

AGENCY/DEPARTMENT: DEPARTMENT OF INDUSTRY, TOURISM AND RESOURCES
OUTCOME/OUTPUT: Outcome 2, Outputs 2.1 and 2.2
TOPIC: AUSTRALIAN STEM CELL CENTRE AND RELATED ISSUES
REFERENCE: WRITTEN QUESTIONS ON NOTICE

QUESTION No.17

Senator Harradine asked:

17. In answer to question 52, you noted that “payment of DITR and ARC funds to the NSCC are based on satisfactory performance of the NSCC as measured by the KPIs.” On how many occasions has the Australian Stem Cell Centre not met its KPIs? How many times has a progress payment been withheld from the ASCC?

ANSWER

The ASCC has two Deeds of Agreement with the Australian Government, one for the establishment of a Biotechnology Centre of Excellence (BCE); jointly administered by the Department of Industry, Tourism and Resources (ITR) and the Australian Research Council (ARC), and one under the Major National Research Facility (MNRF) Program administered by the Department of Education, Science and Training (DEST).

Under the BCE Deed of Agreement, ITR has not withheld any payments from the ASCC as performance has been satisfactory with all KPIs met for 2002-03 and a significant majority (86%) met for 2003-04.

In accordance with the ARC Act and the BCE Deed of Agreement, ARC funds can be used only for research purposes. On three occasions the ARC determined that the next instalment of ARC funds would not be made until some of the existing ARC funds held by the ASCC were allocated to research projects.

No funds have been withheld from the ASCC under the MNRF Deed.

QUESTION No.18

Senator Harradine asked:

18. The KPI for research productivity “measures the quality and originality of research through journal publications, conference presentations and patent applications filed.” Please provide a list of all the journal publications, conference presentation and patent applications quoted by the ASCC to support their claims for this KPI, which would all be on the public record.

ANSWER

A list of journal publications and conference presentations that the ASCC provided to the Commonwealth in support of their claim against their KPIs for research productivity is attached.

Details of patent applications filed by the ASCC cannot be released until they have been published by the patent office where they have been filed.

ATTACHMENT

Scientific Publications

Author(s)	Title	Publication
Martin Pera	Differentiation of human embryonic stem cells to cardiomyocytes: role of co-culture with visceral endoderm like cells	Circulation Vol 107, Issue 21, pp 2733-40
Martin Pera	Unnatural selection of cultured human ES cells?	Nat Biotechnology Vol 22, Issue 1, pp 42-3
Richard Harvey	Cardiac homeobox gene NKX2-5 mutations and congenital heart disease: associations with atrial septal defect and hypoplastic heart syndrome	J American Coll Cardiol Vol 41, Issue 11, pp 2072-6
Martin Pera, Alan Trounson, Ed Stanley	Regulation of human embryonic stem cell differentiation by BMP-2 and its antagonist noggin.	J Cell Sc Vol 117, Part 7, pp 1269-80
Ed Stanley	Proapoptotic BH3-only Bcl-2 family member Bik/Bik/Nbk is expressed in hemopoietic and endothelial cells but is redundant for their programmed death.	Mol Cell Biol Vol 24, Issue 4, p1570
Paul Simmons	Adhesion to E-selectin promotes growth inhibition and apoptosis of human and murine hematopoietic progenitor cells independent of PSGL-1	Blood Vol 103, Issue 5, pp 1685-92
Paul Simmons	Characterisation of hematopoietic progenitor mobilisation in protease deficient mice	Blood [Submitted]
Graham Jenkin	Mechanisms responsible for parturition; the use of experimental models	Animal Reproduction Science Issue 82-83, pp 567-81
Martin Pera	Isolation, characterisation and differentiation of human embryonic stem cells	Methods in Enzymology Vol 365, 429-46
Martin Pera, Alan Trounson	Effects of BMP-2 and its antagonist noggin on human embryonic stem cells	Methods in Enzymology [Accepted]
Joy Rathjen, Peter Rathjen	Lineage specific differentiation of mouse ES cells: formation and differentiation of early primitive ectoderm-like (EPL) cells	Methods in Enzymology Vol 365, pp 3-25
Alan Trounson	Morphological assessment of preimplantation embryo quality in cattle	Reprod Suppl Vol 61, pp 103-16
Alan Trounson	The 'GO' system - a novel method of microculture for invitro development of mouse zygotes to the blastocyst stage	Reproduction Vol 126, Issue 2, pp 161-9
Graham Jenkin	Offspring produced from heterotrophic ovarian allographs in male and female recipient mice	Reproduction Vol 1, Issue 6, pp 689-94
Stephen Livesey	Explant pathology study of decellularised carotid artery vascular grafts	Journal of Biomedical Materials Research Vol 69A, Issue 2, pp197-204
Kathy Traianedes	Donor age and gender effects on osteoinductivity of demineralised bone matrix	Journal of Biomedical Materials Research Vol 70B, Issue 1, pp21-9
Graham Jenkin	Cardiovascular and endocrine responses to cutaneous electrical stimulation after fentanyl in the ovine fetus	American Journal of Obstetrics and Gynaecology Vol 190, Issue 3, pp 836-42

