Australasian Wound & Tissue Repair Society

DECEMBER 2011

INSIDE

CHRISTMAS GREETINGS 2012

Another year has come and gone and it is hard to believe that 2012 is now just around the corner. However, 2011 has been a good year and it is worth taking a moment to look back at some of the highlights.

This year we held our first AWTRS Research Symposium which was a major success. Held at QUT in June to coincide with the AGM we were privileged to listen to some excellent presentations from our young, up and coming researchers who are so interested in wounds and tissue repair and it was great to see more than 50 people in the audience. I am sure this event will be repeated and held again many times in the future.

During this year we were all worried about the projected $400M cuts which the government were proposing to cut from the NHMRC budget. It was with great relief that following lobbying from researchers from all over Australia and rallies held in all the States that the Government decided to allocate $746.1 million to NHMRC in the May budget. It was fantastic to see the strong community support for greater investment in medical research and for all those who attended rallies, sent letters and signed petitions it shows what can be done when everyone unites together behind a good cause.

We can't have an end of year issue without mentioning grant outcomes. Congratulations to all those who were successful with their applications this year whether it was from NHMRC, ARC or more local funding bodies. In this issue of the newsletter we hear what is was like from one of our members, Dr Leila Cuttle. Leila was awarded an Early Career NHMRC fellowship and her excitement and enthusiasm is clearly evident in her article. We wish Leila all the best with her research endeavours. For every grant success there are 4 that missed out and we understand the disappointment and frustration that many feel. All we can do is urge all our members that if asked to review a grant or sit on a NHMRC panel to take up the opportunity no matter how busy you are. The more people who understand the area of research that we are working in and provide those hugely important credible reviews the better the likelihood that our research will get above the funding cut off. There's nothing worse than that feeling that the reviewers didn't understood the significance of the issue or understood the research concept and plan.

Looking onward to 2012 we have the 3rd AWTRS conference to look forward to and a changing of the guard! At the next AWTRS AGM to be held in May 2012, my term of presidency will end and a new president will be appointed. A couple of the committee will also step down as their terms end. This is a fantastic opportunity for you to get involved! The call for nominations will be sent our shortly so please spend some time thinking about whether you would like help support this society and the field that we all care so much about- wound and tissue repair.

I wish you all a very Merry Christmas and a safe and happy holiday.

Allison Cowin
President, AWTRS

Conference Report for the European Tissue Repair Society Congress 2011

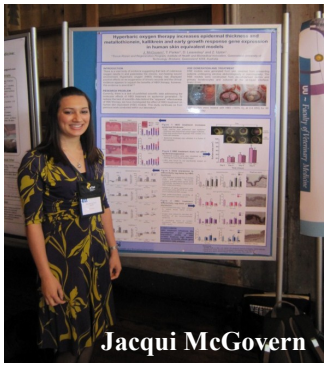
The conference started with an introduction from Sabine Eming (President of the ETRS) who emphasised that the focus of the conference was to bring together industry, scientists and clinicians to work together to further scientific research. This was aided by several sessions held by companies such as Meda, Biomet, Aimago, Bruker, Oscare and Mitenyi Biotec, who not only had the chance to promote products but also answer questions on their own research.

The first plenary session focused on the inflammatory process during tissue repair and included a fascinating talk from Peter Friedl, from the Netherlands, on the delicately balanced process of matrix remodelling to allow cells to migrate through the provisional matrix of the wound. There was also a fantastic presentation by Professor Allison Cowin, who is based at the Women's and Children's Health Research Institute in Adelaide. She spoke of how Flightless (Flii), an actin binding protein, is a negative regulator of wound healing and that treatment of porcine wounds with a neutralizing antibody, to block the action of Flii, can result in accelerated healing and reduced scarring.

Following this there were two free sessions on nanotechnology/tissue engineering and keratinocytes in wound healing. There were several talks in the keratinocytes and wound healing session from Keith Harding's research group in Wales, who are using electrical substrate impedance sensing (ECIS), developed by Applied Biophysics Inc. This technique allows the non-invasive monitoring of cells within a controlled environment in the lab to determine migration, proliferation and adhesion. Their research has identified several factors regulating these processes in keratinocytes, including: IL-7, IL-8, IL-24, Ehm2, S100A7 and TEM8. In the other session Shelia MacNeil gave a really interesting talk on the use of 3D dressings carrying autologous keratinocytes, melanocytes and bone marrow mesenchymal cells for the treatment of burns and diabetic ulcers.
A young investigator dinner was arranged by the junior committee that night, held at the Restaurant de Eettuin in the heart of the Jordaan region of Amsterdam. This was a fantastic opportunity for junior scientists to get together to discuss their research and to socialise over dinner and a few drinks. Additionally, the current junior committee utilised this opportunity to discuss the benefits and duties involved in being on the committee and recruited new junior committee members to help organise the ETRS conference and social activities for next year.

