

Annual Report

2011 / 2012

stemcellsaustralia.edu.au

*“In a swiftly changing landscape,
Stem Cells Australia places the
Australian scientific community
at the world’s leading edge of
research in this important field.”*

*—Professor David de Kretser
Chairman*

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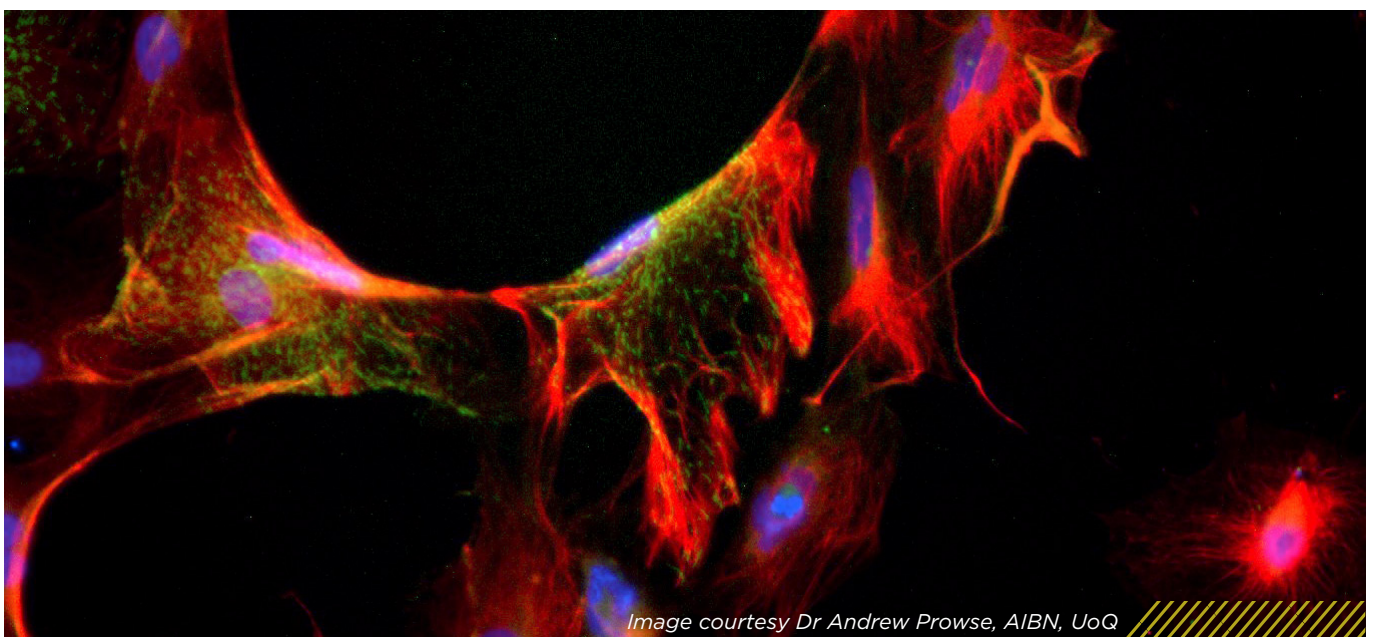


Image courtesy Dr Andrew Prowse, AIBN, UoQ

Chairman's Report

Stem Cells Australia (SCA) is a Special Research Initiative in stem cell sciences funded by the Australian Research Council that brings together leading researchers in this field from across the country.



Led by the University of Melbourne, this collaboration includes scientists from the University of Queensland, the University of New South Wales, the Victor Chang Cardiac Research Institute in

Sydney, the Walter and Eliza Hall Institute of Medical Research, the Florey Institute of Neuroscience and Mental Health, Monash University, and the CSIRO Material Science Division in Clayton.

Stem Cells Australia has made strong progress since our formal launch by the former CEO of the Australian Research Council, Professor Margaret Shiel, on 10 November 2011.

During 2012, the foundations for interdisciplinary research into stem cell science were developed which included understanding the potential roles of stem cells in a range of intractable diseases arising from cell damage such as in Parkinson's disease, following the death of cardiac muscle cells due to interruption of their blood supply following occlusion of the coronary arteries as occurs in a heart attack, and damage to nerve cells in the spinal cord from traumatic injury as well as a host of other very real and debilitating diseases.

To maximize the interactions and to develop tangible outcomes, a framework for governance was established in 2012. This was critical given that the number of researchers participating in the consortium has nearly doubled, increasing during the year from 60 to over 120, with an involvement in 20 projects across four key areas of stem cell science.

To promote interactions and information sharing between researchers and participating members, Stem Cells Australia has established a website and quarterly newsletter, facilitating access to the most recent findings and upcoming conferences and workshops.

2012 also saw the establishment of our core facilities, providing services to the scientific research community. These include:

- Stemformatics - a collaboration between the stem cell and bioinformatics communities based at the University of Queensland. Stemformatics provides a fast way for biologists to find and visualise interesting genes.
- StemCore laboratories, also based at the University of Queensland, provides support for pluripotent stem cell culture for our Queensland and NSW-based researchers.
- At the Melbourne Brain Centre - in the heart of Parkville's biological sciences precinct - Stem Cells Australia provides purpose-built core facilities in Flow Cytometry and pluripotent stem cell culture for use by our members and other interested researchers.

Stem Cells Australia core researchers secured \$1.5 million in international research funding in 2012. These efforts at building international collaboration were supported by:

- a Department of Foreign Affairs and Trade (DFAT) grant to foster collaborative workshops with Kyoto University's Institute for Integrated Cell-Material Sciences (iCeMS), and;
- the initiation of a relationship with Canada's Centre for Commercialization of Regenerative Medicine (CCRM) via a Translation of Regenerative Medicine & Stem Cell Science Roundtable, co-hosted by Stem Cells Australia and the Canadian Trade Commission.

“Stem cell science is an extremely fast moving field of research with new breakthroughs being reported on an almost daily basis.”

In 2013, Stem Cells Australia will finalise our strategic and operational plan. As part of this, a strategic fund has been established to enhance collaboration between partners on highly innovative new directions in stem cell science. This flexibility is essential to enable rapid responses to enable the consortium to have access to the latest reagents, techniques and equipment. The award of the first round of strategic funding to our partners, will be made on criteria to be announced shortly through our website.

A category of affiliate memberships was also established in 2012, and we look forward to announcing new affiliate memberships over the coming year, as well welcoming more visiting international fellows.

Stem cell science is an extremely fast moving field of research with new breakthroughs being reported on an almost daily basis. In a swiftly changing landscape, Stem Cells Australia places the Australian scientific community at the world's leading edge of research in this important field. I commend Stem Cells Australia's work to you.

Professor David de Kretser
Chairman

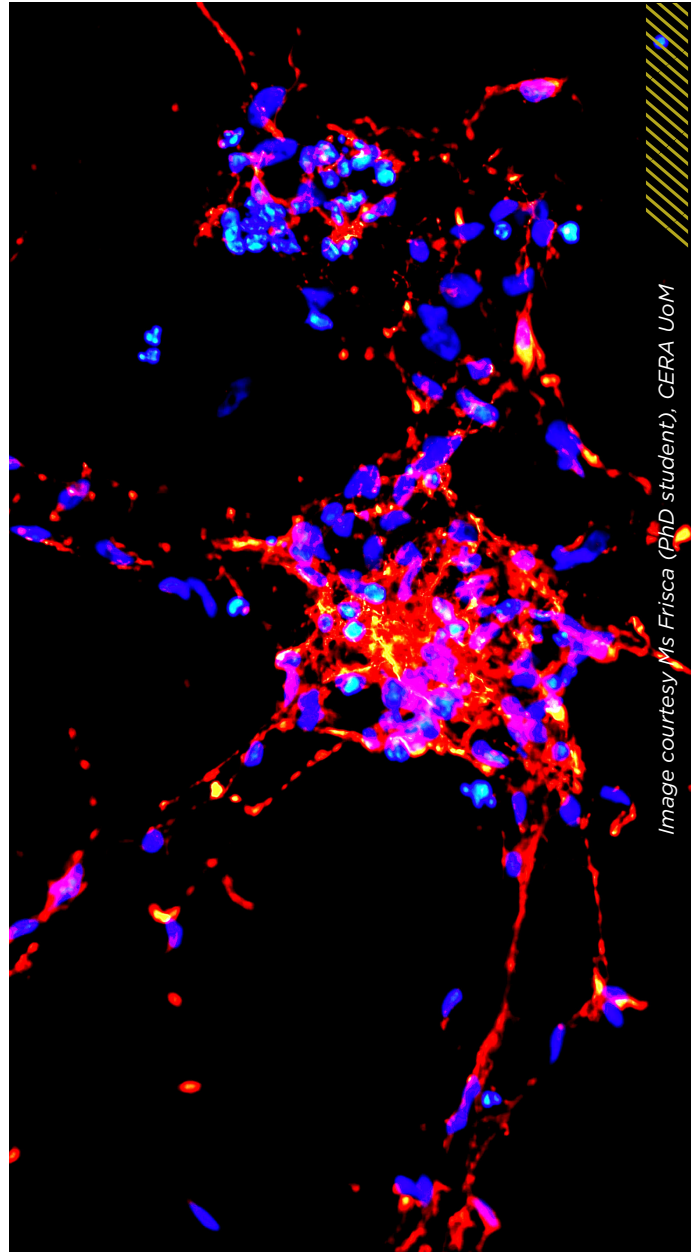


Image courtesy Ms Frisca (PhD student), CERA UoM

Program Leader's Report

Stem cell research and regenerative medicine is a rapidly growing field that is now reaching application in the clinic, as new cell therapies enter early stage trials.



Human stem cells are also coming into wide use as a key research platform for disease modeling, functional genomics, and drug discovery. Stem Cells Australia aims to keep Australian

science on the forefront of this revolution in biomedicine.

Research in the Stem Cells Australia consortium focuses on four areas of stem cell biology:

- pluripotent stem cells, or stem cells that can turn into any tissue in the body
- regeneration and repair in the brain
- regeneration and repair in the heart
- the hematopoietic system, which generates the cells of the blood

Coupled to these four biological themes are platform technologies in bioengineering, nanotechnology and material sciences, and bioinformatics, headed by international leaders in these fields. This multidisciplinary approach provides our researchers with powerful new approaches to tackle both the fundamental and practical challenges that we face in this field. We are now expanding our network of scientists through the appointment of Affiliate Members, who are experts currently collaborating with our investigators, or working in closely related fields. We plan to establish a new focus on morphogenesis (assembly of cells into organs) and tissue engineering, areas that are on the frontier of stem cell biology.

During our first years of operation, SCA researchers have contributed to major scientific studies published in *Cell*, *Cell Stem Cell*, *Nature Biotechnology*, *Immunity*, and the *Journal of Cell Biology*. Some of the key advances include the characterization of genetic and epigenetic stability of human pluripotent stem cells, molecular mechanisms of cell reprogramming, efficient methodology for differentiation of human pluripotent stem cells into neural cells, discovery of stem cells in the heart, and novel pathways for regulation of blood cell formation.

Inside this annual report you will find more detailed information on our publications in peer-reviewed journals, presentations at international meetings and our visiting international fellows. In our first 18 months, we have 24 postgraduate students associated with SCA's core research projects, including direct support of 14 PhD students. We secured philanthropic funding of \$90,000 dollars for a *Science and Society* scholarship, to study public perceptions of stem cell therapy.

We held a workshop with the Center for Commercialization of Regenerative Medicine, an initiative of the Canadian Stem Cell Network, to explore collaborative opportunities for translation and commercialization. We also hosted a visit by representatives from the Institute for Integrated Cell Materials Science at the University of Kyoto and secured funding to support the development of a more formal collaboration.

"...our network of interdisciplinary researchers is well placed to make the breakthroughs that will raise Australia's profile to one of international leadership in the field".

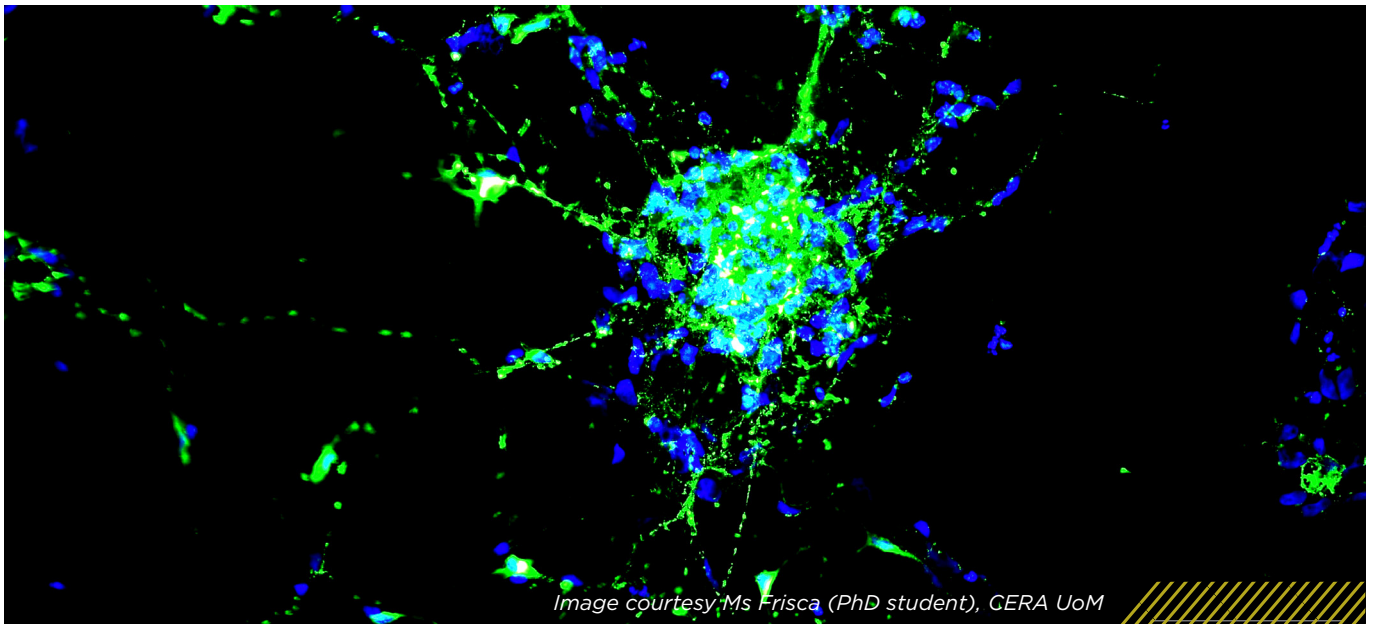


Image courtesy Ms Frisca (PhD student), GERA UoM

Congratulations to Professor Douglas Hilton for his Australian Museum Eureka award for *Outstanding Mentor of Young Researchers*, and to Dr Kylie Greig on receiving an NHMRC CJ Martin Overseas Biomedical Fellowship.

In addition to research, we participate in a range of activities to advance stem cell science. Over 2012, Stem Cells Australia has fostered inter-institutional collaborations via theme workshops within our consortium. We held two Annual Retreats in 2012 highlighting the outstanding science across the network and helping to forge new partnerships across our member institutions.

Outreach is also a significant part of Stem Cells Australia's work. The therapeutic potential of stem cells continues to capture the attention of the public, and there has been an extensive contribution by our members during 2012 to media stories in print, television and - of course - online.

Stem Cells Australia has been active in analyzing and commenting on regulatory policy related to the operation of clinics offering unproven stem cell therapies, a major area of concern for the field. We also made submissions to the Strategic Review of Medical Research (National Statement), and NHMRC advisory documents on human and animal research ethics.

We have developed resources on stem cell therapies for GPs. During National Science Week we co-hosted an event with Quantum Victoria (streamed live), we also worked with the Spinal Cord Injury Network, and Motor Neurone Disease (MND) Australia patient forums.

Stem Cells Australia has been a key resource for patient support, with more than 450 direct patient enquiries and over 20,000 unique visitors to our website.

In 2013, along with industry and academic partners, we will be holding a number of key scientific meetings, including:

- *Eureka! Discoveries in stem cells* – Satellite to 2013 Australian Neuroscience Society Meeting
- The *Cancer and Stem Cells* Meeting with Abcam and Sapphire Bioscience
- SCA and Bio21 Cluster Symposium on *The Therapeutic Potential of Stem Cells*

Though stem cell research and regenerative medicine is more competitive than ever, our network of interdisciplinary researchers is well placed to make the breakthroughs that will raise Australia's profile to one of international leadership in the field. We are looking forward to a very exciting year in stem cell science.

Professor Martin Pera
Program Leader, Stem Cells Australia

Highlights

Stem Cells Australia has achieved rapid growth in many areas in its first 18 months.