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Author(s)	Title	Publication
Paul Simmons, David Haylock	Improved haematopoietic recovery following transplantation with ex-vivo expanded mobilized blood cells	Br J Haematol [Accepted]
Joy Rathjen, Peter Rathjen	Differentiation of embryonic stem cells to a neural fate: a route to rebuilding the nervous system?	J Neuroscience Research Vol 76, Issue 2, pp 184-92
Alan Trounson	Mitotic errors in chromosome 21 of human preimplantation embryos are associated with non-viability	Mol Hum Reprod Vol 10, Issue 2, pp 143-7
Alan Trounson	Derivation, propagation and differentiation of human embryonic stem cells	International Journal of Biochem Cell Biology Vol 36, Issue 4, pp 555-67
Martin Pera	Characterisation and culture of human embryonic stem cells	Trends Cardiovasc Medicine Vol 13, Issue 7, pp 295-301
Alan Trounson	Oocyte activation after intracytoplasmic injection with sperm frozen without cyroprotectants results in live offspring from inbred and hybrid mouse strains	Biol Reprod Vol 69, Issue 5, pp 1683-9
Graham Jenkin	Fetal responses to maternal and intra-amniotic endotoxin administration in pregnant sheep	Biology of Reproduction Vol 68, pp 1695-1702
Joy Rathjen, Peter Rathjen	Identification of a biological activity that supports maintenance and proliferation of pluripotent cells from the primitive ectoderm of the mouse	Biol Reprod Vol 69, Issue 6, pp 1863-71
Richard Harvey	Molecular pathways in myocardial development: a stem cell perspective	Cardiovasc. Res. Vol 58, Issue 2, pp 264-7

ASCC Conferences Presentations
International Conferences

Participant Name	Title of Presentation	Conference	Location	Date
Alan Trounson	The Communicating Oocyte	State of the ART 2003	Madrid, Spain	Jul-03
Alan Trounson	Stem cells	ESHRE Pre-Congress Course	Madrid, Spain	Jul-03
Alan Trounson	Human embryonic stem cells and delivery of gene products	XIX International Congress of Genetics	Melbourne	Jul-03
Alan Trounson	Human embryonal stem cells: Scientific and political updates	Mount Desert Island Stem Cell Symposium	Maine, USA	Aug-03
Alan Trounson	Potential of stem cells and tissue engineering for tissue repair	13th International Congress of the International Federation for Plastic, Reconstructive and Aesthetic Surgery	Sydney	Aug-03
Alan Trounson	The Victorian Biotechnology Industry and NSCC	State of Victoria European Office Seminar	Frankfurt, Germany	Aug-03
Alan Trounson	Production and directed differentiation of human embryonic stem cells for potential use in cell therapies	11th European Congress on Biotechnology	Basel, Switzerland	Aug-03