The following morning there were a series of talks on cell-matrix interactions including the role of lysl hydroxylase 2 in collagen cross-linking. There were also presentations which explored the role of steroids, periostin, insulin-like growth factor binding protein-6 and Reheopherisis in the treatment of ulcers, hypertrophic and keloid scars. There was also a free paper session on recent advances in the treatment of chronic wounds. These presentations included the identification and roles of growth factors, cytokines and chemokines in venous leg ulcers. The topics also covered treatments using skin substitutes including Collatamp®, Leucopatch®, and split thickness skin grafts for conditions such as ulcers, chronic wounds and perineal healing. The remainder of the morning featured sessions on smart textiles/scaffolds used in healing, a presentation from Meda of their new book on scarring and a workshop by Biomet and their use of platelet rich plasma in burns.
In the afternoon there were talks for the Young Investigators Award which ranged from investigating mechanical forces, collagen deposition, integrins, myofibroblasts and treatment using electrical stimulation during healing. There was a fantastic talk from Victor Wong, who is the Wound Healing Society Young Investigator Award winner for 2011, on how mechanical forces can dictate matrix phenotype via focal adhesion signalling. That evening there was the Charles Lapiere Memorial lecture given by Yann Barrandon. It was a fascinating and illuminating talk on his previous work and how it led to his present research on utilising stem cells for regenerative medicines. After a quick drink there was the opportunity to renew friendships and to meet other scientists and clinicians at the gala dinner held that night at In de Waag or "The Old Weigh House" built in 1488.

On the final morning of the conference there were talks on the use of mesenchymal stem cells in the treatment of cartilage regeneration, paediatric burns, excisional wounds and in Dupuytren's Disease. Other sessions that morning covered a wide range of topics including; novel therapies for infection and biofilm formation, cell and tissue bank regulations for advanced cell therapy and a European Wound Management Association session which covered chronic wounds, diabetic -associated wounds and trauma surgery. Finn Gottrup gave a really interesting talk on some of the problems involved with evidence based therapies and how there is a real need to investigate treatments using the highest scientific standards to avoid confusion and misinterpretation of the study's findings.
The afternoon included symposiums on cell therapies in wound management, tissue regeneration using adipose tissue and adipose stem cells and also a session on wound healing in other tissues including skeletal muscle, ovary, intestine, lung and central nervous system. In the final seminars of the conference there were talks on scar evaluation and burns and free paper session on models and mechanisms of healing.


Jacqui McGovern


Stuart Mills

In the free paper session the first of these presentations was give by Stuart Mills also based at the Women's and Children's Health Research Institute in Adelaide. The talk conveyed how during the wound healing process in skin Flightless protein preferentially activates Toll-like receptor 4. This leads to an altered cellular profile throughout a prolonged inflammatory response which results in delayed healing. Other talks during that session discussed the role of haem-oxygenase and high mobility group box 1 protein in wound healing and improving sensorimotor performance in a traumatic brain injury model.

Overall the 21st ETRS congress was a success and run very efficiently. It created a platform for us to present our current research on an international stage and for us to not only learn about recent advances in our chosen fields of research but to also form new friendships and potential collaborations in the future. We would both, therefore, like to thank the AWTRS for the travel grants that allowed us to attend this conference.

Stuart Mills, WCHRI, Adelaide.

Jacqui McGovern, QUT, Brisbane.

Invitation to 2011 NHMRC Grant Announcements

I received a phone call out of the blue from the NHMRC on Wednesday morning the 12th October. My mind was racing…what did they want? Was there a problem with one of my applications or reviews? I knew the grant announcement was scheduled to be on the following Monday (although no one believed it actually would be, because they are ALWAYS late), surely they wouldn't call me to tell me that my Fellowship application was unsuccessful… I held my breath…

"I'm calling to talk about your successful NHMRC grant application"

I let out a whoop of delight and got some startled looks from the other people in the lab.