ESTABLISHING THE INITIATIVE

- Formal launch by CEO of the Australian Research Council (ARC) 10 November 2011
- There are now 125 researchers involved in 20 core projects across 4 key areas of stem cell science
- Governance and Scientific Advisory Committees established
- Initiative promoted via the establishment of website and quarterly newsletter



RESEARCH PERFORMANCE

- SCA members contributed to 102 publications in peer-reviewed journals
- SCA members were invited to present at over 40 international meetings
- A collaboration with our international visiting fellow resulted in publication and an Australia India Strategic Research Foundation grant

TRAINING AND CAPACITY BUILDING

- Strategic fund of \$0.5M established to support junior researchers by seeding collaborative projects
- Fostered inter-institutional collaboration and mentoring via four research theme workshops
- 22 postgraduate students participating in SCA
- Secured philanthropic funding \$90k for *Science and Society* PhD scholarship



NETWORKING

- SCA members secured international research funding (\$1.5M)
- Successfully secured a DFAT grant to foster collaborative relationships with iCeMS
- Held two Retreats for SCA members, invited experts and Scientific Advisory Committee members
- Established relationship with CCRM via *Translation of Regenerative Medicine & Stem Cell Science Roundtable* co-hosted by SCA and the Canadian Trade Commission
- Capacity and criteria for formal affiliate engagement established

KNOWLEDGE TRANSFER AND OUTREACH

- Raised awareness about concerns with autologous therapies being offered in Australia and abroad
- Made a number of submissions including to the Strategic Review of Medical Research and the review of the National Statement
- Secured \$120k for funding outreach activities
- Development of stem cells resources for General Practitioners
- Quantum Victoria National Science Week event (streamed live)
- Ran multiple patient forums with the Spinal Cord Injury Network and MND
- Responded to over 450 patient enquiries
- Extensive contributions by SCA members to media coverage of stem cells related issues

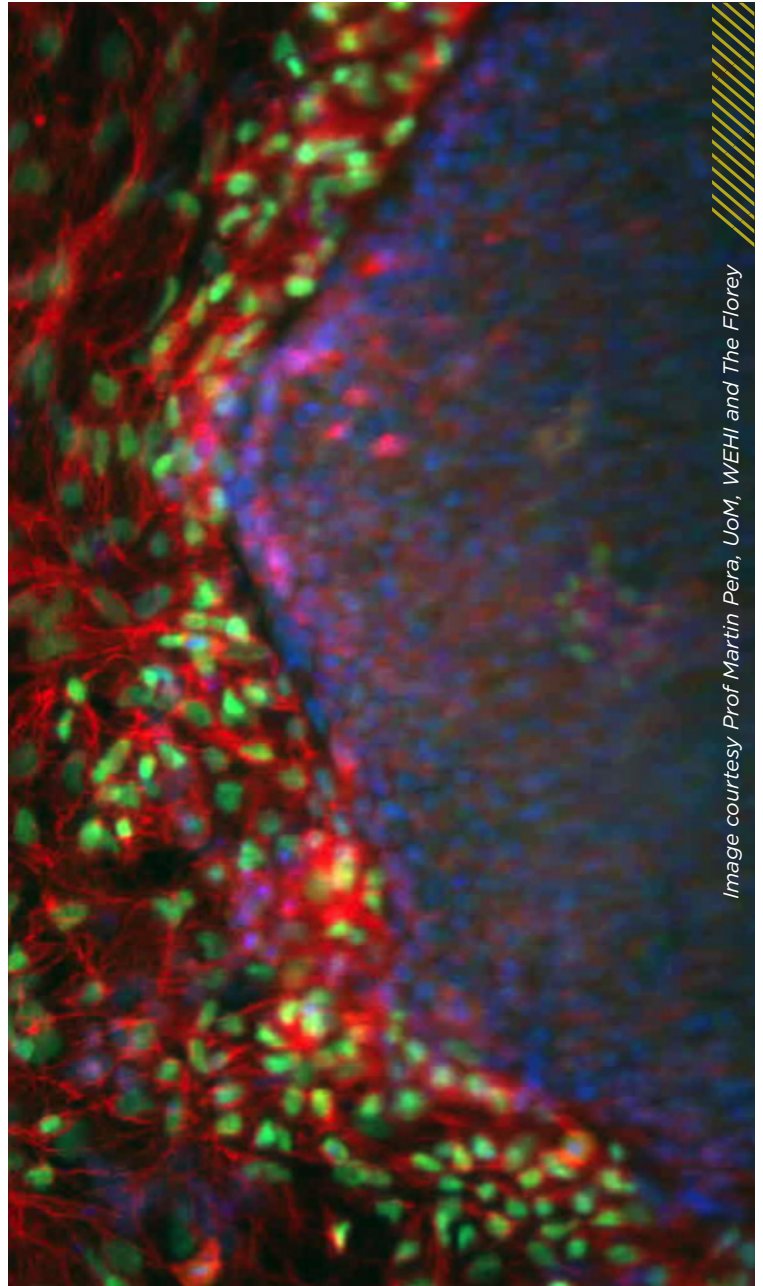


Image courtesy Prof Martin Pera, UoM, WEHI and The Florey

Research Program

Stem Cells Australia's research program encourages collaboration across bioengineering, nanotechnology, systems biology and microbiology disciplines to increase our understanding of the mechanisms of stem cell regulation and differentiation, and our ability to control and influence this process.

The research draws on Australia's strengths in basic stem cell biology of the blood, neural and cardiac systems and cell reprogramming. These areas represent major clinical needs. SCA's approach is firmly grounded in the cellular and molecular analysis of features common to all stem cell systems including multipotency, intrinsic and extrinsic (niche) regulation, asymmetric cell division, activation from quiescence, transient amplification of committed progenitors, distinct chromatin landscapes and epigenetics.

The research program is composed of 20 projects designed around four main themes:

1. Pluripotency and Reprogramming
2. Neural Regeneration and Repair
3. Cardiac Regeneration and Repair
4. Haematopoiesis

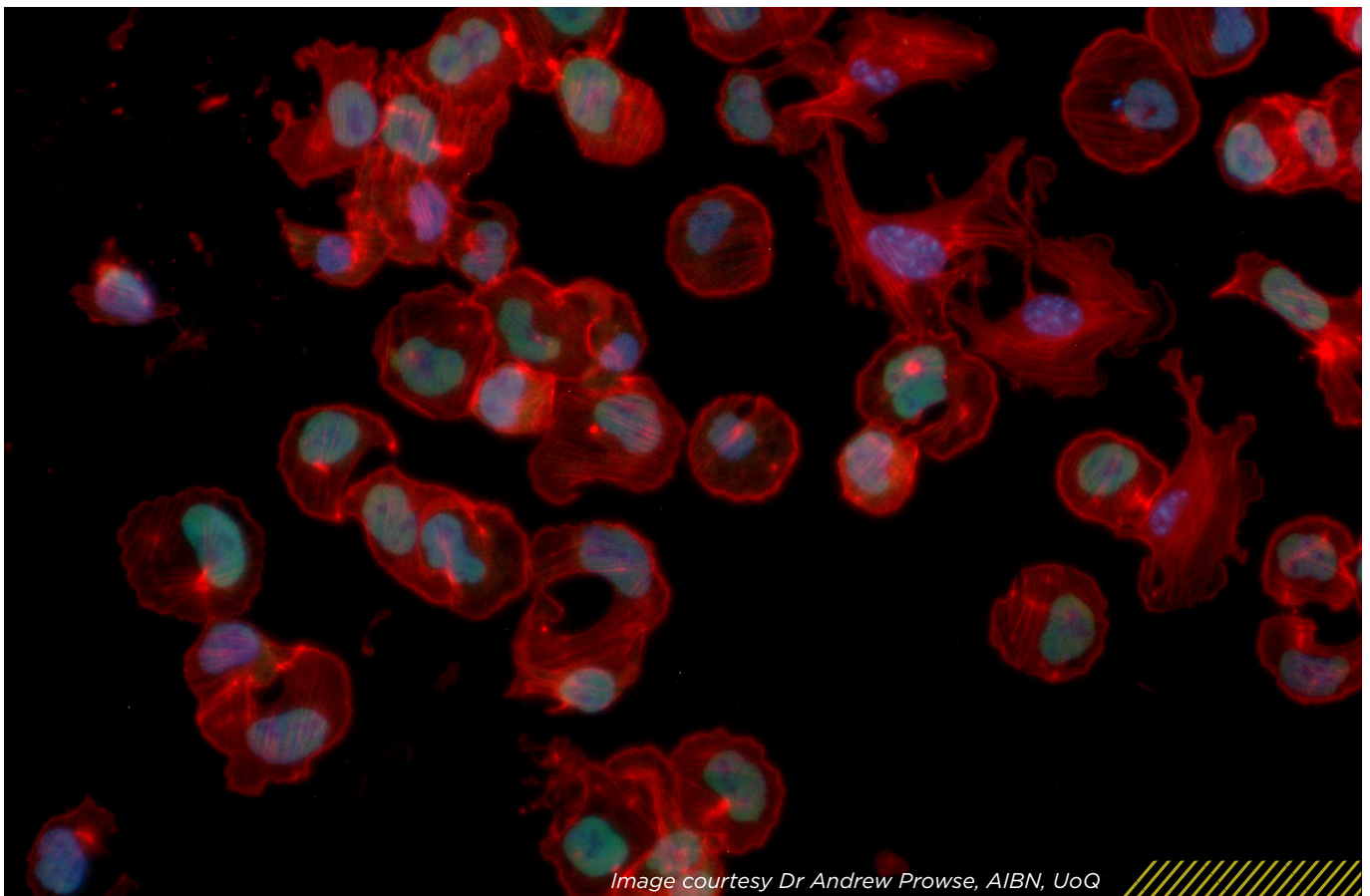


Image courtesy Dr Andrew Prowse, AIBN, UoQ

PLURIPOTENCY AND REPROGRAMMING

THEME LEADERS: MARTIN PERA AND PETER GRAY

Human Embryonic Stem Cells (hESC) and more recently, adult somatic cells reprogrammed to a stem cell state (iPSC) have transformed our capacity to probe developmental and disease mechanisms, and have revolutionized prospects for regenerative medicine and cell replacement in the body. This research program aims to define new platforms for large-scale culture of human hESC and iPSC. It has two main interrelated goals:

1. Propagation and maintenance of pluripotent stem cells
2. Reprogramming and stabilizing pluripotent stem cells

Projects contributing to the first goal focus on propagating and manipulating pluripotent stem cells in defined ways, as a prelude to isolation of defined lineages for cell therapies and drug screening.

Most current systems for ESC propagation yield a heterogeneous population, spanning a continuum from the most primordial cell with extensive self renewal capability, through to lineage primed cells, biased towards particular differentiation pathways, to differentiated cells. To understand how external influences govern progression through this hierarchy, our research uses unique molecular, biochemical and bioengineering methodologies.

The focus on reprogramming and directed differentiation of pluripotent cells is vitally important given the inherent instability of reprogrammed iPSC that have been generated using common protocols. Research projects in this stream use co-application of molecular systems analysis and factor delivery via bioengineered platforms to uncover the signalling parameters underlying the causes of iPSC instability so it can be addressed. This will uncover the key factors that govern this plasticity and enable us to design approaches to prevent or remove the underlying cause of the instability in human iPSC lines.

DIRECTED DIFFERENTIATION TO NEPHRON PROGENITORS

Melissa Little, Minoru Takasato, Er Pei, Barbara Meier

This project aims to optimise the differentiation of pluripotent cell lines to kidney lineages and examine the transferability of these approaches between different lines.

The incidence of chronic renal disease worldwide is increasing. There are insufficient organs to satisfy the need for transplantation, and the alternatives, haemodialysis or peritoneal dialysis, deliver a poor quality of life and represent a significant economic burden. Consequently, there is growing interest in the development of cellular therapies for renal disease.

Nephron formation during kidney development involves the epithelial conversion of a nephron progenitor population, the cap mesenchyme (CM). The CM population is a self-renewing stem cell population that gives rise to all the elements of the nephron with the exception of the collecting duct. This population of cells is lost around birth in mammals, hence no new nephrons can be formed in response to kidney damage after birth. In order to generate this nephron progenitor population, we propose to use directed differentiation through key sequential developmental mileposts.

Outcomes from this project will include novel combinations of growth factors and small molecules able to generate nephron progenitors from pluripotent cells, enabling the generation of nephron progenitors from a readily renewable source for use in cellular therapy.

NEURAL REGENERATION AND REPAIR

THEME LEADERS: PERRY BARTLETT AND TREVOR KILPATRICK

This theme will determine the key molecules that stimulate neurogenesis within the central nervous system (CNS) and explores the relationships, origins, nature and regulation of neural stem cells. An accumulating body of evidence now suggests that the production of new neurons and oligodendrocytes in both the immature and mature nervous system plays a major role in how the mammalian nervous system learns and adapts to a changing environment and to disease or damage. Research projects involve generation of progenitor cells and functional tissue from hESC and iPSC sources, and will provide new opportunities for drug screening and understanding disease mechanism, and cell therapy. The theme has three main foci:

1. Endogenous stem cells in the Central Nervous System (CNS)
2. Oligodendrocyte precursors
3. Early CNS progenitors from pluripotent stem cells

Recent data indicate that stem cells may be activated in response to injury. Both *in vitro* and *in vivo* studies have demonstrated that oligodendrocyte progenitor cells (OPC) could be activated to become multipotent stem cells following injury. The multipotentiality of OPC presents a novel therapeutic mechanism to address pathophysiological conditions such as multiple sclerosis, stroke and epilepsy and to evaluate the importance of neurogenesis to learning and spatial memory.

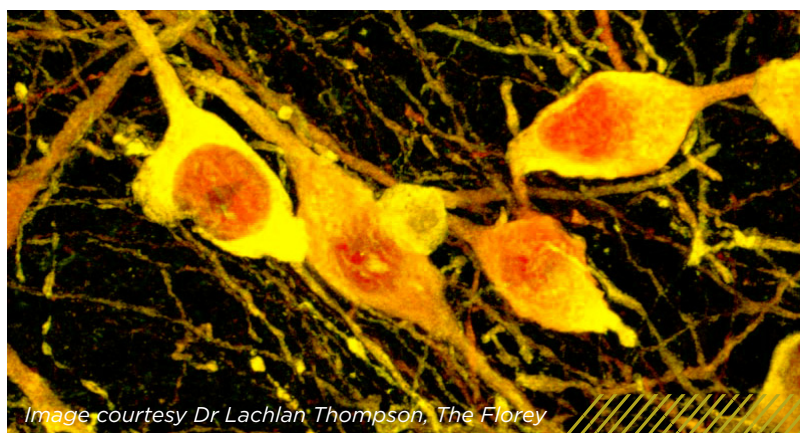


Image courtesy Dr Lachlan Thompson, The Florey

Research methodologies are based on hypothesis that neurogenesis supports the formation of new synapses, which is important for optimal brain function throughout life, and also provides a mechanism to repair and regenerate damaged and dysfunctional brains. The projects examine the effect of conditional deletion of particular cell populations in combination with cell-specific reporter lines to increase our understanding of how neural cell integration is effected.

The theme also develops models of the regenerative capacity for disease states such as multiple sclerosis (MS). The use of these disease models will also provide the capacity to interrogate similarities and differences in the capacity of cell types to respond to either direct insult or the demand for a regenerative response. This has the potential to increase our understanding of how these regenerative responses could be maximized.

NEURAL SPECIFICATION FROM HUMAN PLURIPOTENT STEM CELLS

Martin Pera, Mirella Dottori and Mark Denham

This project investigates the factors and signalling pathways involved in differentiating human embryonic stem cells (hESC) to neural progenitors of the nervous system. It will also provide a model of how neuronal populations within the human brain are specified during the earliest stages of embryogenesis. Work on this project has developed a method for deriving early neuroepithelial cells from human pluripotent stem cells.

This study will address our hypothesis that the addition of patterning extrinsic signals during hESC neural induction may direct cell fates towards specific neuronal lineages. We predict that the default pathway of hESC neural induction will give rise to forebrain neural progenitors, and that supplementation of posterior factors during specific stages of neural induction will generate progenitors ranging from midbrain to spinal cord cell types, depending on factor concentrations and timing of exposure.

CARDIAC REGENERATION AND REPAIR

THEME LEADERS: NADIA ROSENTHAL AND RICHARD HARVEY

In the heart, cardiac-resident multipotent stem cells are rare in adults and compromised by aging, but retain the capacity to be expanded *in vitro* or augmented in homeostasis and repair. Understanding the mechanisms that regulate stem cell function in these largely post-mitotic tissues will provide the basis for the development of new therapeutic approaches to address common conditions affecting large segments of the population.

Research projects include the generation of progenitor cells and functional tissue from ESC* and iPSC sources providing new opportunities for drug screening and understanding disease mechanism, and cell therapy.

The long-held belief that adult mammalian hearts have no homeostatic or regenerative reserve in response to ischaemic injury, has been challenged by three major findings. First, carbon dating studies in humans indicate that cardiomyocytes (CM) turn over at a low rate in the healthy heart.

Secondly, fate-mapping studies in the mouse indicate ~5-15% CM turnover after injury. Third, stem-like cells have been recently identified in the heart. Projects explore at a molecular and systems biology level how “stemness” is maintained and how populations compromised by aging and disease might be rejuvenated.

It has been demonstrated that mature mammalian CMs can be stimulated to divide, overturning the long-held paradigm that CMs terminally withdraw from the cell cycle. Division can be induced by growth factors, or after inhibition of the stem cell-associated tyrosine kinase receptor. Systems approaches are being used to unravel the molecular basis underlying this remarkable shift in CM proliferative capacity.

PDGF treatment via minipump has been shown to considerably improve repair after cardiac infarction. Work is being undertaken to characterize the cellular processes that underlie this phenomenon and develop it as a therapeutic model.

PROSPECTS FOR CARDIOMYOCYTE REPROGRAMMING

**Bob Graham, Ming Li, Siiri Iismaa, Poornima Balaji,
Ahtesham Ul Haq, Amy Nicks**

Heart attacks account for over 21,000 deaths in Australia annually. The limited regenerative capacity of the human heart remains a major impediment for heart repair after injury, or in response to increased workload, as occurs with chronic hypertension or aortic valve disease and myocardial infarction (MI). Recent studies have suggested that under certain conditions some adult CMs can be induced to replicate. The paradigms and mechanisms underlying CM regeneration are being investigated, to create approaches to improve myocardial repair.

This project is evaluating myocardial repair by cardiomyocyte (CM) proliferation, in the perinatal period and at later times after birth. Specifically, it will evaluate the ability of c-kit inactivation to maintain CM proliferative competence when induced both from birth and later in the adult heart. The project will also explore the molecular mechanisms underlying CM terminal differentiation, and seek to understand how CM cross-talk with the myocardial vasculature stimulates neoangiogenesis to allow activation of proliferative CM.