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Participant Name	Title of Presentation	Conference	Location	Date
Stephen Livesey	From concept to profitability: One perspective	International Conference on Cell Engineering	Sydney	Aug-03
Stephen Livesey	ICCE: Future challenges 2003	International Conference on Cell Engineering	Sydney	Aug-03
Graham Jenkin	Characterisation and expression of fibronectin and related integrins in sheep amnion near term	Endocrine Society of Australia Seminar	Sydney	Sep-03
Stephen Livesey	Extracellular Matrix as a Template for Tissue Regeneration	Matrix Biology Society of Australia and New Zealand	Victoria	Sep-03
Stephen Livesey	Tissue Engineering Symposium	NSCC Conference	Melbourne	Oct-03
Alan Trounson	Biotechnology and Health	17th IDP Australian International Education Conference	Melbourne	Oct-03
Alan Trounson	Directed differentiation of human embryonic stem cells	Keystone Symposium on Stem Cells	Keystone, Colorado, USA	Jan-04
Martin Pera	Cell Cycle Properties of human embryonic stem cells	Keystone Symposium on Stem Cells	Keystone, Colorado, USA	Jan-04
Paul Simmons	The Cell and Molecular Biology of Mesenchymal Stem Cells	40TH Annual Meeting, Norwegian Biochemical Society	Hafjell, Lillehammer, Norway	Jan-04
Richard Harvey	Transcriptional Control of Cardiac Chamber Formation	Signalling in Vertebrate Organogenesis, Keystone Symposium	Santa Fe New Mexico USA	Feb-04
Paul Simmons	Transcriptional Profiling of Mesenchymal Stem Cells	25th Annual Lorne Genome Conference, The Organisation and Expression of the Genome	Lorne, Victoria, Australia	Feb-04
Richard Harvey	Transcriptional Control of Cardiac Chamber Formation	Cardiac Development and Congenital Heart Disease, Keystone Symposium	Keystone Colorado USA	Mar-04
Graham Jenkin	Melatonin reduces hydroxyl radical production in the late gestation fetal brain in response to acute umbilical cord occlusion	Perinatal Society of Australia and New Zealand	Sydney	Mar-04
Graham Jenkin	Activin A in the inter-uterine growth restricted ovine fetus	Perinatal Society of Australia and New Zealand	Sydney	Mar-04
Paul Simmons	Mesenchymal Stem Cells: Identification, Purification, Transcriptional profiling and Therapeutic Applications	Applications of Stem Cell Research	Beijing China	Mar-04
Martin Pera	Human embryonic stem cells: characterisation, maintenance and differentiation	Institute of Stem Cell Research	Edinburgh, UK	Jun-04
Dianna DeVore	ASCC	BIO2004 Business Forum	San Francisco, USA	Jun-04

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Participant Name	Title of Presentation	Conference	Location	Date
Martin Pera	Immunocharacterisation of Human Embryonic stem cell cultures identifies subpopulations within the stem cell lineage	2nd International Society of Stem Cell Research Annual Meeting	Boston, USA	Jun-04
Susan Hawes	Use of novel cell surface marker expressed by hepatic progenitor cells to characterise endodermal differentiation of Human Embryonic stem cells	2nd International Society of Stem Cell Research Annual Meeting	Boston, USA	Jun-04
Martin Pera	Human Embryonic derived neural progenitors correct behavioural defects in Parkinsonian rats	2nd International Society of Stem Cell Research Annual Meeting	Boston, USA	Jun-04
Alan Trounson	Reprogramming stem cell pluripotentiality by cell hybridisation	2nd International Society of Stem Cell Research Annual Meeting	Boston, USA	Jun-04

National Conferences

Participant Name	Title of Presentation	Conference	Location	Date
Alan Trounson	Stem cells and Tissue Repair	Australian Medical Students Association Convention	Brisbane	Jul-03
Stephen Livesey	Acellular Matrix for Tissue Regeneration	NSW Tissue Engineering Initiative	Sydney	Jul-03
Stephen Livesey	A national initiative of stem cells and tissue repair	Nanotech Victoria and Green Chemistry Seminar	Melbourne	Jul-03
Stephen Livesey	Stem Cells in embryonic and adult life	University of Queensland Renal Symposium	Brisbane	Jul-03
Alan Trounson	Basic developments and current trends towards therapies involving adult and embryonic stem cells	Royal Society of Tasmania	Hobart	Aug-03
Stephen Livesey	Tissue repair technologies	VIFM Working Group	Melbourne	Aug-03
Stephen Livesey	A national initiative of stem cells and tissue repair	AusBiotech 2003 Seminar	Adelaide	Aug-03
Stephen Livesey	A national initiative of stem cells and tissue repair	Monash Department of Anatomy and Biology Seminar	Melbourne	Aug-03
Alan Trounson	What are stem cells and why are they important for medicine?	Monash University Administrative Staff Support Network	Melbourne	Sep-03
Graham Jenkin	Differentially expressed genes in amnion of sheep induces with betamethosone or spontaneous deliveries using subtractive hybridisation	Endocrine Society of Australia	Sydney	Sep-03

