

Centre for Stem Cell Research E-news



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EARLY CAREER RESEARCHER FELLOWSHIP

REMINDER:

Applications close
****Friday Sept 5th****

All documentation & details can be found on the Centre's website

The University of Adelaide, Australia

DIRECTOR'S REPORT

It has been a busy few months for the Centre, with many Honours and Postgraduate recruitment drives (see page 2), strategic planning, applications for the Early Career Research Fellowship, and preparations for the Centre's Launch on Sept 16th.

There has also been movement with regard to the Research Fund, with the assistance of Dr Matt Chong (ARI) and Robyn Brown

(Alumni).

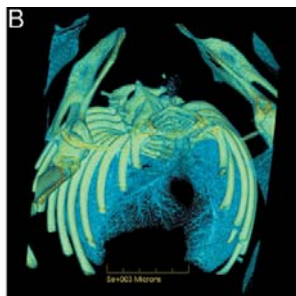
Our Manager, Sarah List will unfortunately be leaving us to pursue a full-time Lecturing position at the University of South Australia in Pharmacy & Medical Sciences. We wish her well, and are currently advertising for her replacement.

Regards,
Mark & Stan

PROFESSOR JOHN HOPWOOD: SOUTH AUSTRALIAN SCIENTIST OF THE YEAR

Congratulations to Centre member Professor John Hopwood, who has been awarded the prestigious title of 2008 South Australian Scientist of the Year. Professor Hopwood is Head of SA Pathology's Lysosomal Diseases Research Unit based at the WCH, and his career spans more than 25 years.

RESEARCH MARKS NEW ADVANCE IN MEDICAL IMAGING DR DAVID PARSONS, CYSTIC FIBROSIS GROUP AUGUST 2008



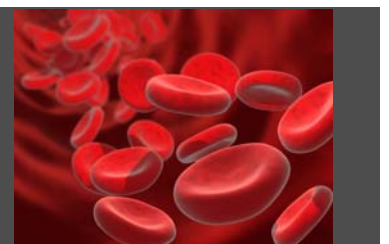
Researchers at the Centre (WCH) have given an extraordinary glimpse into the insight doctors could one day have into our bodies. Together with an international team of researchers from Monash

University, Japan, and the USA, they have developed new biomedical imaging techniques with the potential to significantly advance the diagnoses and treatment of lung diseases, as recently published in the Journal of Anatomy. *(continued p3)*

CONTACT THE CENTRE

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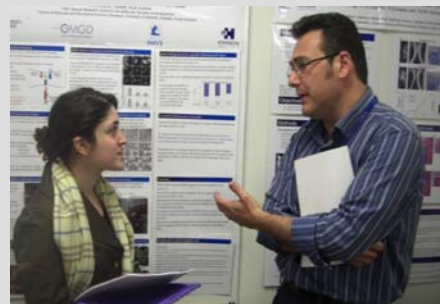
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Web: www.adelaide.edu.au/stemcell



HONOURS & POSTGRADUATE INFORMATION DAY & UNIVERSITY OF ADELAIDE POSTGRADUATE INFORMATION NIGHT

The Information sessions were very well attended, with over 65 students present at the Centre's dedicated information day on July 24th, and more than 140 information guides being distributed over the two information days.

The Centre is also a Silver Sponsor of the AusBiotech Biocareers Night, to be held on Wednesday September 16th at the German Club, where more than 250 prospective students and researchers congregate to find their next project. Please see below for more details.



AUSBIOTECH BIOCAREERS NIGHT WED SEPT 10TH 2008

The 2007 BioCareers night attracted over 150 students and researchers for a networking and careers night, and 2008 promises to be even bigger.

If you would like to represent the Centre for some or all of the night, please contact Sarah.



AusBiotech
STUDENT ASSOC
AUSTRALIA'S BIOTECHNOLOGY ORGANISATION

BioCareers Night

*Showcasing the SA
Bioscience Industry*

Wednesday 10 September 2008

Silver Sponsor

www.theaustralian.com.au
 The Weekend Australian, August 2-3 2008
 Weekend Professional Education, P8

BEHIND THE JOB AD

Stem cell research focuses mainly on health benefits

Lynnette Hoffman

A TOOTHLESS grin isn't exactly flattering. But when an advanced form of gum disease such as periodontitis strikes, the results to your pearly whites can be devastating. As bacteria in plaque builds up, the gums become swollen and inflamed and eventually the tissues and bones that support your teeth become destroyed, and your teeth can fall out or have to be removed.