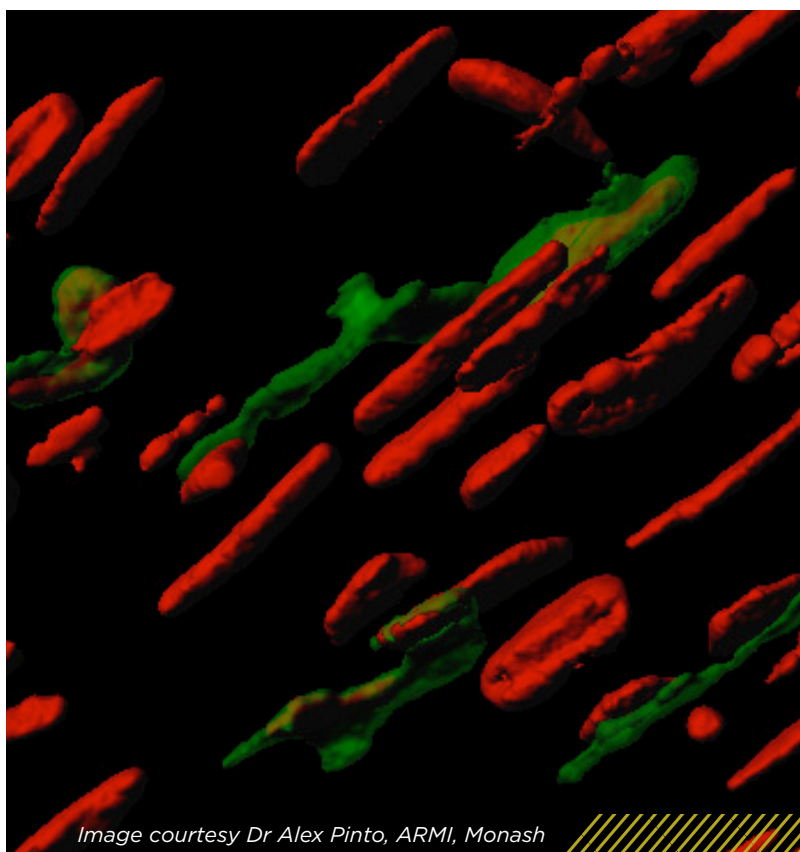


Image courtesy Dr Alex Pinto, ARMI, Monash

HAEMATOPOSIS

THEME LEADERS: DOUG HILTON AND DAVID HAYLOCK

The translational and therapeutic utility of stem cells is dependent on their reliable and efficient differentiation into specific cell lineages. Techniques for directed differentiation of stem cells into specific cell types are currently based on reconstructing in the culture dish the sequential conditions during normal embryonic development. The use of haemopoietic stem cells (HSC) represents one example of the successful application of stem cells to regenerative medicine; however, the paucity of HSC limits their more extensive application. This theme aims to define parameters for the effective conversion of human pluripotent stem cells into select blood tissue lineages and differentiated cell subtypes.

We aim to understand the molecular events that allow de novo HSC generation during development, and how this process relates to the differentiation of HSC from pluripotent stem cells in vitro. Breakthroughs made in our understanding of de novo HSC formation in the embryo will be combined with outputs from the suite of genetic and genomic resources used to identify crucial molecular pathways regulating these processes.

Using targeted genetic manipulation of hESCs, we can refine protocols for HSC production and monitor their differentiation through the examination of developmental potential and cell surface markers.

A translational extension of this theme is the generation of megakaryocytic cells from hESC and their culture in novel bioreactor systems designed to produce platelets for transfusion. This work will have the ultimate objective of creating a fully synthetic culture system for reproducible large-scale production of platelets without non-human proteins or serum.

ENGINEERING PROCESSES FOR SUSTAINABLE MATURE BLOOD MANUFACTURING

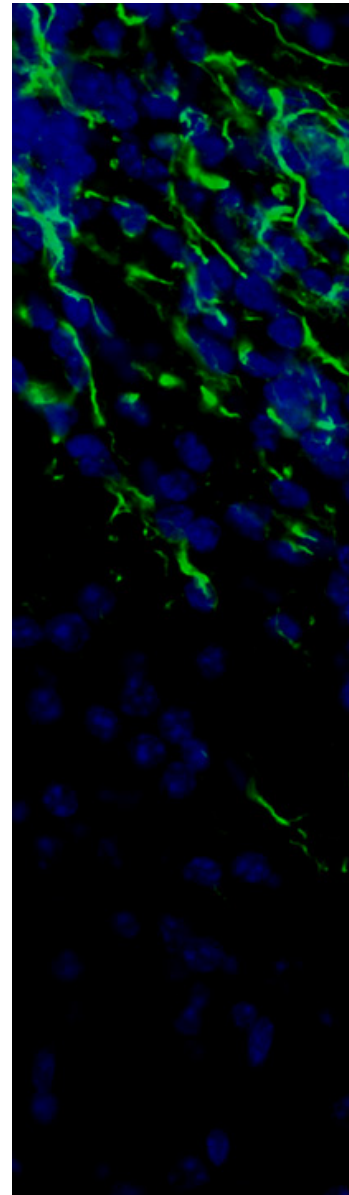
Lars Neilson, Stacey Andersen, Marion Brunck, Flavia Marturana, Jessica Schwaber

This project will evaluate the compatibility of recent protocols for true haematopoietic stem cell (HSC) expansion with protocols for expansion and differentiation along the neutrophil lineage. It also aims to engineer cells capable of multilineage differentiation for use in the manufacture of transfusable blood products.

Several expansion protocols seemingly enable moderate expansion of true HSC. We intend to evaluate the compatibility of recent protocols from the Centre for Commercialization of Regenerative Medicine with our expansion and differentiation protocols. If these protocols enable increased yield, the potential for a clinical trial will be considered.

However, new protocols still yield only a moderate increase in HSC on a background of large increases in total cells. A more direct approach would be to conditionally immortalise donor derived HPC.

The molecular basis for conditional immortalisation is poorly understood. With recent advances in transduction pathway mapping as well as transcription factor mapping, it is possible to begin molecular level modelling of the signal transduction and transcription regulation pathways underlying normal differentiation as well as abnormal transitions.



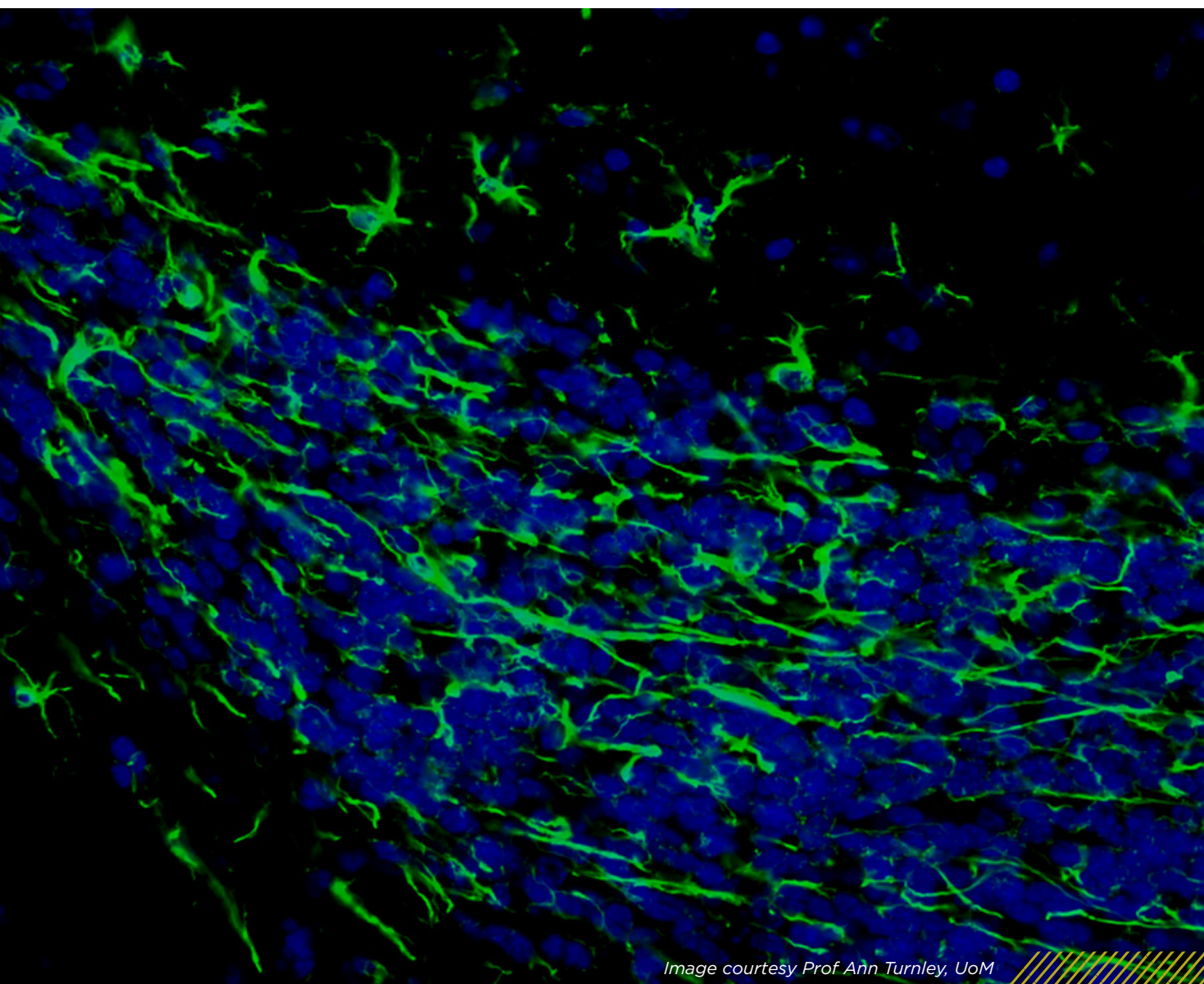


Image courtesy Prof Ann Turnley, UoM



Education, Ethics, Legal and Community Awareness Unit

Stem cell science attracts considerable interest due to both the promise of innovative therapies, as well as concerns about the potential ethical and social impact of new discoveries on society.

Stem Cells Australia's Education, Ethics, Law and Community Awareness Unit has been established to address such concerns through contextualizing developments in this fast-paced field via our public outreach activities. We also seek to foster multi-disciplinary research into associated ethical, legal and societal issues, with findings forming our policy recommendations and the foundation for our educational material and communication strategies.

The unit is jointly funded by the University of Melbourne and Monash University.

OUTREACH ACTIVITIES

During 2011/2012 our outreach program consisted of a series of targeted events held across Australia. Our aim was to increase the audience's understanding of both the promise of stem cell science, as well as the current limitations and challenges that the field faces.

Our events included dedicated workshops and public lectures that focused on highlighting developments in stem cell science for specific conditions such as Motor Neurone Disease, spinal cord injury, vision loss and multiple sclerosis. The workshops aimed to assist the audience to distinguish between hype promulgated in websites and media reports, and the reality of the progress that is actually being made in stem cell science.

Importantly, such progress may not directly result in cellular therapies but, by learning more about what's happening to the cells in a certain condition, allow scientists to identify new therapeutic targets. Patients, their family, friends, carers and interested medical and allied healthcare professional, attended each event. Events were co-hosted with key patient support groups in Adelaide, Brisbane, Sydney, Melbourne and Auckland.

The growing practice of selling unproven stem cell 'treatments' directly to patients was discussed at all events. Such treatments – which effectively by-pass the clinical trials framework – are often promoted as safe, and with claims of 'improvements', but with little pre-clinical or clinical evidence to support the claims. For patients and their loved ones desperate for any option, these clinics – overseas and in Australia – are understandably attractive. Our forums raised concern about such practices, recognized the complexity of distinguishing hype and hope from reality, and provided the audience with an opportunity to have their questions answered by experts in the field.

“The workshops aimed to assist the audience to distinguish between hype promulgated in websites and media reports, and the reality of the progress that is actually being made in stem cell science.”

We would like to thank our co-hosts for their generous support of our 2011/12 outreach activities:

- AusBiotech
- Centre for Eye Research Australia
- Centre for Value Ethics and the Law in Medicine, University of Sydney
- Coalition for the Advancement of Medical Research Australia
- Huntington's Victoria
- MND Australia
- MS Australia
- National Stem Cell Foundation of Australia
- NSW Stem Cell Network
- Quantum Victoria
- Spinal Cord Injury Network

We also held a series of workshops for doctors - in conjunction with the NSW Stem Cell Network and sponsored by the Royal Australasian College of Physicians - to provide an update on progress in the field. Additional educational material developed by SCA included an on-line resource hosted by RACP and articles in the *Australian Doctor*.

During 2012 National Science Week, and in conjunction with Quantum Victoria, we held a full-day workshop for high school students who were interested in gaining a deeper understanding of how computer science is being applied to the field of biology and medicine. In particular, we showcased the power of bioinformatics and how understanding gene expression helps stem cell biologists develop safer therapies. The workshop was delivered by University of Queensland's Professor Christine Wells and CSIRO's Dr Andrew Laslett. We also hosted 'Meet the Stem Cell Scientist' seminars to highlight the rich and varied career pathways undertaken by Stem Cells Australia members.

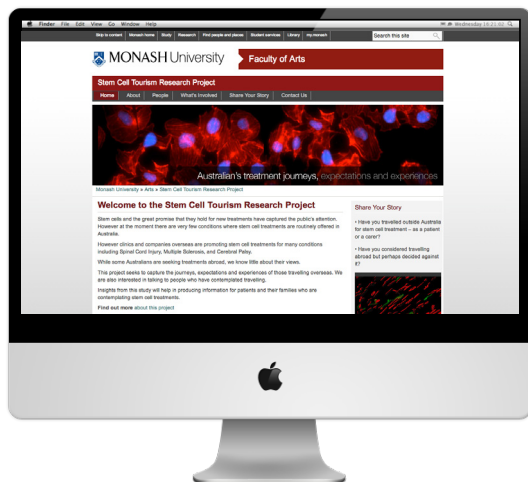


The launch of Stem Cells Australia's website has also been an invaluable means of connecting with the public. We have had over 22,000 visitors to the website and directly responded to almost 500 enquires.

Stem Cells Australia members have been invited to present at schools, Rotary, Probus and Lions Club meetings and numerous community forums, including Alfred Health Research Week, Melbourne Neuroscience Institute Public Seminar series and The Royal Children's Hospital Campus Research and Education Week.

Stem Cells Australia members have also featured prominently in print media as well as radio and television programs such as The Project, ABC Radio National's Health Report, Background Briefing and Science on Radio National Summer Series. A full listing appears on pages 63-64.

During 2012, the Education, Ethics, Law and Community Awareness Unit was also successful in attracting funding from the National Stem Cell Foundation of Australia, Department of Industry, Innovation, Science, Research and Tertiary Education and SpinalCure Australia to support the development of new educational resources and outreach activities. We were also able to secure a philanthropic donation to establish the *Science in Society* PhD scholarship. In total, we secured over \$120,000 during 2012.



RESEARCH & POLICY

Understanding more about stem cell tourism, where Australians travel abroad for stem cell treatment, was a significant research activity undertaken by the unit. Associate Professor Megan Munsie was part of an international team awarded a 2012 ARC Discovery grant - *High hopes, high risk? A sociological study of stem cell tourism*. This project, led by Monash's Professor Alan Petersen, seeks to examine the factors shaping Australians' views and expectations of stem cell treatments offered abroad by capturing the experience of those who have travelled or contemplated doing so. Insights from this study will be used to make policy recommendations and improve our outreach activities and educational resources.

Stem Cells Australia provided briefings to Therapeutic Goods Administration; BioMelbourne Network; Therapeutic Innovations Australia; Victorian Government Department of Business and Innovation; GE Healthcare; and the Chinese Academy of Sciences. We also made submissions to:

- the 2012 Strategic Review of Medical Research;
- the Australian Health Ethics Committee's consultation on revisions to the *National Statement on Ethical Conduct in Human Research*;
- proposed revisions to the Australian code of practice for the care and use of animals for scientific purposes; and,
- the NHMRC consultation of draft documents for doctors and patients on stem cell treatments.



Jane Kotey is a first year PhD student based in the School of Political and Social Inquiry at Monash University.

Jane is exploring the sociocultural dynamics behind the practice of 'stem cell tourism' where Australians are travelling to China to undergo unproven or experimental stem cell-based treatments. Jane's project aims to examine the conceptions of hope and risk in the clinical setting, and what role, if any, government and peer-regulation in China impact on patients' decision-making processes.

She will be undertaking field work in China in late 2013.

Jane's research complements that being undertaken in the larger ARC-funded *High hopes, high risk? A sociological study of stem cell tourism* project which seeks to examine the factors shaping Australians' views and expectations of stem cell treatments offered abroad.

Jane is supported by the *Science and Society* PhD scholarship and jointly supervised by Alan Petersen, Monash Professor of Sociology and Megan Munsie, Head - Education, Ethics, Law & Community Awareness Unit, Stem Cells Australia.