"Sorry, I should have said this information is under strict embargo, and you're not allowed to tell anyone, so you may have to pretend you won the Lottery. What I am calling about is that we would like to invite you to be part of the NHMRC grant announcements. We'd like you to give a short talk about your work that is being funded from the grant"

Of course I was absolutely delighted, what an honour that they would ask me to talk about my work! Further discussions revealed that the announcement was to be in Adelaide, on the following Monday the 19th at 9am. They offered to pay for my flights and because they wanted to make sure I was there on time and didn't get delayed, they would pay for my accommodation for the night before. WOW, a successful grant AND the NHMRC was paying me to attend! I should have bought a lottery ticket!

The announcement was held at the University of Adelaide. Three grant recipients had been chosen to speak about their successful applications because their topics were easily understood and would likely have wide appeal: Professor John De Wit's (University of NSW) project determining when and why people who are HIV positive start antiretroviral treatment; Dr Leila Cuttle's (University of QLD) Early Career Fellowship on improving burn wound healing in children; and Professor Maria Makrides's (University of Adelaide) project on omega-3 dietary supplements during pregnancy to reduce childhood asthma and allergies. The Minister for Mental Health and Ageing, Mark Butler spoke about the bonanza of $673.7 million being awarded this year for 1,140 grants which was a fantastic outcome for Australian health. Professor Warwick Anderson, the CEO of the NHMRC also spoke of how it was wonderful for the NHMRC to be awarding so many grants, considering that earlier this year there was talk of funding cuts to the NHMRC. They, and the other attendees (heads of Australian universities, NHMRC people, media) were friendly and approachable. I had the opportunity to chat with them both and Warwick Anderson admitted it was a joy to be talking to people who had received a grant instead of people complaining to him about not being funded by the NHMRC. I told him that usually I was one of those people! I thanked him profusely and he insisted that I shouldn't thank him, it was the system that had given me the grant and my peers (Thank you, peers!). Attending the announcement was a wonderful experience and I was honoured to be part of such a substantial investment into the future of Australian health and medical research.

Dr Leila Cuttle
CCBR Brisbane.

Wound Management Innovation CRC – Best Practice Wound Care

The care and management of chronic wounds such as venous, diabetic and pressure ulcers, is a significant problem costing the Australian health care system in the order of $3 billion per annum. Chronic wounds affect approximately two per cent of the population, and their prevalence and costs are set to rise in an aging population with increasing incidence of lifestyle diseases such as diabetes.

Wound research linked to utilisation through education, training and awareness has the potential to deliver big benefits in this sector.

The WMI CRC, which commenced operations on 1 July 2010, will become a leading organisation for integrated and collaborative research into innovative wound care tools, systems and technologies. The key outcomes will be the commercial development of products and processes, and the transfer of new knowledge, education and training programs that benefit wound management. The WMI CRC will have around sixty equivalent full time researchers with a total budget (cash and in-kind) of just over $100 million for the next eight years provided by the Australian Government and the participants.

Thirty research projects, spread over three Research Programs, have commenced and are on track to meet the 2011 research milestones. It is anticipated that the impact from the CRC's activities in the short term will be delivered through the adoption of research outcomes and activities designed to enhance the awareness of best practice wound management.

A major element of Professor Zee Upton's Research Program 1 projects in the first year of operation have been the establishment of sample collection processes, the collection of samples and the establishment of analytical tools. This work is well advanced and on target with 950 samples collected through three projects. The development of new skin models is progressing well with 180 scaffolds under surface modification. There has been a significant demand for access to the models which has resulted in the development of plans to deliver this as a sustainable service.

The work in the second Research Program - Tools and Therapies, lead by Dr Sherry Kothari, is leading to the development of approaches and systems that can be adapted to trial markers and therapies. The interaction between scientists in this Program and clinicians were facilitated through panel discussions at the first WMI CRC Workshop in October 2011. A new project specifically aimed at the rapid development of wound repair products has also commenced.

Professor Zee Upton & Professor Keith Harding @ QUT's Wound Clinic

Activities in Professor Helen Edwards' Research Program 3, have been a little slower to start as a consequence of complexity of the Program in having to deal with research, community and professional awareness, clinical trials and tertiary education. All the major projects in this Program have now commenced. The Program is in the process of recruiting an Education Project Manager to facilitate the delivery of education oriented outcomes, so this will see activities advance quickly in the New Year.