What's worse, while treatments for periodontitis are available, you can't reverse the damage to the tissues and bones once it's occurred.

But what if new tissues could be created?

That's exactly what researchers at the University of Adelaide's Centre for Stem Cell Research are attempting to do. They're isolating the stem cells from the ligament that holds the teeth in the jawbone of sheep, culturing them, and then working to reimplant them in sheep that have bone loss around their teeth caused by gum disease.

"Advanced forms of periodontal disease affect up to 15 per cent of the adult Australian population," says Professor Mark Bartold, director of the Colgate Australian Clinical Dental Research Centre — one of 18 research groups collaborating with the Centre for Stem Cell Research.

"Our studies in an animal model are showing very promising results — human trials are still some way off, but proof of principle in the animal model is almost complete."

The novel approach to treating gum disease is not the only cutting edge research taking place at the new South Australian centre. Other researchers are looking at ways to repair damage to the brain following strokes, while another group is looking to repair hearts after heart attacks, and others are working to develop new approaches for treating diseases such as cystic fibrosis and leukaemia — to name just a handful of the 25 current projects.

While many people automatically associate stem cell research with the controversial use of embryo cells, their main focus is working with adult and cord blood stem cells, says associate professor Mark Nottle, director of the centre.

"We're aiming to translate basic research into clinical and commercial outcomes ... in other words, we want to ensure that the research conducted is producing real benefits for human health," Nottle says.

The Centre for Stem Cell Research was formed in November 2007 after a survey the previous year found that significant research was occurring, not only at the university but also within several of its affiliates such as Adelaide's Women's and Children's Hospi-



Innovative approach: Mark Nottle

■ **Early career research fellowship**

Where: Centre for Stem Cell Research, University of Adelaide

Salary: \$100k per annum for three years

Closing date: September 5

Enquires: Sarah List

Email: sarah.list@adelaide.edu.au

More information: www.adelaide.edu.au/stemcell/ or http://www.adelaide.edu.au/jobs/current/15003/

tal and the Institute of Medical and Veterinary Sciences.

"The centre brings together 18 mature research groups which are well-funded and resourced in their own right," Nottle says. "The research they're doing is internationally recognised and awarded, so by bringing these already successful groups together the centre aims to be at the forefront of stem cell research in Australia."

Operational costs for the centre are funded by the University of Adelaide, while the researchers have attracted a further \$8 million in 2008.

The official launch of the centre is scheduled for September. That coincides with another big event for the centre — the inaugural offering of a fellowship for early career researchers.

"We'll have the ability to train our stem cell scientists from the beginnings of their undergraduate career, and support them through until their independence as a mature researcher in their own right," Nottle says. "This will be a significant step in ensuring that our people and the quality of their research is at the forefront for years to come."

The centre has established an early career research fund with a goal to offer the fellowship annually in an effort to attract and keep the best and brightest emerging talent.

Applications for the inaugural fellowship close on September 5.

RESEARCH MARKS NEW ADVANCE IN MEDICAL IMAGING

DR DAVID PARSONS,
 CYSTIC FIBROSIS GROUP

AUGUST 2008

(continued from p1)

Synchrotron phase contrast x-rays have exceptional resolution, penetrating power and sensitivity to soft tissue. The researchers used synchrotron phase-contrast x-ray imaging (PCXI) to capture images of the structure and dynamics of tissues and organs in mice, in particular the airspaces and lungs.

The resulting two and three dimensional images offer staggering detail and clarity of the mouse organs and, through the application of specialised software, can provide animations that include 'virtual tours' flying through the mouse airways.

The synchrotron images were captured in Japan at the SPring-8 synchrotron. A synchrotron is a particle accelerator as big as a football stadium that creates extremely bright X-ray light as electrons are deflected through magnetic fields. The light is channelled down beamlines to workstations where it is used for research.

Cystic Fibrosis is a genetically-inherited disease that can cause serious and ongoing health problems. It causes early death in many after a life of steadily worsening lung disease. The disease currently has no cure.

Researchers are investigating the potential of gene therapy to cure the disease, focused on gene-correction of adult stem cells present in the airways of Cystic Fibrosis sufferers, but there is currently no direct method of examining airways non-invasively, at sufficiently high resolution and in a timely fashion, to assess whether or not treatments are working.