Performance

KEY RESULT AREA 1: RESEARCH PERFORMANCE

INNOVATIVE, INTERNATIONALLY COMPETITIVE RESEARCH STRATEGICALLY FOCUSED
ON FUNDAMENTAL STEM CELL SCIENCE - NUMBER OF RESEARCH OUTPUTS

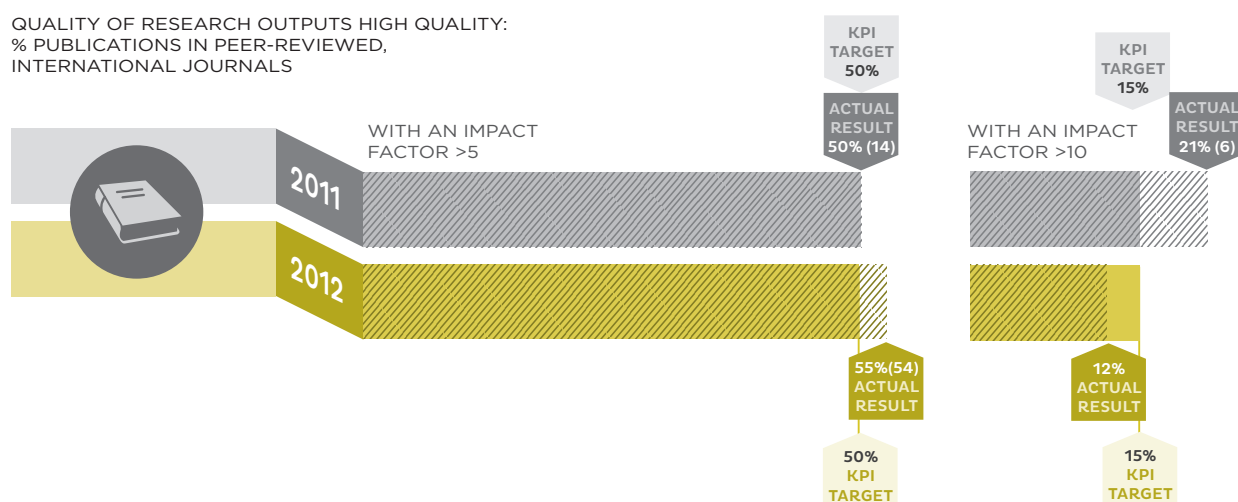
JOURNAL PUBLICATIONS



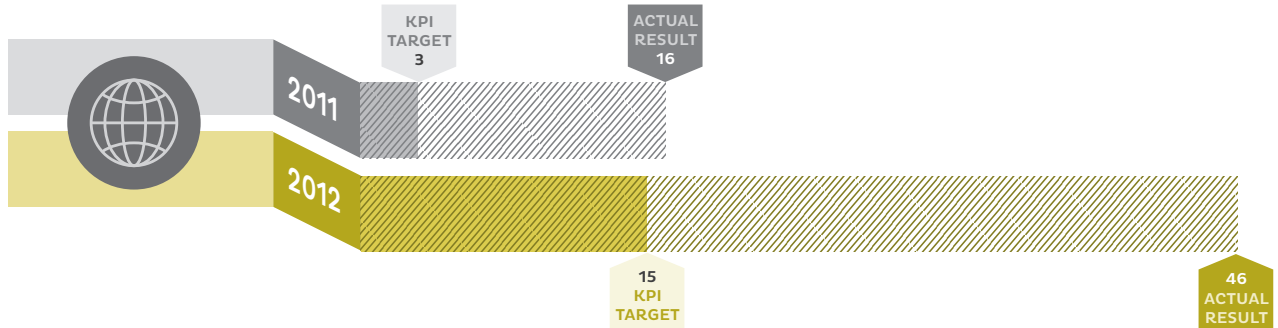
REFERREED CONFERENCE PROCEEDINGS



QUALITY OF RESEARCH OUTPUTS HIGH QUALITY: % PUBLICATIONS IN PEER-REVIEWED, INTERNATIONAL JOURNALS



NUMBER OF INVITED TALKS/PAPERS/KEYNOTE
LECTURES GIVEN AT MAJOR INTERNATIONAL MEETINGS

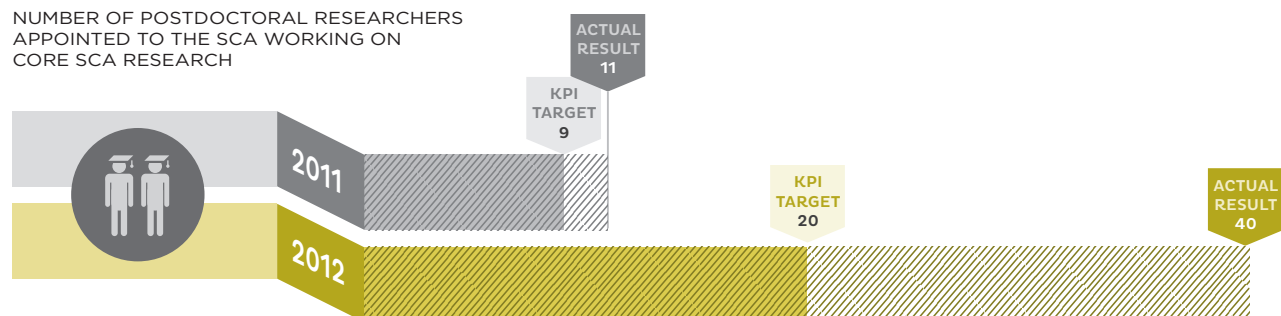


KEY RESULT AREA 2: RESEARCH TRAINING AND CAPACITY BUILDING

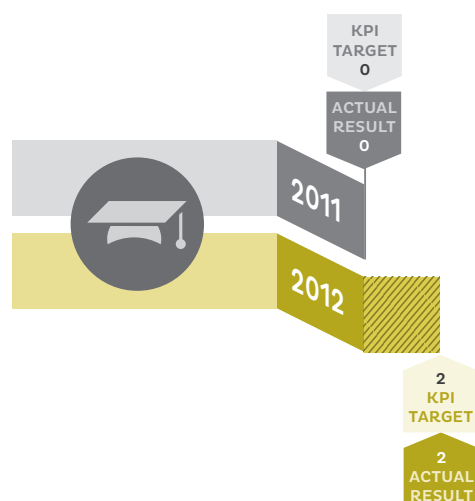
NUMBER OF NEW POSTGRADUATE STUDENTS WORKING ON
CORE SCA RESEARCH AND SUPERVISED BY SCA MEMBERS



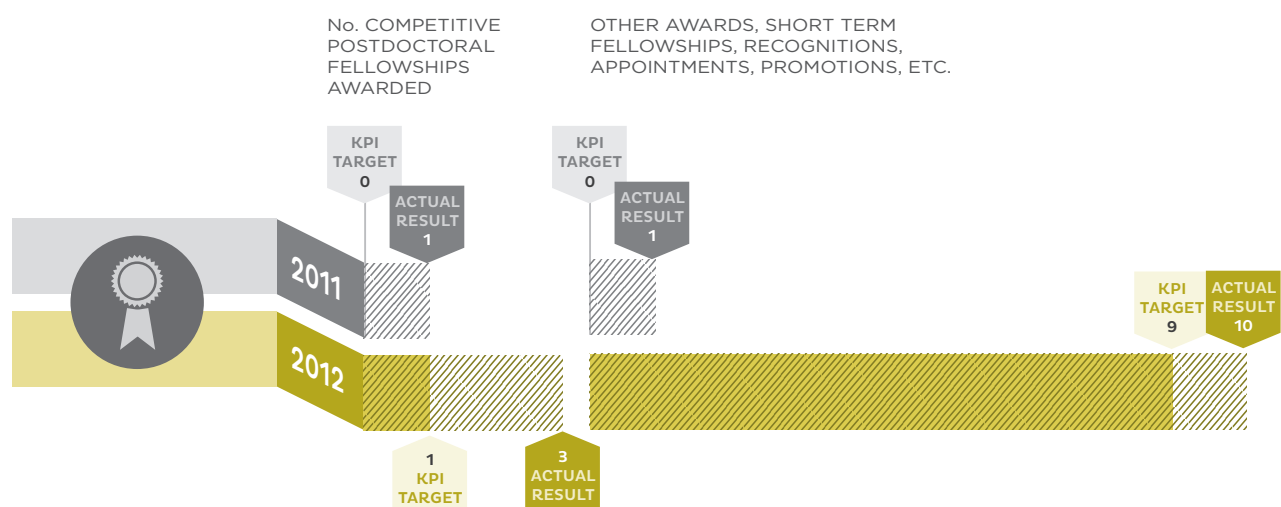
NUMBER OF POSTDOCTORAL RESEARCHERS
APPOINTED TO THE SCA WORKING ON
CORE SCA RESEARCH



NUMBER OF POSTGRADUATE COMPLETIONS BY
STUDENTS WORKING ON CORE SCA RESEARCH
AND SUPERVISED BY SCA MEMBERS



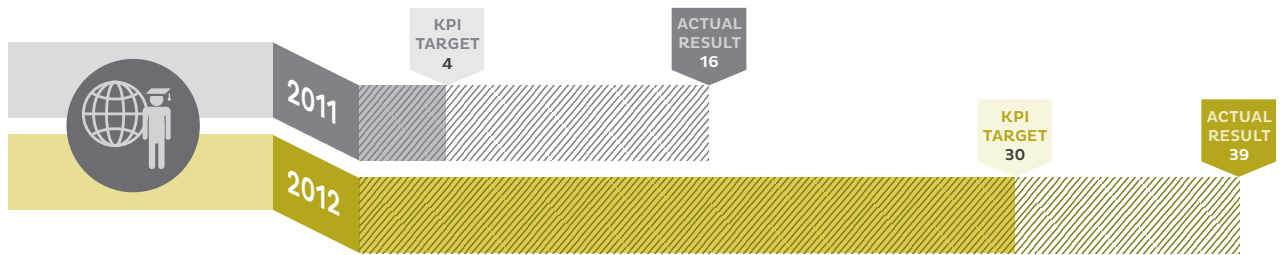
QUALITATIVE MEASURES OF CAPACITY BUILDING:



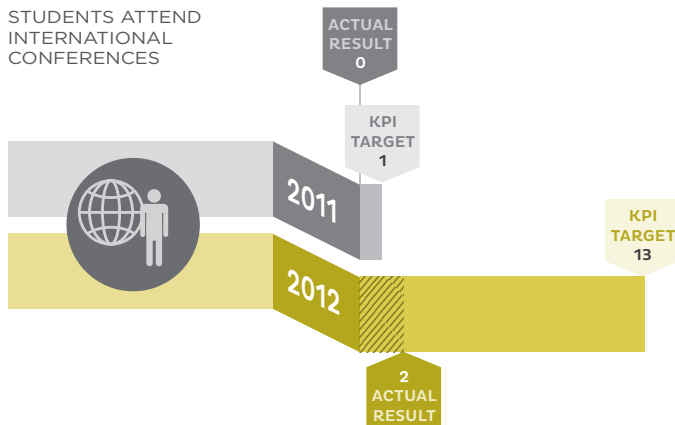
KEY RESULT AREA 3: INTERNATIONAL, NATIONAL LINKS AND NETWORKS

INTERNATIONAL COLLABORATION

RESEARCHERS, FELLOWS ATTEND AND PRESENT
AT INTERNATIONAL CONFERENCES

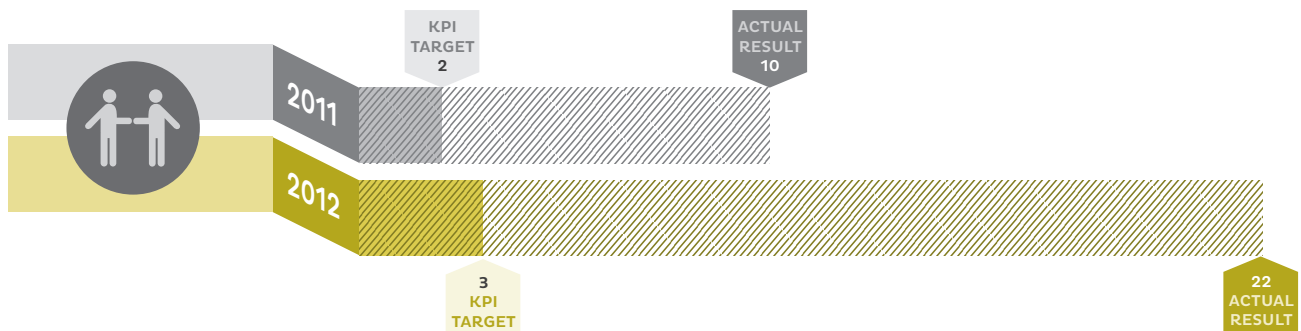


STUDENTS ATTEND
INTERNATIONAL
CONFERENCES

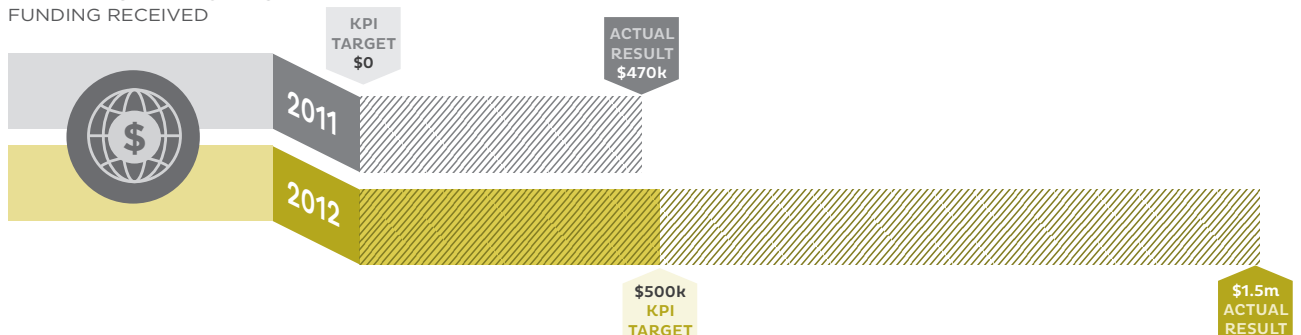


INTERNATIONAL COLLABORATION

RESEARCH COLLABORATIONS WITH
INTERNATIONAL CENTRES



INTERNATIONAL RESEARCH
FUNDING RECEIVED

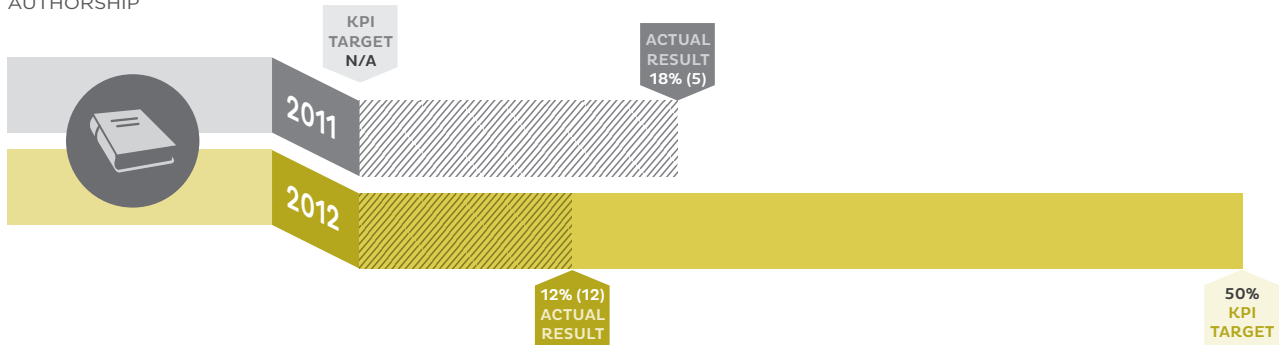


NATIONAL COLLABORATION:
CROSS-INSTITUTIONAL/ COLLABORATION DEFINED AS ACROSS RESEARCH INSTITUTIONS
(I.E. COLLABORATING AND PARTNER ORGANISATIONS) WITHIN SCA

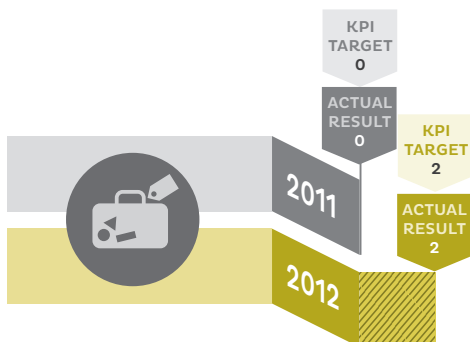
ANNUAL RETREAT
ATTENDED BY 80% OF
RESEARCHERS, FELLOWS,
STUDENTS



% PUBLICATIONS INCLUDING
CROSS-INSTITUTIONAL
AUTHORSHIP



NUMBER OF INTERNATIONAL VISITORS AND VISITING FELLOWS
FUNDED WITH SCA FUNDS STAYING BETWEEN 1-2 MONTHS (APPROX)

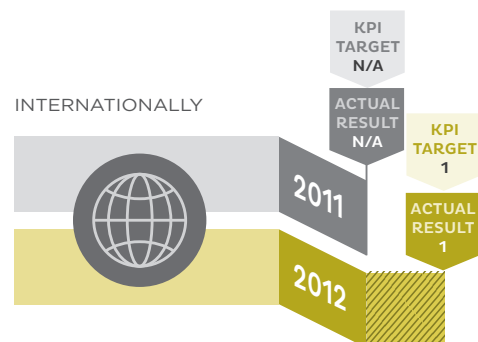


NUMBER OF WORKSHOPS
HELD/ORGANISED BY THE SCA

NATIONALLY

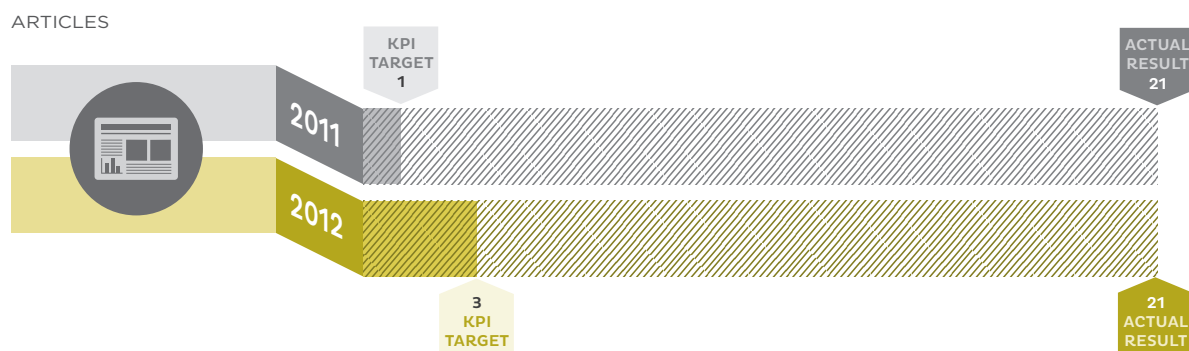
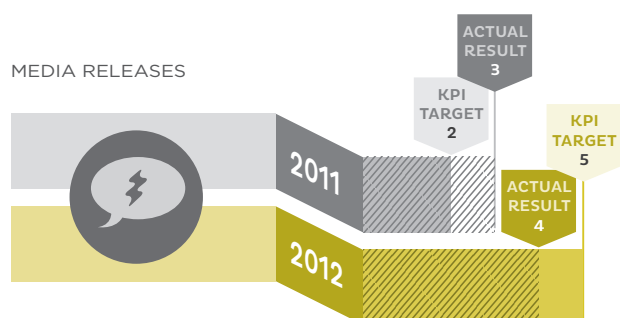