More information about the Wound Management Innovation CRC is available from www.woundcrc.com

Kellie Broderick

wound management innovation CRC

Category 1 grant outcomes for 2012

Congratulations to all our members who were successful with their grant submissions this year. Below is a snapshot of some of the successful Category 1 applications in the area of Wound & Tissue Repair. Unfortunately there are not enough research dollars to go around and many excellent submissions went unfunded and we commiserate with all those who missed out this year. Onwards and upwards as they say and try, try, try again next year!

We approached some AWTRS members to give a brief summary of their successful grants. Christopher Jackson, Kaur Pritinder and their teams were awarded NHMRC project grants and Leila Cuttle and Zlatko Kopecki were awarded NHMRC Early Career fellowships.

Associate Professor Christopher Jackson
Project summary: Chronic leg ulcers are a major public health burden. We have recently shown that activated protein C heals chronic wounds in animals and in humans, and largely resolved the underlying mechanisms. The current chronic leg ulcer trial is a randomised placebo-controlled double-blind trial performed in 3 Australian major teaching hospitals and is an essential step to validate the therapeutic use of activated protein C in wound healing. We expect that APC will emerge as a cost-effective treatment for recalcitrant wounds.

Dr Pritinder Kaur
Project summary: The role of the microenvironment in promoting both normal and cancerous epithelial cell growth is well accepted although the precise cellular and molecular players remain to be well-defined. Stromal cells surrounding the tumour known as cancer-associated fibroblasts (CAFs) promote tumour growth and are thought to originate from a number of sources including resident fibroblasts and bone-marrow derived mesenchymal stem cells (MSCs). Our data indicate that pericytes and/or pericyte-like cells normally found juxtaposed to blood vessel endothelial cells and exhibiting MSC properties, accelerate epithelial tumour growth through an angiogenesis independent manner and could be a potential source of CAFs. The experimental aims of this project grant are to definitively demonstrate at which stage of carcinogenesis, pericytes can act as CAFs and the mechanisms involved in two models of epithelial carcinogenesis i.e. ovarian cancer and squamous cell cancer. Secondly, we are seeking to establish whether pericyte markers can be used for prognosis given that we have been able to correlate a pericyte signature with a sub-group of ovarian cancer patients who relapse with recurrent disease and die in six months or less following treatment.

Dr Leila Cuttle
Project summary: My research strives to improve outcomes for children with burn injuries, from acute care through to scar management, with a global aim to improve the process of tissue repair. Specifically projects within our research group that I have been involved with include: fetal scarless tissue repair, development of laboratory tools and pre-clinical models to examine burn injury and scar formation and evaluations of burn dressings and treatment techniques. My PhD work determined the optimal first aid treatment for burns and on the basis of this, I am now developing and implementing a QLD and national burn first aid public education campaign to ensure that the research I have conducted will reach those in the community who it will most benefit. I am also in the process of updating the recommendations of resuscitation organizations globally. At this stage of my career, my main research interest is to improve the acute treatment of children with burn injuries, i.e. during the window immediately pre-burn and for 24-48 hours post-burn. To achieve this I have developed a program to improve the acute treatment of burned children, and I am working on several different projects around this theme. Specifically I am interested in promoting public safety and burn awareness, exploiting the beneficial effects of first aid to develop more efficacious acute treatment for burn injuries, developing proof for the relationship between heat and tissue damage which is critical for medico-legal purposes and prevention and legislative requirements and examining the relationship between pain, pain-mediating molecules and the wound healing response.

Dr Zlatko Kopecki
Project summary: My research focuses on understanding the role of the Flightless protein on skin architecture, cellular response and the skin blistering disease Epidermolysis Bullosa. We have identified Flightless protein (Flii) as a negative contributing factor to increased epidermal-dermal blistering suggesting that reducing Flii in blistered skin could be a potential new approach for treating patients with skin blistering diseases. This work has led to a number of novel findings especially in areas of cell adhesion which underpins the biology of skin blistering diseases. During my PhD I received specialised training at the international Centre for Excellence “Fragile Skin” at University Medical Centre of Freiburg, Germany. Using an innovative approach we have developed a novel topical therapy that is currently being tested in pre-clinical trials and has established grounds for phase I & II human clinical trials in the near future. Having been awarded the NHMRC Early Career Fellowship I plan to further my work on the development of therapy for skin blistering disease. This fellowship will focus on characterizing a novel Flightless LRR-Associated Protein-1 (FLAP-1), which when added to a wound will block the impaired healing responses that Flii causes. This research will aid current development of therapies for children with skin blistering diseases which will significantly improve their life expectancy and quality of life.