"Our research looked at developing synchrotron phase contrast x-ray imaging (PCXI) to visualise the immediate changes in internal airway physiology of living labora-

RESEARCH MARKS NEW ADVANCE IN MEDICAL IMAGING

DR DAVID PARSONS, CYSTIC FIBROSIS
GROUP

AUGUST 2008

tory animals, and reconstruct the detailed airway anatomy in preserved laboratory mice," Dr Parsons said.

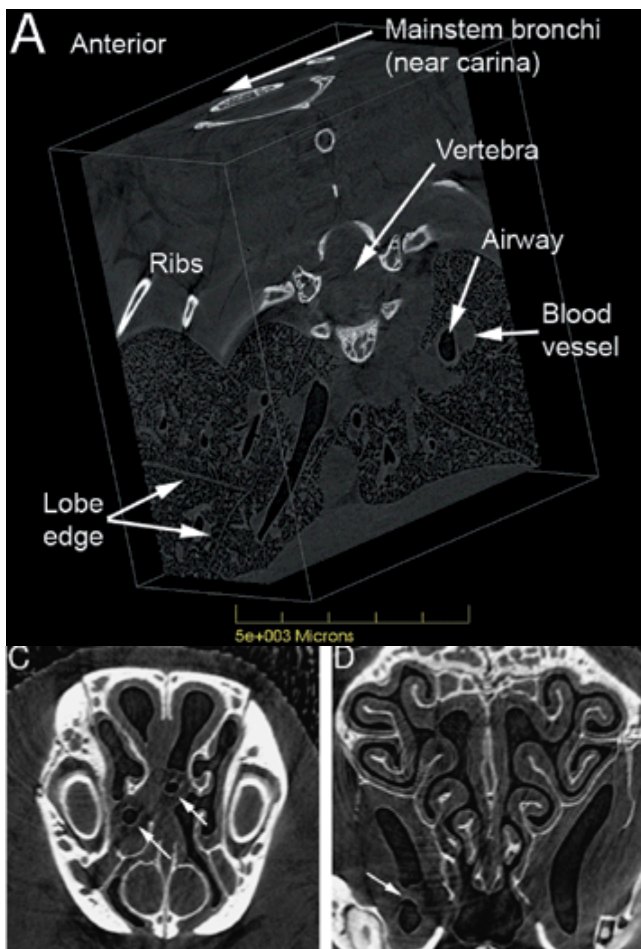
"The extraordinarily high resolution and clarity of the images we found meant we were able to examine complex organs such as the lung in detail, from many different viewpoints. We can isolate specific regions or different components of the tissue to advance our gene therapy research.

"The potential applications of this research mean that medical professionals could have substantially better X-ray tools to test immediately whether or not a particular lung therapy or treatment has worked, through biomedical imaging systems that can offer much greater clarity and scope for repeated analysis."

The research was conducted through funding provided through the National Health & Medical Research Council, the Cystic Fibrosis Foundation in the USA, and philanthropic donations from businesses and corporations.

The research article, images and animations can be found at: <http://dx.doi.org/10.1111/j.1469-7580.2008.00950.x>

Images from the publication:



ARC DISCOVERY FUTURE FELLOWSHIPS:

INTENT TO APPLY DUE
THIS FRIDAY, SEPT 5TH

Dear colleagues,

A Notice of Intent to Apply to the University of Adelaide Research Branch is due this Friday 5 September at the latest.

The form can be downloaded from the Research Branch website under the "ARC" menu. The page for Future Fellowships also includes links to the ARC pages for forms and guidelines, which will be activated as these become available. The scheme is open to mid-career researchers, and the expected **due date for full applications is October 2008.**

About the Discovery Future Fellowships

The Australian Government announced the creation of a new scheme, Future Fellowships, to promote research in areas of critical national importance by giving world class researchers incentives to conduct their research in Australia. The aim of Future Fellowships is to attract and retain the best and brightest mid-career researchers.

At present many highly qualified mid-career researchers choose to work overseas to further their careers due to lack of opportunities in Australia.

The Future Fellowships scheme addresses this problem and will significantly boost Australia's research and innovation capacity in areas of national importance.

Over a five-year period (2009 -2013), Future Fellowships will offer four-year Fellowships of up to \$140,000 a year to 1,000 Australian and international top researchers in the middle of their career. In addition, each researcher's administering organisation will receive funding of up to \$50,000 per year to support related infrastructure, equipment, travel and relocation costs.