INTERNATIONALLY

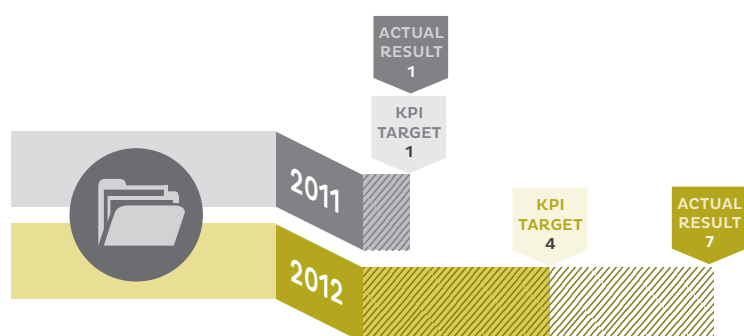


KEY RESULT AREA 4: KNOWLEDGE TRANSFER, OUTREACH AND COMMUNICATION

NUMBER AND NATURE OF COMMENTARIES ABOUT THE SCA'S ACHIEVEMENTS



NUMBER OF GOVERNMENT, INDUSTRY AND BUSINESS COMMUNITY BRIEFINGS



NUMBER AND NATURE OF PUBLIC AWARENESS PROGRAMS:



CURRENCY OF INFORMATION ON THE SCA'S WEBSITE



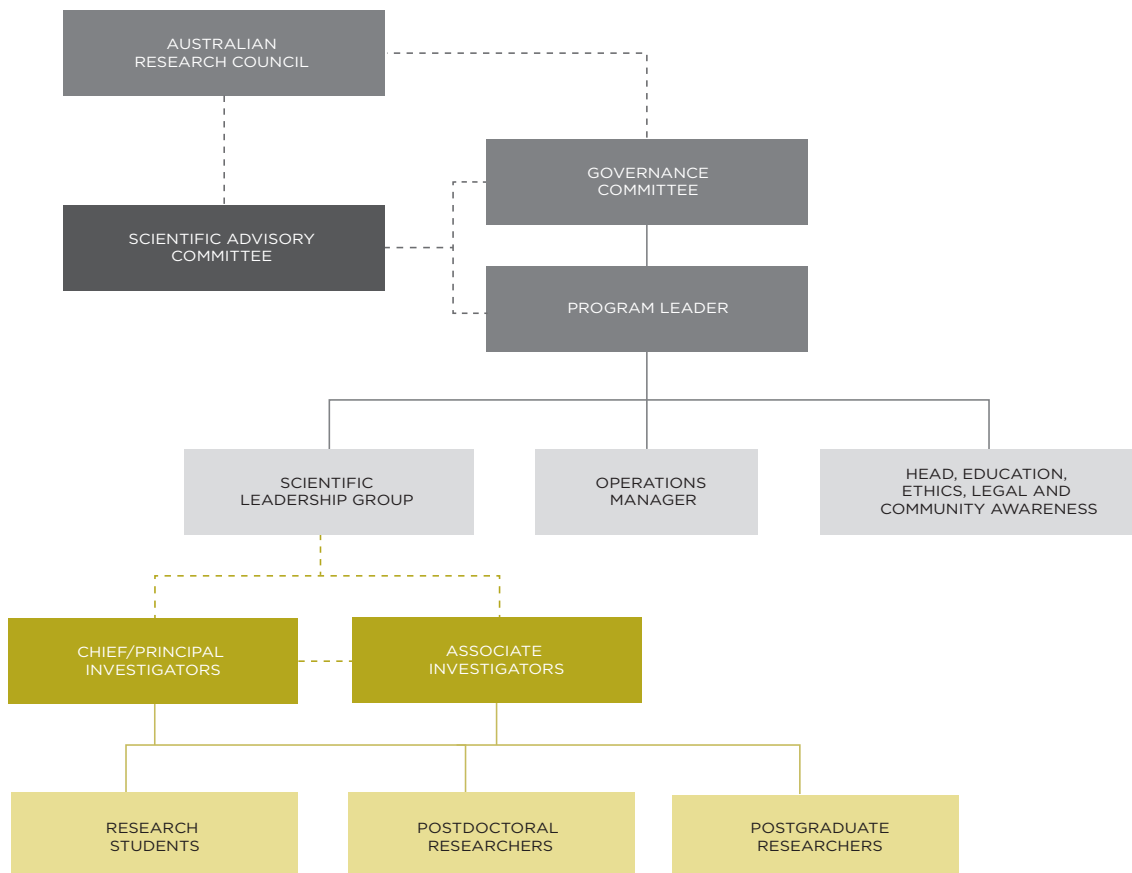
NUMBER OF WEBSITE HITS



Governance

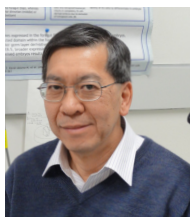
Stem Cells Australia is an unincorporated joint venture of the University of Melbourne, Monash University, University of Queensland, University of New South Wales, Walter and Eliza Hall Institute for Medical Research, Victor Chang Cardiac Research Institute, Florey Institute of Neuroscience and Mental Health and the Commonwealth Scientific and Industrial Research Organisation.

It operates under the requirements of the Australian Research Council's Strategic Research Initiative program.



SCIENTIFIC ADVISORY COMMITTEE

The Scientific Advisory Committee has the role of evaluating the science being conducted and research produced by the Initiative. It's members also provide an international perspective of the excellence of the scientific work undertaken by the Initiative. Their advice supports the Program Leader and the Governance Committee making strategic decisions about the nature of research the Initiative will support. The Committee will be heavily involved in reviews of the Initiative required by the ARC.



Professor **Patrick Tam**
Children's Medical Research
Institute, Sydney



Professor **Shin-Ichi Nishikawa**
RIKEN Kobe Institute
Japan



Professor **Christine Mummery**
Leiden University
Netherlands



Professor **Michael Rudnicki**
Ottawa Hospital Research Institute
Canada



Professor **Peter Zandstra**
University Of Toronto
Canada



Professor **Andras Nagy**
Lunenfeld Research Institute,
Canada

GOVERNANCE COMMITTEE

The Governance Committee is essentially a representative Board which ensures the Initiative is well managed with a particular focus on the research program and budget. It also provides strategic advice to the Program Leader.



Professor **David de Kretser**
Independent Chair



Professor **Max Lu**
University of Queensland



Dr **Keith McLean**
Commonwealth Scientific and
Industrial Research Organisation
(CSIRO)



Professor **Ross Coppel**
Monash University



Dr **Henry de Aizpurua**
The Florey Institute of Neuroscience
and Mental Health (The Florey)



Professor **Mark Hargreaves**
University of Melbourne (UoM)



Ms **Britt Granath**
Victor Chang Cardiac Research
Institute (VCCRI)



Associate Professor
Laurent Rivory
University of New South Wales
(UNSW)



Dr **Julian Clark**
Walter & Eliza Hall Institute
of Medical Research (WEHI)

SCIENTIFIC LEADERSHIP GROUP

The Scientific Leadership Group is an advisory and co-ordination body. It is there to assist the Program Leader to:

- develop the annual research program;
- monitor and review research activities;
- co-ordinate SCA activities in the broader community.



Professor **Martin Pera**
Program Leader
UoM, WEHI, The Florey



Professor **Perry Bartlett**
Queensland Brain Institute (QBI)
UQ



Professor **Doug Hilton**
UoM, WEHI



Professor **Peter Gray**
Australian Institute for
Bioengineering and
Nanotechnology (AIBN), UQ



Professor **Trevor Kilpatrick**
UoM



Professor **Richard Harvey**
UNSW, VCCRI



Professor **Melissa Little**
Institute of Molecular Biology (IMB)
UQ



Professor **David Haylock**
CSIRO



Professor **Nadia Rosenthal**
Australian Regenerative Medicine
Institute (ARMI), Monash



MANAGEMENT

The Program Leader is responsible for the overall direction and operation of SCA. This role encompasses research leadership, management and communication, liaison and development responsibilities.

The Operations Manager oversees the operations of the Stem Cells Australia Initiative and is responsible for the oversight of SCA's financial, compliance, organisational, and resource requirements, as well as the reporting requirements of SCA's funding bodies.

The Operations Manager also provides strategic advice and senior executive support to the Program Leader, the Governance Committee, the Scientific Leadership Group and the Scientific Advisory Committee.

The Head, Education, Ethics, Legal and Community Awareness' role is to facilitate knowledge transfer through public education and policy development. Delivering this role requires:

- engagement with scientists, patients, patient/practitioner organisations, government/industry representatives, media organisations;
- event participation, support and/or organization;
- liaison between researchers and other parties
- management of the website and co-ordination of reporting on outreach performances indicators



Professor **Martin Pera**
Program Leader



Ms **Leanne McDonald**
Operations Manager



Ms **Jennifer Kendall**
Executive Assistant
to Program Leader



Associate Professor
Megan Munsie
Head, Education, Ethics, Legal
and Community Awareness

Our People

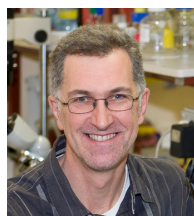
CHIEF AND PRINCIPAL INVESTIGATORS



Professor **Martin Pera**
Chief Investigator
UoM, The Florey, WEHI



Professor **David Gardner**
Chief Investigator
UoM



Professor **Warren Alexander**
Principal Investigator
WEHI



Professor **Robert Graham AO**
Chief Investigator
UNSW, VCCRI



Associate Professor
Tiziano Barberi
Chief Investigator
ARMI, Monash



Professor **Peter Gray**
Chief Investigator
AIBN, UQ



Professor **Perry Bartlett**
Chief Investigator
QBI, UQ



Professor **Sean Grimmond**
Chief Investigator
IMB, UQ



Professor **Justin Cooper-White**
Chief Investigator
AIBN, UQ



Professor **Richard Harvey**
Chief Investigator
UNSW, VCCRI



Professor **Andrew Elefanty**
Chief Investigator
MISCL, Monash



Professor **David Haylock**
Chief Investigator
CSIRO



Professor **Doug Hilton**
Chief Investigator,
UoM, WEHI



Associate Professor **Susie Nilsson**
Principal Investigator, CSIRO



Professor **Trevor Kilpatrick**
Chief Investigator, UoM



Professor **Nadia Rosenthal**
Chief Investigator, ARMI, Monash



Associate Professor
Andrew Laslett
Principal Investigator, CSIRO



Professor **Ed Stanley**
Chief Investigator, MISCL, Monash



Professor **Melissa Little**
Chief Investigator, IMB, UQ



Associate Professor **Christine Wells**
Chief Investigator, AIBN, UQ



Professor **Michael Monteiro**
Chief Investigator, AIBN, UQ



Associate Professor **Ernst Wolvetang**
Chief Investigator, AIBN, UQ



Professor **Lars Nielson**
Chief Investigator, AIBN, UQ

ASSOCIATE INVESTIGATORS



Associate Professor **James Bourne**
ARMI, Monash



Dr **Claire Parish**
Associate Investigator, The Florey



Professor **Robert Capon**
UQ



Dr **Alice Pebay**
Centre for Eye Research
Australia (CERA)



Dr **David Elliot**
MISCL, Monash



Dr **Joy Rathjen**
UoM



Dr **Trent Munro**
AIBN, UQ



Professor **Pankaj Sah**
UQ



Associate Professor **Megan Munsie**
UoM



Dr **Lachlan Thomson**
The Florey



Professor **Robert Nordon**
UNSW

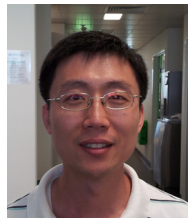


Associate Professor **Ann Turnley**
UoM

POST-DOCTORAL RESEARCHERS



Dr Naisana Asli
VCCRI



Dr Tung-Liang (Tom) Chung
CSIRO



Dr Cheang Ly Be
CSIRO



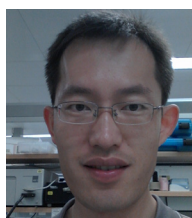
Dr Mauro da Costa
ARMI, Monash



Dr Sebastian Carotta
WEHI



Dr Mark Denham
UoM



Dr Huaying Chen
AIBN, UQ



Dr Mirella Dottori
UoM



Dr Jarny Choi
WEHI



Dr Alison Farley
UoM



Dr Kim Christie
UoM



Dr Jessica Frith
AIBN, UQ



Dr **Milena Furtado**
ARMI, Monash



Dr **Siiri Iismaa**
VCCRI



Dr **James Godwin**
ARMI, Monash



Dr **Andrew Jarratt**
WEHI



Dr **Kylie Greig**
WEHI



Dr **Dhanisha Jhaveri**
QBI, UQ



Dr **Alexandra Harvey**
UoM



Dr **Joly Kwek**
ARMI, Monash



Dr **Adrienne Hilton**
WEHI



Dr **Ming Li**
VCCRI



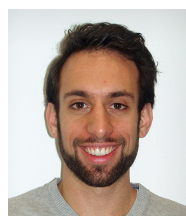
Dr **Claire Hirst**
MISCL, Monash



Dr **Toby Merson**
The Florey



Dr **Jihane Homman-Ludiye**
ARMI, Monash



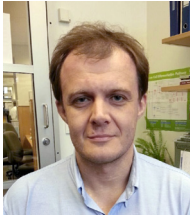
Dr **Jonathan Niclis**
The Florey



Dr Carmel O'Brien
CSIRO



Dr Samir Taoudi
WEHI



Dr Dmitry Ovchinnikov
AIBN, UQ



Dr Drew Titmarsh
AIBN, UQ



Dr Alex Pinto
ARMI, Monash



Dr Ahtesham Ul Haq
VCCRI



Dr Juan Carlos Polanco
CSIRO



Dr Kat Vlahos
CSIRO



Dr Jose Polo
MISCL, Monash



Dr Lina Wang
ARMI, Monash



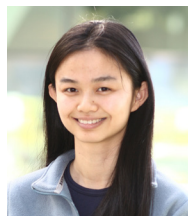
Dr Andrew Prowse
AIBN, UQ



Dr Munira Xaymardan
VCCRI



Dr Minoru Takasato
IMB, UQ

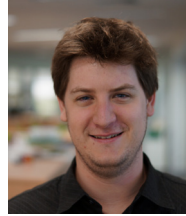


Dr Shen Yi
CSIRO

POSTGRADUATE RESEARCHERS



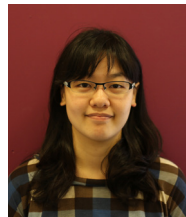
Ms **Stacey Andersen**
AIBN, UQ



Mr **Isaac Englert**
AIBN, UQ



Ms **Lisa Azzola**
MISCL, Monash



Ms **Pei Er**
IMB, UQ



Ms **Penelope Buntine**
AIBN, UQ



Ms **Maely Gauthier**
IMB, UQ



Ms **Kellie Cartledge**
CSIRO



Mr **Ivon Harliwong**
IMB, UQ



Mr **Joseph Chen**
ARMI, Monash



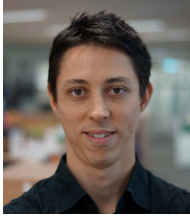
Ms **Celena Heazelwood**
AIBN, UQ



Ms **Claire Cuddy**
UoM



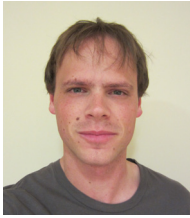
Ms **Shelley Hough**
UoM



Mr Othmar Korn
AIBN, UQ



Mr Rowland Mosbergen
AIBN, UQ



Mr Jack Lamshead
CSIRO



Ms Jessica Schwaber
AIBN, UQ



Ms Jessie Leung
UoM



Mr Nick Seidenman
WEHI



Ms JingJing (Jane) Li
UNSW



Ms Alejandra Vitale
AIBN, UQ



Ms Flavia Marturana
AIBN, UQ

STUDENTS



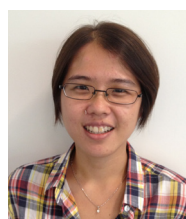
Mr Wala'a Alsanie
PhD Student, Monash



Ms Freya Bruveris
Honours Student,
MISCL, Monash



Ms Deevina Arasartnam
PhD Student, MISCL, Monash



Ms Xaoli Chen
PhD Student, AIBN, UQ



Ms Harleen Basrai
PhD Student, UoM



Ms Kath Colman
Undergraduate student, WEHI



Ms Stephanie Bellmaine
PhD Student, Bio21



Mr James Cornwell
PhD student, VCCRI



Ms Bianca Borchin
PhD Student, ARMI, Monash



Mr Duncan Crombie
PhD Student, Royal Victorian
Eye and Ear Hospital
(RVEEH), CERA, UoM



Ms Marion Brunck
PhD Student, AIBN, UQ



Mr Caleb Dawson
Undergraduate student, WEHI



Mr **Siavash Foroughi**
PhD Student, UoM



Ms **Amy Nicks**
PhD Student, VCCRI



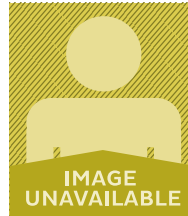
Mr **Alejandro Hidalgo-Gonzalez**
PhD Student, AIBN, UQ



Ms **Kathy Potts**
PhD Student, WEHI



Ms **Jane Kotey**
PhD Student, Monash



Mr **Rhys Skelton**
PhD Student, MISCL, Monash



Mr **Jarmon Lees**
Masters Student, UoM



Mr **Nicholas Tan**
PhD Student, UoM



Ms **Wang Liyuan**
PhD Student, UNSW



Mr **David Wood**
PhD Student, IMB, UQ



Ms **Elizabeth Mason**
PhD Student, AIBN, UQ



Ms **Yao Lulu Xing**
PhD Student, UoM



Ms **Elizabeth Ng**
PhD Student, MISCL, Monash



Ms **Cissy Yu**
PhD student, MISCL, Monash

PLATFORMS

STEM CORE SERVICES



Dr Anna Michalska
StemCore Manager, UoM



Ms Victoria Turner
Manager, StemCore Facility UQ



Dr Vanta Jameson
Flow Cytometry Operator,
UoM

StemCore laboratories is based at the University of Queensland, provides support for pluripotent stem cell culture for our Queensland and NSW-based researchers.