Nadira Ruzehaji (PhD Student) WCHRI Adelaide

News for AWTRS Early Career researchers

As most of you would be aware the Australasian Wound and Tissue Repair Society in conjunction with the Australasian Society for Dermatology Research will be holding a joint conference on the 22nd-24th May 2012 in Darling Harbour, Sydney. More information on the conference and some of the great speakers we have lined up can be found on our web site (http://awtrsasdr2012.mtci.com.au/). In keeping with the AWTRS commitment to support early career researchers I would like to announce that the AWTRS would again be supporting its early career members by providing AWTRS Travel Awards to attend the conference. In addition to repeating the highly successful MasterClass on the first day of the conference we will also be holding a Young Investigators Social Evening on the first night of conference that you might like to attend. More details of both the awards and the social evening can be found below.

CALL for AWTRS Travel Grants

AWTRS Conference Travel Awards

The AW&TRS will offer competitive travel awards for students and junior postdocs (with up to 5 year's postdoctoral experience) of $500 each to go towards registration and travel expenses at this upcoming Sydney conference. AWTRS early careers researcher members should apply online for Travel Awards to attend the conference. Awards will be announced before the close of Early Bird registration.

To apply applicants should:

1) have been a financial AWTRS member for the past year,
2) submit an abstract via the conference web site,
3)http://awtrsasdr2012.mtci.com.au/AWTRS-ASDR12_registration.htm
4) Check the Student/ECR box in Demographics on the registration form
5) Select number of years Post Doc (pull-down menu
6) Copy and paste the Award/s for which you are applying.
7) confirm you have been a financial member for year and submit your CV on the registration page.

Selection will be made by the AW&TRS Committee by 20th April 2012.

Young Investigators Social Evening

Additional 2012 Funding Success in Wound & Tissue Repair

Additional successful grant applications for Wound Healing, Tissue Repair and Regeneration Research in this year's round of ARC and NHMRC grants. Apologies if we missed any …

NHMRC Project Grants

Dr Caroline Gargett
How does the endometrium regenerate? Role of epithelial stem/progenitor cells
Monash University
$640,920.00

Dr Simon Keely
Hypoxic Regulation of Integrin Beta1 During Mucosal Wound Healing
University of Newcastle
$307,500.00

Dr Kate Mounsey
INSIDE THE SKIN: UNDERSTANDING DIFFERENT HOST RESPONSES IN SCABIES
Queensland Institute of Medical Research
$483,510.00

ARC Discovery Early Career Researcher Award

Dr Nicolas Barraud
Novel role for the universal signalling molecule nitric oxide within biofilm communities and across a biofilm-host interface
The University of New South Wales
$375,000.00

Dr Shikha Garg
Interaction between silver ions, silver nanoparticles and reactive oxygen species: implication to toxicity
The University of New South Wales
$375,000.00

ARC Discovery Projects

Prof Alpha S Yap
Mechanotransduction: a new paradigm for cadherin junction biology
The University of Queensland
Total $360,000.00

A/Prof Zhi Ping Xu; A/Prof Andrei Zvyagin; Prof Michael S Roberts
Skin penetration of nanoparticles promoted by particle design, formulation and application method
The University of Queensland
$360,000.00

Prof Timothy G St Pierre; Dr Killugudi L Swaminatha-Iyer; Prof Fiona M Wood; Prof Judy S Riffle
Magnetically controlled drug release from tissue scaffolds for the treatment of acute burns
The University of Western Australia
$375,000.00

Prof Anthony S Weiss; A/Prof Fariba Dehghani
Versatile elastin based hybrid hydrogels for chondrocyte transplantation and repair
The University of Sydney
$280,000.00

Upcoming Conferences 2012

AWMA 2012

Visit the official conference website www.awma2012.com

2012 AWMA Conference
Sydney Convention & Exhibition Centre
18 -22 March 2012

The AWTRS is supported by :

QUT ihbi
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Women's and Children's Health Research Institute

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