Future Fellowships will encourage proposals from researchers working in areas of national priority. Preference will be given to those researchers who can demonstrate a capacity to build collaboration across industry, research institutions or with other disciplines.

Although international experience is important for Australian researchers, it is also important they have the opportunity to return home to continue their work. Future Fellowships will aim to encourage outstanding Australian researchers currently based overseas to return to Australia.

CENTRE EVENTS & DIARY DATES

EVENTS

Wed Sept 10th:
AusBiotech BioCareers Night
Tues Sept 16th, 3-5pm:
Centre Launch at National Wine Centre

MEETINGS (Med School North Seminar Room 229)

Tues Sept 2nd:
Management Meeting (1-3pm)
Tues Sept 9th:
Advisory Board Meeting (1-3pm)
Tues Dec 2nd:
Management Meeting (1-3pm)

CLOSING DATES

Friday, Sept 5th:
ECR Fellowship applications close
Mon Nov 17th:
Honours expressions of interest close
Mon Nov 17th:
Postgraduate expressions of interest close

INFORMATION REQUIRED FOR THE CENTRE

Friday October 24th:
Equipment & Techniques Database forms due

CONFERENCES

Keystone Symposia - Stem Cells, Cancer and Aging:
September 29 - October 4, Singapore

Adult Stem Cell - Biology and Clinical Applications Conference:
National Centre for Adult Stem Cell Research
26-28 November 2008 (see flyer p6)

EQUIPMENT & TECHNIQUES DATABASE

Many of you are yet to return these forms. This process is essential for informing the other members of your niche specialities and equipment, and to encourage collaboration and maximise the use of these facilities.

Thanks to everyone who has returned their documents already! If you have not yet returned these, please do so by

Friday October 24th.

If you require the templates, (previously sent) please contact Sarah.

SCHOLARSHIP OPPORTUNITIES

Colgate Betty Fanning PhD Scholarship:

Research Areas: Dental Materials, Periodontal Regeneration, Bone Regeneration or Stem Cell Research. More information:
catherine.offler@adelaide.edu.au

The Queen Elizabeth Hospital Research Foundation Scholarships: (Summer, Honours, and Postgraduate)

Many of our researchers are based or associated with TQEH, which is offering 9 Honours & 6 Postgraduate Scholarships. Applications for all TQEH Research Foundation Scholarships will open on: 4 August 2008

Vacation Research Scholarship applications close:
Mon 20 Oct 2008

Postgraduate Research Scholarship applications close:
Thurs 13 Nov 2008

Honours Research Scholarship applications close:
Thurs 13 Nov 2008

More Information:

<http://www.tqeh.sa.gov.au/public/content/default.asp?xcid=153&>

ANNUAL REPORTING

The Centre is not producing an Annual Report for 2007. Instead, for our records, can each group please email a report they have produced for another Centre/Institution to sarah.list@adelaide.edu.au by