The University of Melbourne has purpose-built core facilities in Flow Cytometry and pluripotent stem cell culture are available for use by interested researchers.

STEMFORMATICS

Stemformatics, accessed at www.stemformatics.org, provides the Australian stem cell community with a collaboration platform that enables the interrogation of stem cell datasets without formal bioinformatics training. It hosts a curated, genome-scale database and a bioinformatics environment to address three questions: what are the molecular signatures of stem cells; which gene networks correlate with desirable stem cell phenotypes; and, transcriptionally, what constitutes cells of high therapeutic value. It also translates data into the right format for researchers wishing to drive more complex statistical approaches.

Searching by Gene NANOG and Dataset Vassena_2011_21775417



Publications

JOURNAL ARTICLES WITH IMPACT FACTOR >10

2012

Pérez-Mancera PA, Rust AG, van der Weyden L, Kristiansen G, Li A, Sarver AL, Silverstein KAT, Grützmann R, Aust D, Rümmele P, Knösel T, Herd C, Stemple DL, Kettleborough R, Brosnan JA, Li A, Morgan R, Knight S, Yu J, Stegeman S, Collier LS, ten Hoeve JJ, de Ridder J, Klein AP, Goggins M, Hruban RH, Chang DK, Biankin AV, **Grimmond SM**, Wessels LFA, Wood SA, Iacobuzio-Donahue CA, Pilarsky C, Largaespada DA, Adams DJ and Tuveson DA (2012) *The deubiquitinase USPX suppresses pancreatic ductal adenocarcinoma*. **Nature** 486:266-270 IF 36.280

Del Monte G and **Harvey RP** (2012) *An endocardial contribution to coronary vessels*. **Cell** 151:932-934 IF 32.4

Polo JM, Anderssen E, Walsh RM, Schwarz BA, Nefzger CM, Lim SM, Borkent M, Apostolou E, Alaei S, Cloutier J, Bar-Nur O, Cheloufi S, Stadtfeld M, Figueroa ME, Robinton D, Natesan S, Melnick A, Zhu J, Ramaswamy S and Hochedlinger K. (2012) *A molecular roadmap of reprogramming somatic cells into iPS cells*. **Cell** 151:1617-32 IF 32.403

Chong JJH, **Xaymardan M**, Chandrakanthan V, **Asli NS**, Li J, Heffernan C, Menon MK, Ahmed I, Scarlett CJ, Rashidianfar A, Biben C, Zoellner H, Colvin EK, Pimanda J, Biankin AV, Zhou B, Pu WT, Prall OWJ, and **Harvey RP** (2011) *Adult cardiac-resident MSC-like stem cells with a proepicardial origin*. **Cell Stem Cell** 2:9(6):527-40 IF 25.94

Nazor KL, Altun G, Lynch C, Tran H, Harness JV, Slavin I, Garitaonandia I, Müller FJ, Wang Y-C, Boscolo FS, Fakunle E, Lee S, Park HS, Martynova M, Ole T, D'Lima DD, Semechkin R, Parast MM, Galat V, **Laslett A L**, Schmidt U, Keirstead HS, Loring J F and Laurent LC (2012). *Recurrent Variations in DNA Methylation in Human Pluripotent Stem Cells and their Differentiated Derivatives*. **Cell Stem Cell** 10:620-634 IF 25.943

Cunningham JJ, Ulbright TM, **Pera MF**, and Looijenga LH. (2012) *Lessons from human teratomas to guide development of safe stem cell therapies*. **Nature Biotechnology** 30(9):849-57 IF 23.268

Castagnaro L, Maruzzelli S, Lenti E, Spinardi L, Sitia G, Harrelson Z, Guidotti LG, Evans S, **Harvey RP**, and Brendolan A (2013) *Nkx2-5/Islet1+ spleen mesenchymal progenitors generate different stromal cell lineages and participate in organ regeneration*. **Immunity** [in press 21.12.12] IF 21.63

Elefanty, AG and Stanley EG (2012), *Efficient generation of adipocytes in a dish*. **Nature Cell Biology** 14(2):126-127 IF 19.488

Koss M, Bolze A, Brendolan A, Saggese M, Capellini TD, Bojilova E, Boisson B, Prall OWJ, **Elliott DA**, Solloway M, Lenti E, Hidaka C, Chang C-P, Mahlaoui N, **Harvey RP**, Casanova J-L and Selleri L (2012) *Congenital Asplenia in Mice and Humans with Mutations in a Pbx/Nkx2-5/p15 Module.e*. **Developmental Cell** 22:913-26 IF 14.03

Deng ZJ, Liang M, Toth, I, **Monteiro, MJ** and Minchin RF (2012) *Molecular interaction of poly(acrylic acid) gold nanoparticles with human fibrinogen*. **ACS Nano** 6(10): 8962-8969 IF 11.421

Howitt J, Lackovic J, Low L-H, Naguib A, Macintyre A, Goh C-P, Callaway JK, Hammond V, Thomas T, Dixon M, Putz U, Silke J, **Bartlett P**, Yang B, Kumar S, Trotman LC and Tan S-S (2012) *Ndfip 1 regulates nuclear Pten import in vivo to promote neuronal survival following cerebral ischemia*. **Journal of Cell Biology** 196(1):29-36 IF 10.264

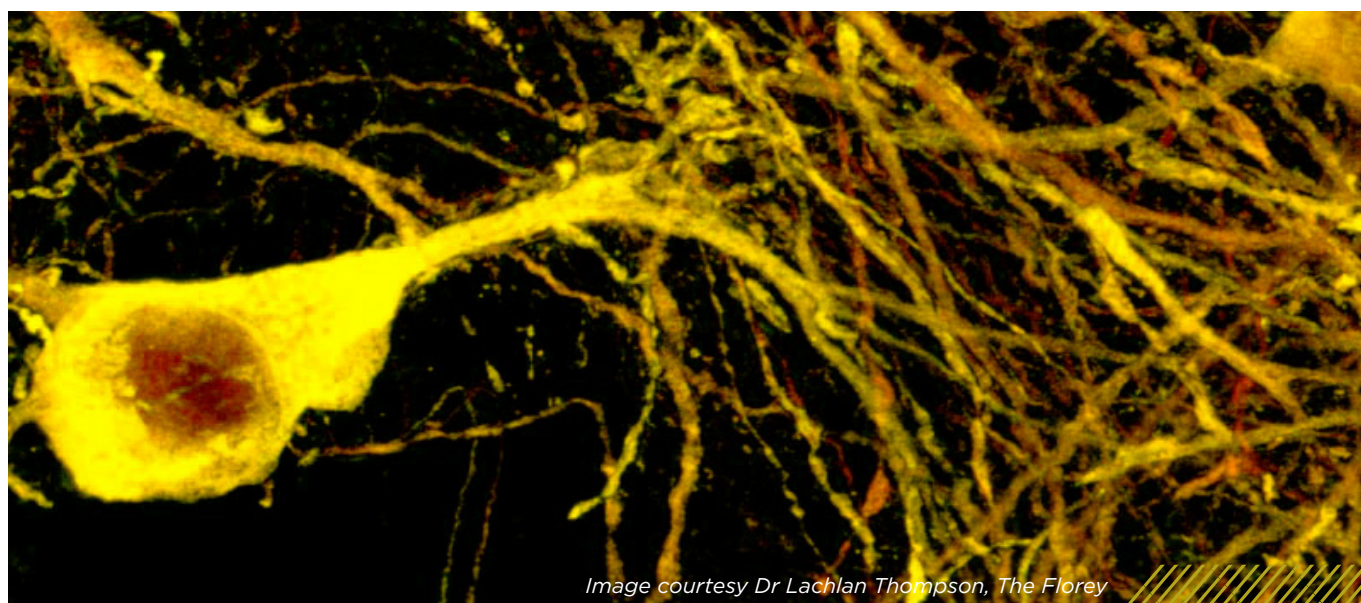


Image courtesy Dr Lachlan Thompson, The Florey

2011

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Rae FK, Suhaimi N, Li J, Nastasi T, Slonimsky E, **Rosenthal N and Little MH** (2012) *Proximal tubule overexpression of a locally acting IGF isoform, Igf-1Ea, increases inflammation after ischemic injury. Growth Hormone and IGF Research* 22:6-16 IF 2.164

Turnley AM (2012) *Editorial note in Cell Migration in the Developing and Adult Nervous System. Neurosignals* 20:131 IF 2.111

Licona-Cassani C, Marcellin E, Quek L-E, Jacob S and **Nielsen LK** (2012) *Reconstruction of the Saccharopolyspora erythraea genome-scale model and its use for enhancing erythromycin production. Antonie van Leeuwenhoek* 102:493-502 IF 2.091

Rae FK, Suhaimi N, Li J, Natasi T, Slinimsky E, **Rosenthal N and Little MH** (2012) *Proximal tubule overexpression of a locally acting IGF isoform, Igf-1Ea, increases inflammation after ischemic injury. Growth Hormone and IGF Research* 22(1):6-16 IF 2.07

Matindoost L, Chan LCL, Qi YM, **Nielsen LK** and Reid S (2012) *Suspension culture titration: A simple method for measuring baculovirus titers. Journal of Virological Methods* 183:201-209 IF 2.011

Wong R, **Pera MF** and **Pébay A** (2012). *Maintenance of human embryonic stem cells by S1P and PDGF. Methods in Molecular Biology; Sphingosine-1-Phosphate -Methods and Protocols.* 874:167-176 IF 1.29

da Silva, MG, Mattos E, Camacho-Pereira J, Domitrovic T, Galina A, Costa MW and Kurtenbach E. (2012) *Cardiac systolic dysfunction in doxorubicin-challenged rats is associated with upregulation of MuRF2 and MuRF3 ligases. Experimental and Clinical Cardiology*, 17 (3) : 101-109 IF 0.58.

O'Neill BP, Purnell MP, **Nielsen LK** and Brumbley SM (2012) *RNAi-mediated abrogation of trehalase expression does not affect trehalase activity in sugarcane. SpringerPlus* 1:74 IF NA

Kameda M, Taylor CJ, Walker TL, Black DM, Abraham WC and **Bartlett, PF** (2012) *Activation of latent precursors in the hippocampus is dependent on long-term potentiation. Translational Psychiatry* 2:72.1-72.9 IF NA

Hasegawa K, Yasuda S, Teo JL, Nguyen C, McMillan M, Hsieh CL, Suemori H, Nakatsuji N, Yamamoto M, Miyabayashi T, Lutzko C, **Pera MF** and Kahn M (2012) *Wnt Signaling Orchestrates by Small Molecule DYRK Inhibitor Provides Long-Term Xeno-Free Human Pluripotent Cell Expansion. Stem Cells Translational Medicine* 1:18-28 IF NA

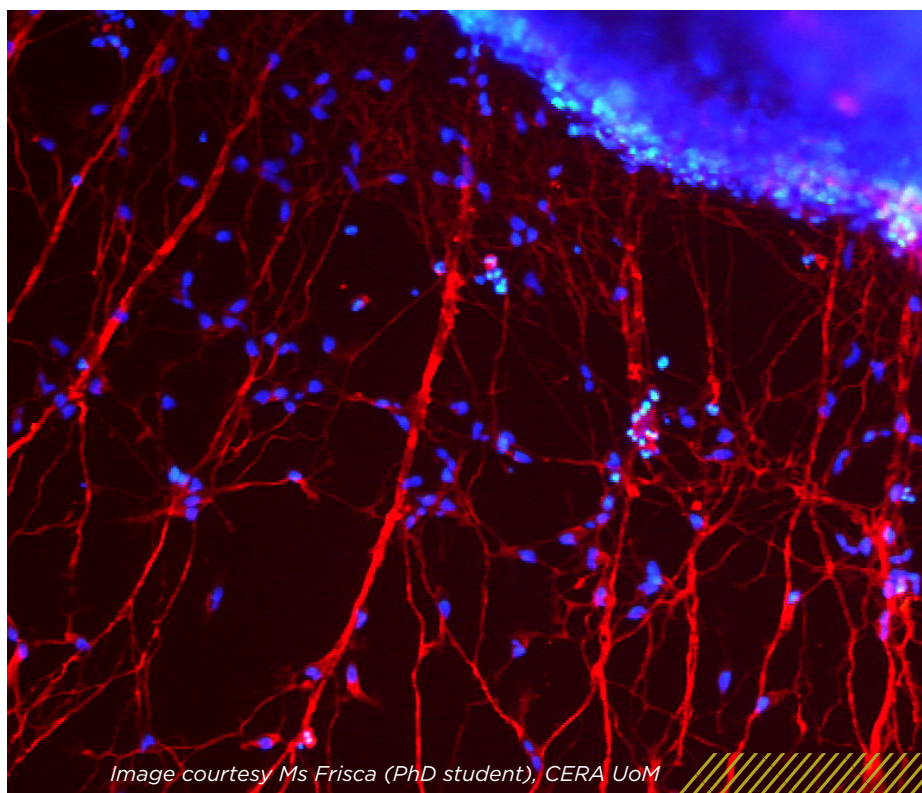


Image courtesy Ms Frisca (PhD student), CERA UoM

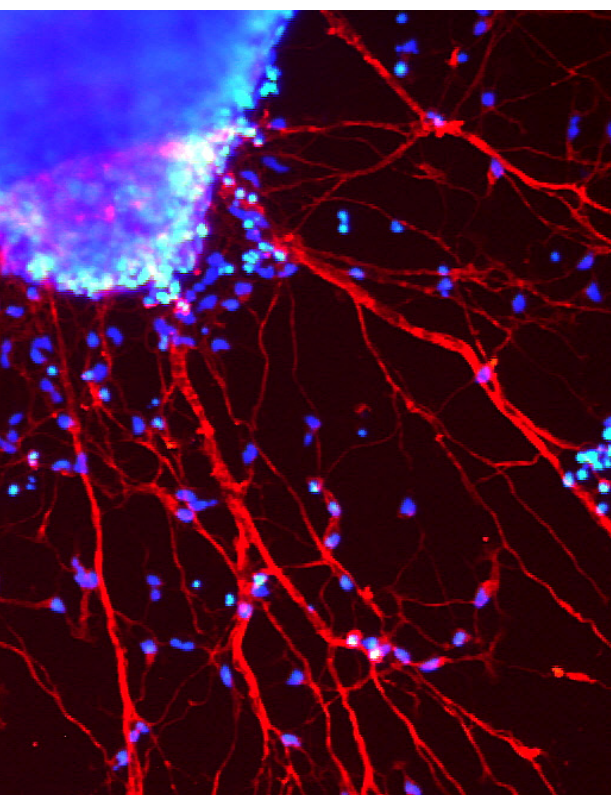
2011

Timmins NE, Athanasas S, Günther M, Buntine P and Nielsen LK (2011) *Ultra high yield manufacture of red blood cells from hematopoietic stem cells. Tissue Engineering, Part C* 17:1131-7 IF 4.636

Turbic A, Leong SY and Turnley AM (2011) *Chemokines and inflammatory mediators interact to regulate adult murine neural precursor cell proliferation, survival and differentiation. PLoS One* 10:137 IF 4.411

Hidalgo-Gonzales A (2011) *Primitive Cardiac Cells from Human Embryonic Stem Cells. Stem Cells and Development* IF 4.4

Thiagarajan RD, Cloonan N, Gardiner BB, Mercer TR, Kolle G, Nourbaksh E, Wani S, Tang D, Krishnan K, Georgas KM, Rumballe BA, Chiu HS, Steen JA, Mattick JS, Little MH and Grimmond SM (2011) *Refining transcriptional programs in kidney development by integration of deep RNA-sequencing and array-based spatial profiling. BMC Genomics* 12:441 IF 4.21



Rumballe BA, Georgas KM, Combes A, Ju A, Gilbert T and Little MH. (2011) *Nephron formation adopts a novel spatial topology at cessation of nephrogenesis. Developmental Biology* 360(1):110-122 IF 4.09

Hidalgo-Gonzales A (2011) *Optimization of Flowrate for Expansion of Human Embryonic Stem Cells in Perfusion Microbioreactors. Biotechnology and Bioengineering* IF 3.9

Maturana F, Timmins NE and Nielsen LK (2011) *Short term exposure of umbilical cord blood CD34+ cells to GM-CSF early in culture improves ex vivo expansion of neutrophils. Cytotherapy* 13:366-77. IF 3.63.

