medicine Institute, the Baker IDI Heart and Diabetes Institute, the Children's Hospital at Westmead, and the West Australian Institute for Medical Research. Two days of diverse presentations followed an opening public lecture on the impending treatments for Duchenne muscular dystrophy by Professor Dame Kay Davies (UK). The weather was beautiful and the Swan river sparkled.

Talks covered a wide range of topics as outlined in the Program on http://www.anhb.uwa.edu.au/about/Muscle2009. In brief, the first session explored stem cells and myogenesis during development with talks on molecular analysis of a novel chromatin regulator that controls quiescence and differentiation (Dhawan); a chemotherapeutic approach to ablate resident host cells and enhance donor cell engraftment for cell therapy (Gunning); the roles of Wsp and leucine rich repeat transmembrane proteins in myofibre formation during development in drosophila (VijayRaghavan) and mouse models (Haynes); and factors controlling myofibre type development in zebra fish (Ingham) and human disease (Clarke). The afternoon expanded to new zebrafish models to study muscular dystrophies (Currie), the importance of oxidative stress in dystrophy (Taneja), new imaging modalities for analysis of intact muscles (Klyen) and ways of investigating and modulating gene expression in vivo with respect to the livestock industry (White), gene splicing (Fletcher) and use of viral vector technology (Gregorevic).

The next day opened with a focus on the cytoskeleton and actin-based myopathies with talks on the ACTN3 gene for speed (North), fetal actin replacement therapy (Nowak), a new alpha-actin EGFP mouse model (Ravenscroft), novel actin/tropomyosin filaments involved in glucose homeostasis (Hardeman) and physiological studies of muscle stretch related to titin (Pinniger). The morning concluded with discussions on factors influencing muscle mass and the roles of IGF-1 (Shavlakadze) and TNF (Grounds). The themes of myogenesis, disease and therapy were maintained in the afternoon with talks on the role of β-adrenergic



signalling in skeletal muscle growth and regeneration (Lynch) and the role of the ECM (Gorman) and LIF in myogenesis (Hunt). This was followed by a critical overview of progress on molecular therapies for potential clinical treatment of DMD (Davies), the current status of the clinical exon-skipping trials for DMD (Wilton) and the importance of neurogenetics to identify the basis of muscle diseases to facilitate pre-natal diagnosis and treatment in the region (Laing).

This new Colloquium was made possible by generous support from the Vice Chancellor of the University of Western Australia and the Faculty of Life and Physical Sciences (India initiative) UWA, with additional funding from the Australian Research Council Network for Genes and Early Development (NGED) and the Australian and New Zealand Society for Cell and Developmental Biology (ANZSCDB) plus vital administrative assistance from the School of Anatomy & Human Biology with the website. We sincerely thank these sponsors for making this meeting possible.

In closing , we bring to your attention two meetings soon to be held in India:

- First Asian Conference on DMD, Bangalore, Feb 28 - March 1 www.duchenne-community.org

- 8th Asian Oceanian Myology Centre meeting, Mumbai, May 23-24, 2009 http://www.aomcviii.in/

Miranda Grounds
School of Anatomy & Human Biology, UWA
February 12th, 2009.
On behalf of the Organising Committee:
Kristen Nowak,
Gina Ravenscroft,
Connie Jackaman,
Thea Shavlakadze,
Felicity Waters,
Steve Wilton

Attendees of the Inaugural Indian Ocean Muscle Coloquiium

ANZSCDB Executive Officers & Committee Members 2009-2010

PRESIDENT: Edna Hardeman
Department of Anatomy
School of Medical Sciences
Wallace Wurth Building G18B
The University of New South Wales
Sydney NSW 2052
Tel 02 9385 2471 Fax 02 9385 8016
e.hardeman@unsw.edu.au

PRESIDENT ELECT: Peter Currie
Australian Regenerative Medicine Institute
Monash University
Clayton VIC
p.currie@victorchang.unsw.edu.au

TREASURER: Katharina Gaus
Centre for Vascular Research
School of Medical Sciences
University of New South Wales
Sydney NSW 2052
k.gaus@unsw.edu.au

SECRETARY : Geraldine O'Neill
Oncology Research Unit
The Children's Hospital at Westmead
Westmead NSW 2145
Tel 02 9845 3116
geraldio@chw.edu.au

ANZSCDB Secretariat:
Ros Barrett-Lennard
Magic Touch Consultancies
Tel +612 9524 1799
Fax +612 9524 1744
Mob +61 (0) 419 688 581
anzscdb@mtci.com.au

IMMEDIATE PAST PRESIDENT:
Alpha Yap
Institute for Molecular Bioscience
Queensland Bioscience Precinct
The University of Queensland
St Lucia QLD 4072
Tel 07 3346 2013 Fax 07 3346 2101
a.yap@imb.uq.edu.au

NEWSLETTER EDITOR:
Megan Chircop
Chldren's Medical Research Institute
Locked Bag 23
Westmead NSW 2145
Tel 02 9687 2800 Fax 02 9687 2120
mchircop@cmri.com.au

STATE REPRESENTATIVES:

ACT: Radiya Ali
Australian National University
radiya.ali@anu.edu.au

NSW: Bill Phillips
University of Sydney
billp@physiol.usyd.edu.au

NSW: Steve Palmer
Muscle Development Unit
University of New South Wales
s.palmer@unsw.edu.au

QLD: Asanka Karunaratne
Institute for Cell & Molecular Therapies,
Griffith University,
a.karunaratne@griffith.edu.au

QLD: Dagmar Wilhelm
Institute for Molecular Biosciences
University of Queensland
d.wilhelm@imb.uq.edu.au

VIC: Ian Smyth
Monash University
ian.smyth@med.monash.edu.au

VIC: Kieran Harvey
Cell Growth & Proliferation Laboratory
Peter MacCallum Cancer Centre
kieran.harvey@petermac.org

SA: Kate Dredge
Centre for the Molecular Genetics of Development
The University of Adelaide
kate.dredge@adelaide.edu.au

SA: Bryan Haines
School of Molecular and Biomedical Sciences
University of Adelaide
bryan.haines@adelaide.edu.au

WA: Cecilia Prele
Telethon Institute for Child Health Research
Tel: +61 8 9489 7884
ceciliap@ichr.uwa.edu.au

NZ: Christine Jasoni
Centre for Neuroendocrinology
University of Otago
Christine.jasoni@stonebow.otago.ac.nz

NZ: Makoto Kamei
School of Medical Sciences
University of New Zealand
m.kamei@auckland.ac.nz