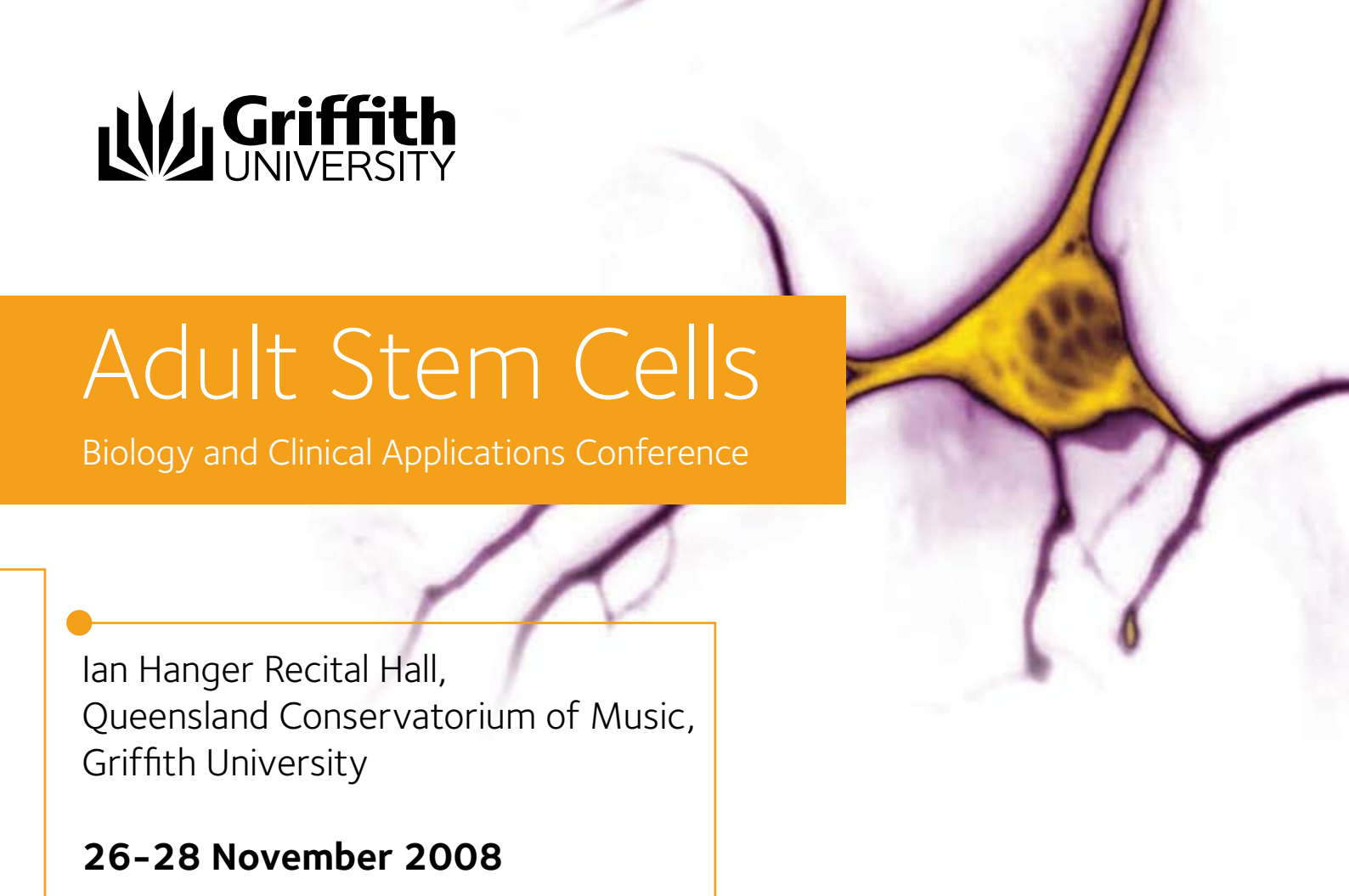
Friday October 24th

Adult Stem Cells

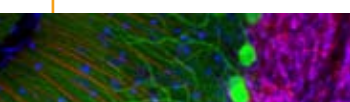
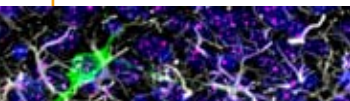
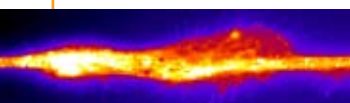
Biology and Clinical Applications Conference

Ian Hanger Recital Hall,
Queensland Conservatorium of Music,
Griffith University

26-28 November 2008



The National Centre for Adult Stem Cell Research will present the first conference on Adult Stem Cell – Biology and Clinical Applications from the 26-28 November 2008 at the Ian Hanger Recital Hall, Queensland Conservatorium of Music, Griffith University. The conference will bring together world leaders working with adult stem cells both through understanding their basic biology to exploring their clinical value and therapeutic potential for the treatment of such conditions as Parkinson's Disease, Schizophrenia, Spinal Cord Injury and Burns.



Speakers include world leaders in their fields such as Professor Hideyuki Okano (Nara Institute of Science and Technology), Professor Eva Sykova (Institute of Experimental Medicine), Professor Brent Reynolds (University of Florida) Professors Mari Dezawa and Koji Nishida (Tohoku University), Dr Kirsty Spalding (Karolinska Institute), Professor Stefano Pluchino (San Raffaele Scientific Institute), Professor Iver Langmoen (University of Oslo). Former Australian of the Year and Director of the Western Australian Burns Service Dr Fiona Wood will open the conference and give the plenary lecture.

A series of oral presentations will work towards deepening understanding of adult stem cells and the variety of therapeutic benefits they offer.

Full Registration \$550.00 Student Registration \$125.00

For more information and programme details go to
<http://www.griffith.edu.au/science/national-centre-adult-stem-cell-research/news-and-events>

or contact **Shani Doig** at s.doig@griffith.edu.au