Leong SY and Turnley AM (2011). *Regulation of Adult Neural Precursor Cell Migration. Neurochemistry International* 59:382-93 IF 3.451

Hendry C, Rumballe BA, Moritz K and Little MH (2011) *Defining and redefining the nephron progenitor population. Pediatric Nephrology* 26(9):1395-406 IF 2.18

Wada N, Wang B, Li N-H, Laslett AL, Gronthos S, and Bartold PM (2011) *Establishment of induced pluripotent stem cell lines derived from human gingival fibroblasts and periodontal ligament stem cells. Journal of Periodontal Research* 46:438-447 IF 2.128

JHansson J, Rafiee MR, Reiland S, Polo JM, Gehring J, Okawa S, Huber W, Hochedlinger K and Krijgsveld J (2012) *Highly coordinated proteome dynamics during reprogramming of somatic cells to pluripotency. Cell Reports* 2(6):1579-92 IF NA

Little MH. *Renal organogenesis: what can it tell us about renal repair and regeneration* (2011) *Organogenesis* (Organogenesis Forum Lecture) 1:7(4) IF NA

Chen YS, Pelekanos RA, Ellis RL, Horne R, Wolvetang EJ and Fisk NM. (2011) *Small Molecule Mesengenic Induction of Human Induced Pluripotent Stem Cells to Generate Mesenchymal Stem/ Stromal Cells. Stem Cells Translational Medicine* 1(2):83-95 IF NA

REFEREED CONFERENCE PROCEEDINGS

2012

Schroder, K, Irvine, KM, Taylor, MS, Semple, CA, Akalin, A Cao, K, Le Labzin, L, Bokil, NJ, Faulkner, GJ, Baillie, JK, Gongora, M, Daub, CO, McLachlan, J, Goldman, N, **Grimmond, SM**, Carninci, P, Suzuki, H, Hayashizaki, Y, Lenhard, B, Hume, DA, and Sweet, MJ (2012). *Expression Divergence of Innate Immune Genes is driven by Highly Constrained Promoters Hypersensitive to Multiple Regulatory Inputs. Proceedings of the National Academy of Science USA.* IF 9.68

Thomson, I.H, Denham M, Parish C L, Wang L, Guo G, Castro ML, Vale M, Wolstein O, Fatkin D, **Dottoti, M.** *Neurons derived from human embryonic stem cells extend long-distance and through growth along host white matter tracts after intra-cerebral transplant.* In Beulah Leitch, Jonathon Shemmel (Eds.), *Proceedings of the 30th International Australasian Winter Conference on Brain Research*, Queenstown, New Zealand, August

Bartlett P, *Distinct neurogenic stem cell populations in the hippocampus: how are they regulated and what are their functions.* In Beulah Leitch, Jonathon Shemmel (Eds.), *Proceedings of the 30th International Australasian Winter Conference on Brain Research*, Queenstown, New Zealand, August

Connor B, Maucksch C, Firmin E, Butler-Munro C, Mon J M, **Dottoti, M.** *Non-viral generation of neural precursor like cells from adult human stem cells.* In Beulah Leitch, Jonathon Shemmel (Eds.), *Proceedings of the 30th International Australasian Winter Conference on Brain Research*, Queenstown, New Zealand, August

Lim, Shiang Y.; Hsiao, Sarah; Nguyen, Phong D. **Pebay A;** et al. *Ischemic Preconditioning For Cardiac Tissue Engineering With Stem Cells*, 33rd Annual Scientific Meeting of the High-Blood-Pressure-Research-Council-of-Australia (HBPRCA) Perth, in Hypertension 60 :2 P: 499-500 August

Skwarczynski, M., Fuaad, A. A. H. A., Zaman, M., Jia, Z., Kowapradit, J., Rustanti, L. et al. (2012). *Nanoparticles-based peptide subunit vaccines against group A Streptococcus.* In Journal of Peptide Science. **32nd European Peptide Symposium**, Athens, Greece, (S53-S53). 2-7 September 2012.

Dietmair, S, Timmins, N E., Chrysanthopoulos, P, Gray, P P., Krömer, J O. & **Nielsen, L K.** (2012) *Metabolomic analysis of CHO cultures with different growth characteristics – development of a metabolite extraction protocol for suspension adapted mammalian cells.* In Nigel Jenkins, Niall Barron, Paula Alves (Eds.), *Proceedings of the 21st Annual Meeting of the European Society for Animal Cell Technology (ESACT)*, Dublin, Ireland, June 7-10, 2009 (pp. 37-41). Dordrecht, Netherlands: Springer.

Timmins, N E. & **N, Ls K.** (2012) *Large scale ex vivo manufacture of blood cells.* In Nigel Jenkins, Niall Barron, Paula Alves (Eds.), *Proceedings of the 21st Annual Meeting of the European Society for Animal Cell Technology (ESACT)*, Dublin, Ireland, June 7-10, 2009 (pp. 557-571). Dordrecht, Netherlands: Springer.

2011

Hawksworth O, Coulthard L, **Wolvetang E**, Taylor SM, Woodruff TM. (2011). *Innate Immune Complement Expression in Human Embryonic, and Induced Pluripotent Stem Cells. Proceedings of the 2011 Cell and Developmental Biology Meeting*

Wilkinson LJ, Chiu H, Ju A, Rumballe B, Georgas K, Moritz KM, **Little MH.** (2011) *Hypoxic conditions during kidney development disrupt nephron formation. Nephrology*, September 16:52.

Awards and Scholarships

COMPETITIVE POSTDOCTORAL FELLOWSHIP

2012

Kylie Greig

NHMRC CJ Martin Overseas Biomedical Fellowship

Jose Polo

awarded a NHMRC CDF for the years 2012-2015

Dr. Alexander Pinto

Heart Foundation Grant-in-Aid

2011

Henrik Reinhard

Danish Heart Foundation Award; Prince Christian Fellowship (VCCRI) 2011

SHORT TERM AWARD/RECOGNITIONS

2012

Kim Christie

Early Career Research Grant from University of Melbourne

Doug Hilton

2012 Lemberg Medal, Australian Society of Biochemistry and Molecular Biology and the 2012 Eureka Prize Outstanding Mentor to Young Researchers

Jose Polo

Monash Strategic Grant (ECD037) for the year 2012

Naisana Asli

Travel Award: from Administrative Director, International Society for Stem Cell Research (ISSCR), to attend 10th Annual ISSCR Meeting Yokohama, Japan

Minni Anko

Harold Mitchell post-doctoral travel award

Juan Carlos Polanco

2012 CSIRO Biomedical Materials and Devices Theme Day. Award for Best three minute postdoctoral presentation. Melbourne, Clayton, Australia, 23 February 2012

2011

Naisana S. Asli, Munira Xaymardan, Vashedaran Chandrakanthan, Tram Doan, Richard P. Harvey

Postdoctoral Poster Award, Australasian Stem Cell Research meeting: 23-25 Oct 2011, Leura, NSW, Australia

APPOINTMENTS

2012

Carmel O'Brien (CSIRO)

Adjunct Senior Lecturer appointment, Department Anatomy & Developmental Biology, Monash University.

2011

Dr Munira Xaymardan

Dr Xaymardan accepted a Lecturer with research position in the Faculty of Medicine at the University of Sydney. She will continue to work with SCA part-time as a postdoctoral fellow/consultant.

Dr Nicholas Timms

Dr Timms left Australia to take up the position of Manager, Cell Manufacturing at CCRM, Toronto.

Conference Participation

INTERNATIONAL CONFERENCES: INVITED AND KEYNOTE SPEAKERS

2012

Dr Naisana Asli

Signaling Networks regulating Adult Cardiac Stem Cells. International Society for Stem Cell Research 10th Annual Meeting, Japan.

Perry Bartlett

Activation of different neurogenic precursor populations in the hippocampus, 191 Biennial Meeting of the International Society for Developmental Neuroscience (ISDN 2012), Mumbai India.

Distinct neurogenic stem cell populations in the hippocampus: how are they regulated and what are their functions? Australasian Winter Conference on Brain Research (AWCBR), Queenstown, New Zealand.

Activation of different neurogenic precursor populations in the hippocampus: Potential for dementia and depression therapy. 2nd Systems Neuroscience Symposium, Munich Center for Neurosciences.(MCN), Munich, Germany.

Mauro da Costa

A novel DCM-associated NKX2-5 mutation leads to increased protein stability and proteasome dysfunction. In Keystone Symposia: Cardiovascular Development and Regeneration, Taos, NM, USA.

Mark Denham

Generating floor plate progenitor cells from human embryonic stem cells 11th Biennial Meeting of the Asian Pacific Society for Neurochemistry and 55th Annual Meeting of the Japanese Society for Neurochemistry, Kobe, Japan.

Mirella Dottori

Re-Creating the Nervous System in a Dish with Human Pluripotent Stem Cells The 11th Seminar for Institute for Integrated Cell-Material Sciences, Kyoto, Japan.

Andrew Elefanty

Using embryonic stem cells to model human development International Society of Differentiation Conference. Stem Cells, Development and Regulation. Amsterdam.

Dissecting human hematopoietic development using embryonic stem cells ISEH 41st Annual Meeting. Amsterdam.

Hematopoietic differentiation of human embryonic stem cells IDRC 2012. 9th International Donor Registry Conference. Sydney.

Richard Harvey

Focusing out on mesenchymal stem/stromal cells, Hong Kong Society for Developmental Biology Symposium "From Embryology to Disease Mechanisms" Hong Kong.

Definition and Embryonic Origins of MSC-like Stem Cells in the Adult Mammalian Heart. Royan Institute 8th Congress on Stem Cell Biology and Technology, Tehran, Iran.

Regulation of Quiescence and Multipotency in MSC-like Stem Cells of the Adult Mammalian Heart. Royan Institute 8th Congress on Stem Cell Biology and Technology, Tehran, Iran.

Defining the Cardiac Gene Regulatory Network through Large Scale Transcription Factor Target Site Profiling using DamID. Keystone Symposium Cardiac Development and Regeneration Taos, New Mexico, USA

Doug Hilton

The Keystone Symposia, Olympic Valley CA.

Andrew Laslett

Harnessing pluripotency: novel tools for human stem cell biology The CSIRO - Chinese Academy of Sciences Workshop in Health and Biotechnology, Translational Research in Health and Nutrition Hangzhou, China.

Development of novel reagents for human pluripotent stem cells and reprogramming: Efficiency and safety considerations 3rd International Nanomedicine Conference Crowne Plaza Coogee Beach.

Harnessing pluripotency: novel tools for human stem cell biology. The 111th iCeMS Seminar, Institute for Integrated Cell-Material Sciences (iCeMS) Kyoto, Japan.

Professor Trevor Kilpatrick

Targeting the Oligodendrocyte Lineage in Demyelinating Disease. Keystone Symposia on Molecular and Cellular Biology - Multiple Sclerosis Conference, Big Sky, Montana, USA.

Michael Moneiro

Polymers in biomedical applications 9th Annual China-Australia Symposium, Canberra.

Elizabeth Ng

Dissecting human hematopoietic development using embryonic stem cells. International Society of Differentiation Conference. Stem Cells, Development and Regulation. Amsterdam.

Lars Nielsen

Genome scale metabolic and regulatory modeling for synthetic biology Cold Spring Harbor Synthetic Biology, Suzhou, China.

Genome scale regulatory network modelling COBRA 2012 Helsingor, Denmark.

Using mammalian systems biology to engineer cell lines and cell culture processes: Are we there yet? SAFC, St Louis.

Multi-tissue genome scale modeling: toward understanding plant metabolism at organismal level Major Symposium on Metabolism and metabolic networks, ASPB Austin Texas.

Opening Pandora's box: looking under the hood in actinomycetes. RWTH Aachen. Ex vivo production of mature red and white blood cells for research and clinical use RWTH Aachen.

Plant Metabolic Engineering. RWTH Aachen

Clare Parish

Lessons learnt from fetal transplantation for the use of pluripotent stem cells The 111th iCeMS Seminar, Institute for Integrated Cell-Material Sciences (iCeMS) Kyoto, Japan.

Alice Pebay

Stem cells and neurodegeneration. 2nd Austria ARVO satellite meeting Optic Nerve, Obergurgl, Austria.

Cardiac tissue engineering advanced by growing cardiac constructs from human induced pluripotent stem cells and ischemic preconditioning. American Heart Association

Cardiac differentiation of FRDA iPS cells FARA Cell & Gene Therapy Meeting, Philadelphia, USA.

Anti-lysophosphatidic acid antibodies improve outcomes of neurotrauma. World Congress in Neuro Rehabilitation, Melbourne.

Martin Pera

Transit through the states of Pluripotency, UNIST 2nd International Symposium on Reprogramming and Stem Cells. South Korea.

Transit through the states of Pluripotency, 1st International Conference on BioNano Innovation.

Pluripotent stem cell states and fates 9th Annual China-Australia Symposium, Canberra.

Nadia Rosenthal

Immune Modulation of Regeneration Keystone Cardiovascular Symposium, Taos

Immune Modulation of Vertebrate Regeneration 9th Annual China-Australia Symposium, Canberra.

Cardiac biology: From Development to Regenerative Medicine, (with Bob Graham) EMBO/EMBL Symposium Heidelberg, Germany.

Immune Regulation of Regeneration EMBO Regeneration meeting, Oxford

Immune Modulation of Regeneration International Society for Differentiation Symposium, Amsterdam;

Stem Cells and Regeneration Everett Symposium, Charleston;

Immune modulation of Regeneration. Australasian Wound & Tissue Repair Society Meeting, Sydney;

Immune Modulation of Regeneration.
World Biomaterials Congress, Chengdu

Infrafrontier: European Mouse Resources,
Germany; **Cre Driver Initiative**

Christine Wells *Systems Approaches to
stem cells biology* **9th Annual China-
Australia Symposium**, Canberra

2011

Richard Harvey *Endogenous cardiac
MSC-like stem cells: characterisation and
prospects for participation in heart repair*
**Australia-France Joint Symposium on
Health Sciences and Biomedicine**, National
Academy of Sciences, Canberra, Australia.

Doug Hilton *Erg signalling and self-renewal
Myeloid Development Workshop*, **53rd
American Society of Hematology Meeting**,
San Diego, USA.

Melissa Little **American Society for
Nephrology**, Philadelphia, USA.

COMBIO 2011, Cairns, Australia.

Megan Munsie and Schaft J (2011) 2010
Legislation Review: *What it means for
stem cell research in Australia* **Australasian
Society for Stem Cell Research Conference**
(poster)

Martin Pera *A Close Look at Human
Pluripotent Stem Cells*, **Indo-Australia
Biotechnology Conference on Stem Cell
Biology** Bangalore, India..

Nadia Rosenthal *Macrophages and
muscle regeneration* **Gordon Conference
on Myogenesis**, Waterville Valley, New
Hampshire, USA, .

IGF-1 Signaling, Myoage Workshop, Lecce,
Italy.

*Immune modulation of mammalian
regeneration* **Chilean Society for Cell
Biology**, Puerto Varas

Stem cells and personalized medicine
**Vatican International Conference on Adult
Stem Cells**, Rome

*Immune modulation of mammalian
regeneration* **Merck Endocrinology and
Diabetes Forum**.

EMBL Australia Partnership **Australian
International Collaborative Workshop**,
Florence.

*Immune modulation of mammalian
regeneration* **Stem Cell Society Singapore
Symposium**.

Ernst Wolvetang *Vitamin C causes genome
wide epigenetic changes in human
pluripotent cells* **EuroEpiStem: European
Epigenomics & Stem Cells-2011 Meeting**,
University of Paris Diderot, France.

*Novel insights into epigenetic deregulation
of early brain development in Down
syndrome using transgene-free human
induced pluripotent stem cells* **NUHS UQ-
SICOG Reproductive Biology Programme**,
Singapore.

INTERNATIONAL CONFERENCES: OTHER PRESENTATIONS

2012

Milena Furtado

Furtado, M., Biben, C., Solloway, M., Robertson, E., Shiratori, H., Hamada, H., Rosenthal, N. and Harvey, R. **Conditional deletion of *Pitx2* reveals a role for the left-right pathway in cardiac cushion morphogenesis** Keystone Symposium on Cardiovascular development and Regeneration United States.

Doug Hilton

The Institute of Cancer Research (ICR), London.

Megan Munsie

Marketing of hope: the dynamics of expectation in relation to stem cell treatments. The European Association for the Study of Science and Technology Copenhagen Denmark.

Carmel O'Brien

Generation and Validation of monoclonal antibodies to 17 newly identified cell surface proteins that allow enrichment of human pluripotent stem cells. C O'Brien et al. International Society for Stem Cell Research (ISSCR): 10th annual meeting, Yokohama, Japan.

Detection and separation of undifferentiated human pluripotent stem cells from heterogeneous cell populations using lectins and novel monoclonal antibodies. Y-C Wang et al. International Society for Stem Cell Research (ISSCR): 10th annual meeting, Yokohama, Japan.

Juan Carlos Polanco

Polanco, J.C., Ho M.S.H., Wang, B., Zhou, B., Cardozo, D., Heazelwood, C., Wolvetang, E., Kolle, G., Grimmond, S.M., O'Brien, C., and Laslett, A.L. **Instability of human induced pluripotent stem cells revealed by a robust assay for pluripotency** The Gordon Research Conference on Reprogramming Cell Fate. Galveston, USA.

Andrew Prowse

Prowse, A., Gunasingh G, Munro TP, Ovchinnikov D, Wolvetang EW, Gray PP, **Human embryonic stem cells and therapy, ICEAN 2012**, Mecure hotel, Brisbane, Queensland.

Andrew Prowse

Prowse, A., Gunasingh G, Gray PP, Munro TP **Control of human embryonic stem cell growth and differentiation via automation and parallel mini-bioreactors, ECI, Scale up and manufacturing of cell-based therapies**, Hyatt Regency, San Diego, USA.

Nicholas Tan

Tan, N., David Gardner, Peter D. Rathjen and Joy Rathjen. Stem Cells and Metabolism, **Amino Acids and the regulation of ES cell differentiation.**

Nicholas Tan

Tan, N., David Gardner, Peter D. Rathjen and Joy Rathjen: **Amino acid transporters in ES cells and the embryo; dynamic expression may underlie regulatory roles in ES cell differentiation.** Stem Cells Society Singapore Symposium (SCSS) joint session with International Society for Cell Therapy (ISCT) Singapore

Munira Xaymardan

Naisana S. Asli, Xaymardan, M., Vashedaran Chandrakanthan, Tram Doan, Richard P. Harvey; **Signaling Networks Regulating Adult Cardiac Stem Cells; International Society for Stem Cell Research annual meeting**, Yokohama, Japan.

2011

Tobias D. Merson

Merson, T.D., Sze Woei Ng, Pikying Soo and Trevor J. Kilpatrick. **SEZ-derived neural progenitors contribute to remyelination of the corpus callosum in the cuprizone model of CNS demyelination.** 8th World Congress of the International Brain Research Organisation, Florence, Italy.

Martin Pera

The Metastable State of Pluripotency, Stem Cell and Regenerative Medicine Mini Symposium, National Science Council, Taiwan.

Safety Issues in Stem Cell Therapies: Immunogenicity, Tumorigenicity and Genetic Stability (moderator) 2011 World Stem Cell Summit, Pasadena, USA.

Human Pluripotent Stem Cells - back to the future, Rediscovering Pluripotency: From Teratocarcinomas to Embryonic Stem Cells Cardiff, UK.

Human Pluripotent Stem Cells, The Australasian Society for Stem Cell Research, 4th Annual Meeting, NSW, Australia.

Embryonic Stem Cells and Induced Pluripotency, International Society for Cellular Therapy, Sydney, Australia.

Pamela Jaramillo-Ferrada, **Ernst Wolvetang**, Nick Fisk, **Justin Cooper-White**
Cartilage tissue engineering using mesenchymal stromal cells derived from the fetal membranes of human term placenta ASBTE, Queenstown New Zealand.

Harvey, R. *Linking development to regeneration in the developing heart.*

Basic Science Lecturer, **Cardiac Society of Australia and New Zealand CSANZ annual meeting**, Perth, Western Australia.

Hilton DJ. *Negative regulation of cytokine signal transduction.* (Honorary Lecturer, ISICR Milstein Award). **9th Joint meeting of ICS/ISICR**, Florence, Italy.

INTERNATIONAL CONFERENCES ATTENDED (NOT PRESENTING)

2012

Maely Gauthier, Nicole Cloonan
Seoul Project Grandiose Workshop South Korea.

Mark Denham, Mirella Dottori, Andrew Elefanty, Richard Harvey, Andrew Laslett, Dr Munira Xaymardan
International Society for Stem Cell Research 10th Annual Meeting, Yokohama, Japan

Andrew Elefanty, Elizabeth Ng
ISEH 41st Annual Meeting. Amsterdam.

Andrew Laslett
Singapore Stem Cell Society meeting, Singapore

Mirella Dottori
Friedreich Ataxia Research Association, Cell and Gene Therapy Meeting, Philadelphia, USA

Minni Anko
Cell Symposia: Functional RNAs, Sitges, Spain

Carmel O'Brien
The 111th iCeMS Seminar, Institute for Integrated Cell-Material Sciences (iCeMS) Kyoto, Japan

2011

Hilton DJ.
9th Joint meeting of International Cytokine Society/ International Society of Interferon and Cytokine Research, Florence, Italy.

Ludwig Institute of Cancer Research Translational Oncology Conference, Melbourne, Australia.

53rd American Society of Hematology Meeting, San Diego, USA.

Ann Turnley
Society for Neuroscience Annual Conference, Washington DC, USA

PARTICIPATION IN COMMUNITY OR PATIENT ADVOCACY MEETINGS

2012

Naisana Asli

Cell Cycle Regulation Dental Faculty
University of Sydney

Mechanisms of Cancer Metastasis Dental
Faculty University of Sydney Australia.

Mirella Dottori

Multiple Sclerosis Brisbane Angels,
Brisbane, Australia.

Andrew Elefanty

**The Royal Children's Hospital Campus
Research and Education Week.** Melbourne.
**The role of pluripotent stem cells in
development, disease and regenerative
medicine.**

**Eastern Gynaecological Obstetric Society
Partners Dinner. Melbourne Stem cells:
progress towards medical therapies.**

Doug Hilton

The University of Melbourne's mentoring
event **Challenges and Opportunities for
Women Research Leaders**

Alfred Health Research Week

**Murdoch Children's Research Institute
Early and Mid-Career Researchers
Symposium.**

Trevor Kilpatrick

**University of Melbourne Undergraduates
in Biotechnology forum, The challenges
in translating stem cell science and
regenerative medicine into therapies**

Presentation on 'MS and the challenges of
managing patient expectation in relation to
stem cell science

Andrew Laslett

Stem Cells and Bioinformatics. **Genome
Mining: How understanding gene
expression aids stem cell research & so
much more** A Quantum Victoria and Stem
Cells Australia event aimed at Year 10 and
VCE students. Live online and Bundoora,
Australia.

Megan Munsie

Developed and co-hosted screening of
Stem Cells Revolutions with Museum of
Contemporary Art, EuroSyStem, Veolia and
SDI. Sydney.

Developed and co-hosted public forum
Re-seeing the future with AusBiotech and
CERA, Melbourne.

Hosted University of Melbourne
**Undergraduates in Biotechnology forum
The challenges in translating stem cell
science and regenerative medicine into
therapies** Melbourne.

Developed, co-hosted and presented
Genome Mining workshop with Quantum
Victoria during **National Science Week,**
Melbourne.

Presented at MND NSW **Meet the Experts
workshop.** Sydney.

Co-hosted and presented at **Journeys with
Motor Neuron Disease** event in partnership
with MND Australia and University of
Sydney's Centre for VELiM. Sydney.

Co-hosted and presented at a series of
workshops around Australia with **Spinal
Cord Injury Network workshops Stem
cells: hype, hope and progress** Adelaide
Australia, Auckland New Zealand.

ABC Radio National's **Big Ideas** Science
on Radio National 2011/12 summer season
Stem cell tourism: how far would you go?

Elizabeth Ng

**Eastern Gynaecological Obstetric Society
Partners Dinner, Melbourne. Stem cells:
progress towards medical therapies.**

Carmel O'Brien

Lux Luceat senior scholars' dinner
Beaconnhills College, Berwick. **Researching
Biomedical Solutions**

CSIRO Scientist in Schools partnership
with Beaconnhills Secondary College and St.
Margarets Girls Grammar School, Berwick.
Stem Cells: Working in Stem Cell Research.

Alice Pébay

AusBiotech 2012 Conference Public forum: *Re-seeing the future - how technology may restore vision loss*. November 2012.

Societal Implications of Enabling Technologies STEP (Science & Technology Engagement Pathways) framework, the National Enabling Technologies Strategy (NETS) - Public Awareness and Community Engagement program within the Department of Industry, Innovation, Science, Research & Tertiary Education (DIISRTE). Expert panel.

Martin Pera

Melbourne Neuroscience Institute Public Seminar *Have you heard about stem cell research and regenerative medicine but want to know more?*

University of Melbourne **Undergraduates in Biotechnology forum** *The challenges in translating stem cell science and regenerative medicine into therapies*

Drew Titmarsh

Mad Scientist Tea Party at Bioscience: Other Nature, The Edge, Queensland State Library's Digital Culture Centre Brisbane

Lachlan Thompson

MND Victoria Meet the Experts Melbourne.

Christine Wells

Stem Cells and Bioinformatics. **Genome Mining: How understanding gene expression aids stem cell research & so much more. A Quantum Victoria and Stem Cells Australia event** aimed at Year 10 and VCE students. Live online and Bundoora, Australia.

Ann Turnley

Melbourne Neuroscience Institute Public Seminar *Neuroscience and Behavioural Sciences* Domain.

M Xaymardian

University of Sydney Dentistry **Doctor of Medical dentistry program** *How to study cardiac stem cells*, University of Sydney.

2011**Andrew Elefanty**

Presented at **Spinal Cord Injury Network workshop - Stem cells: hype, hope and progress**. Melbourne.

David Elliott

Presented at **Meet the Stem Cell Scientist half-day workshop** for high school students.

Megan Munsie

Co-hosted and presented at a series of workshops around Australia with **Spinal Cord Injury Network workshops** *Stem cells: hype, hope and progress* Melbourne, Brisbane and Sydney.

Appeared in Channel 31's award winning **No Limits** program discussing the risks of using unproven stem cell treatments.

Member of expert panel at **Royal Institute of Australia (RiAus) public event** *Stem cell tourism: how far would you go?*

Hosted and presented **Meet the Stem Cell Scientists half-day workshop** for high school students.

Invited to present at five **Victorian Rotary and Probus** clubs.

Developed and co-hosted series of workshops with **NSW Stem Cell Network** on *stem cell science to GPs and physicians* across Australia.

Martin Pera

University of Melbourne Dean of Medicine, Dentistry & Health Sciences Lecture Series *Human Pluripotent Stem Cells: A Progress Report* Melbourne.

Media Coverage

PRESS RELEASES

2012

(SCA) *Re-seeing the future: How technology may restore vision loss.* <http://www.stemcellsaustralia.edu.au/News---Events/Press-Releases/Press-Release-Re-seeing-the-future.aspx> **22 October 2012**

(SCA) *Busting myths about stem cells and the genome during science week.* <http://www.stemcellsaustralia.edu.au/News---Events/Press-Releases/Press-Release---Busting-myths-about-stem-cells-and-the-geno.aspx> **15 August 2012**

(SCA) *Stem cell research aids understanding of cancer.* <http://www.stemcellsaustralia.edu.au/News---Events/Press-Releases/Press-Release---Stem-cell-research-aids-understanding-of-ca.aspx> **17 July 2012**

(SCA) *Scientific Luminaries join Stem Cells Australia's Advisory Committee* <http://www.stemcellsaustralia.edu.au/News---Events/Press-Releases/Press-Release---Scientific-luminaries-join-the-Stem-Cells-A.aspx> **9 July 2012**

2011

(SCA) *2010 Legislation Review.* <http://www.stemcellsaustralia.edu.au/News---Events/Press-Releases/Press-Release-2010-Legislation-Review.aspx> **7 July 2011**

(SCA) *Official Launch Stem Cells Australia.* <http://www.stemcellsaustralia.edu.au/News---Events/Press-Releases/Press-Release---Official-Launch-Stem-Cells-Australia.aspx> **10 November 2011**

(SCA) *Australian contribution to international study to address safety.* <http://www.stemcellsaustralia.edu.au/News---Events/Press-Releases/Press-Release---Australian-contribution-to-international-st.aspx> **28 November 2011**

(Monash) *Monash Researchers Lead New Way to Make Heart Cells.* <http://www.stemcellsaustralia.edu.au/News---Events/News/Monash-Researchers-Lead-New-Way-to-Make-Heart-Cells.aspx> **24 October 2011**

(VCCRI) *New discovery of adult stem cells gives fresh possibilities for heart regeneration.* <http://www.stemcellsaustralia.edu.au/News---Events/News/New-discovery-of-adult-stem-cells-gives-fresh-possibilities.aspx> **2 December 2011**

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Unproven stem cell treatments pose risks. Herald Sun and The Australian, **26 November 2012.**

Stem Cells and the Travails of Hope. Monash Magazine, **1 October 2012.**

Lowly fat molecule offers hope in spinal cord injuries. The Age, **29 August 2012.**

Fears over 'stem cell tourism'. Sydney Morning Herald and Brisbane Times, **9 August 2012.**

MS, Parkinson's 'supplements' concern. Perth Now, **6 August 2012.**

Stem cell, cancer link. Maitland Mercury, **20 July 2012.**

Stem cell research aids understanding of cancer. Science Daily, **19 July 2012.**

Stem cell discovery important for cancer. Herald Sun, **18 July 2012.**

Stem cell discovery important for cancer. The Australian, **17 July 2012.**

Stem cell discovery important for cancer. NINEMSN, **17 July 2012.**

Stem cell tourism. Channel Ten - THE PROJECT, **17 July 2012.**

Stem cell tourism. ABC Radio National - Background Briefing, **10 June 2012.**

Stem cells: hope, hype and progress. NZ HERALD, **8 July 2012.**

Debate over stem cell treatment. TVNZ - Close Up, **5 April 2012.**

Lab-made organs could offer a solution to donor storage. The Conversation, **9 March 2012.**

Destination Hope. Sydney Morning Herald and The Sunday Age - GoodWeekend Magazine, **5 March 2012.**

Stem cells reverse heart attack damage. COSMOS, **16 February 2012.**

She sells stem cells. Women's Health, **1 February 2012.**

Top Australian and Indian scientists to collaborate. The Economic Times, **26 June 2012.**

Stem cell treatments reverses blindness. The Australian, **25 January 2012.**

First stem cell treatment in humans helps recover sight. Sydney Morning Herald, **25 January 2012.**

Stem cells used to treat macular degeneration. ABC News PM, **24 January 2012.**

ABC Radio National's Big Ideas - **Stem cell tourism: how far would you go?** Science on Radio National 2011/12 Summer Season, **1 Jan 2012.**

2011

Given time, stem cells may mutate. Futurity, **13 December 2011.**

New discovery of adult stem cells. Radio National Health Report, **12 December 2011.**

Heart stem cells discovered that can make bone and muscle. BioNEWS UK, **5 December 2011.**

Stem cell hope for damaged hearts. Adelaide Now, **2 December 2011.**

New stem cells could fix broken hearts. Nine News, **2 December 2011.**

Australian study on stem cell tourism to begin in 2012. Tourism And Aviation, **2 December 2011.**

New stem cells could fix broken hearts. Sydney Morning Herald, **1 December 2011.**

Stem cells traced to heart. The Scientist, **1 December 2011.**

Safety issues in stem cell therapy to be addressed by international study. Medical News Today, **29 November 2011.**

Stem cells vulnerable to cancer. The Australian, **28 November 2011.**

DNA discovery may boost stem cell safety. ABC Science Online, **28 November 2011.**

Parkinson's stem cell hope. The Age, **12 November 2011.**

Stem cell hope for Parkinson's patients. SKYNEWS, **11 November 2011.**

Stem cell breakthrough for Parkinson's disease. ABC News, **10 November 2011.**

Stem cell hope for Parkinson's patients. The Australian, **10 November 2011.**

Stem cell hope for Parkinson's patients. Nine MSN - News & Current Affairs, **10 November 2011.**

Stem cell hope for Parkinson's patients. Herald Sun, **10 November 2011.**

Expert back to study the mysteries of the stem cell. Australian Financial Review, **7 November 2011.**

Heart disease research breakthrough sparks cure hope. Herald Sun, **24 October 2011.**

Green heart boost possibility of stem cell therapies. Life Scientist, **24 October 2011.**

Cell surface marker identified to isolate cardiomyocytes derived from human pluripotent stem cells. Genetic Engineering & Biotechnology News, **24 October 2011.**

Martin Pera concerned over European Court decision on patenting. SBS Radio News, **12 October 2011.**

Anti-cloning review doubly welcomed. Herald Sun, **7 July 2011.**

Stem cell review recommends no change to current legislation. Australian Life Scientist, **8 July 2011.**

Financial Statement

<i>Financial Statement 2013</i>			
	2011 (audited) \$	2012 (audited) \$	2013 (budget) \$
Income			
Carry forward	-	1,580,877.65	1,677,883.10
ARC Income	1,500,000.00	3,000,000.00	3,000,000.00
ARC Indexation	-	164,489.00	100,000.00
Cash contributions	826,800.00	1,678,520.00	1,747,010.00
NSCFA Funding	-	-	30,000.00
Total Income	2,326,800.00	6,423,886.65	6,554,893.10
Expenditure			
Salaries ¹	561,428.43	3,088,746.57	3,404,736.82
Stipends and Prizes ²	143.73	22,744.27	-
Administrative Consumables ³	14,423.67	15,674.97	29,000.00
Materials, services, animals etc ⁴	162,122.48	1,455,876.71	1,272,478.23
Travel/Conference/Meetings/Visitor Support ⁵	7,804.04	162,961.03	286,652.25
Strategic Fund ⁷	-	-	250,000.00
Total Expenditure	745,922.35	4,746,003.55	5,192,867.30
Balance⁶	1,580,877.65	1,677,883.10	1,312,025.80

	2011	2012	2013
1. Salaries by funding source			
ARC Funded	416,165.20	2,266,859.61	2,482,050.88
Cash Contribution Funded	145,263.23	821,886.96	922,685.94
2. Stipends and Prizes by funding Source			
ARC funded	143.73	22,744.27	-
Cash Contribution Funded	-	-	-
3. Administrative consumables all ARC funded			
4. Scientific services, consumables, cell cultures and animals			
ARC funded	142,062.48	804,265.65	374,739.23
Cash Contribution Funded	20,060.00	651,611.06	897,739.00
5. Travel/Conference/Meeting/Visitor Support by funding Source			
ARC funded	7,804.04	152,399.92	223,000.00
Cash Contribution Funded	-	10,561.11	45,652.25
6. Composition of Balance of funds ARC funded	919,400.88	821,945.46	575,155.35
Cash Contribution Funded	661,476.77	855,937.64	736,870.45



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