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Participant Name	Title of Presentation	Conference	Location	Date
Graham Jenkin	Effect of graft site on Ovarian tissue grafts in the mouse	Society for Reproductive Biology Annual Meeting	Adelaide	Sep-03
Stephen Livesey	Stem cells and matrices for regenerative medicine	CSIRO Seminar	Melbourne	Sep-03
Alan Trounson	Latest developments in stem cell research	Women's Hospitals Australasia Annual Scientific Meeting	Melbourne	Oct-03
Dianna DeVore	The reality of stem cells and regenerative medicine	Australian Biotherapeutics and Tissue Regeneration Forum	Perth	Oct-03
Alan Trounson	Stem cells	School of Agriculture and Food Systems, University of Melbourne, Postgraduate Conference	Melbourne	Nov-03
Alan Trounson	Potential uses of stem cells: Embryonic and adult stem cells	St George Hospital Symposium	Sydney	Nov-03
Alan Trounson	Science, society and stem cells	Royal Society of Victoria Seminar	Melbourne	Nov-03
Stephen Livesey	Innovations in Tissue Regeneration	Therapeutic Goods Administration Seminar	Canberra	Nov-03
Stephen Livesey	Tissue Regeneration - Future Directions	Victorian Institute of Forensic Medicine Seminar	Melbourne	Nov-03
Stephen Livesey	Innovations in Tissue Regeneration	Royal Childrens Hospital, Department of Plastic and Reconstructive Surgery	Melbourne	Dec-03
Stephen Livesey	Tissue repair technologies	NSW Tissue Engineering Initiative Workshop	Sydney	Dec-03
Graham Jenkin	The Educational Role of the NSCC	3rd Stem Cell Workshop, NSW Network	Sydney	Jan-04
Peter Rathjen	A novel protein with multiple roles in RNA metabolism	25th Lorne Genome Conference	Lorne, Victoria	Feb-04
Richard Harvey	A Common Mutation in the GATA4 Gene associated with ASD and Stroke	A Day of Science, Victor Chang Cardiac Research Institute Seminar	Sydney	Mar-04
Dianna DeVore	Research Rights & Patents	Knowledge Commercialisation Australasia	Perth	Mar-04
Stephen Livesey	A National Initiative of Stem Cells and Tissue Repair	Presentation to Monash University - Dept of Chemical Engineering	Melbourne	Apr-04
Stephen Livesey	Tissue regeneration and extracellular matrix	Royal Australasian College of Surgeons Annual Scientific Conference	Melbourne	May-04

QUESTION No.19

Senator Harradine asked:

19. I note there is a KPI for compliance with laws, ethical standards and the norms of corporate governance. Why isn't it assumed that the ASCC will comply with the law and ethical standards? Have there been instances where the ASCC admitted or it has been discovered that the ASCC had not complied with the law and ethical standards? If so, please provide details.

ANSWER

There have been no instances where the ASCC has informed the Australian Government or it has been discovered by the Australian Government that the ASCC has not complied with the Australian law and regulatory ethics codes and guidelines.

The Australian Government is cognisant of the fact that the community requires assurances that health and medical research is undertaken in a manner which complies with the Australian laws and thus requires the ASCC to regularly assure ITR and the ARC that it is conscious of and complies with relevant legislation.

QUESTION No.20

Senator Harradine asked:

20. I note that in question 53, you said that funding for the ASCC's embryonic stem cell research in future years had not been determined and the research program had not been finalised. Has the research program now been finalised? If so, please provide details of estimated spending in future years on embryonic stem cell research.

ANSWER

The ASCC informs that at 15 December 2004:

- Approximately \$4.28 million has been committed to research involving adult stem cells for the period beginning 10 December 2003 and ending 30 June 2006. This amounts to 36% of research funds committed by the Centre to date.
- Approximately \$4.02 million has been committed to research involving mouse embryonic stem cells for the period beginning 10 December 2003 and ending 30 June 2006. This amounts to 34% of research funds committed by the Centre to date.
- Approximately \$3.59 million has been committed to research involving human embryonic stem cells for the period beginning 10 December 2003 and ending 30 June 2006. This amounts to 30% of research funds committed by the Centre to date.

Further commitments for research funding in the area of embryonic and adult stem cells are likely to be entered into within the next few months.

QUESTION No.21

Senator Harradine asked:

21. Please provide the names of the members of the ASCC Scientific Management Advisory Committee.

ANSWER

The members of the ASCC Scientific Management Advisory Committee, as at December 2004, are:

- Professor Richard Ivell
- Associate Professor Pauline Doran
- Associate Professor Melissa Little
- Professor Michael Berndt
- Dr Pritinder Kaur
- Professor Malcolm Horne
- Professor David Martin
- Professor John Bateman
- Professor Charles McKay
- Professor Perry Bartlett
- Professor Kerry Atkinson
- Associate Professor George Yeoh
- Dr Patrick Tam
- Dr Joy Rathjen
- Professor Milton Hearn

QUESTION No.22

Senator Harradine asked:

22. Please provide the names of the members of Stem Cell Ethics Australia, which forms part of the ASCC ethics structure.

ANSWER

Stem Cell Ethics Australia (SCEA) is an autonomous entity, independent of the ASCC. It was established to provide a forum for ethical debates on the implications of scientific advances in the field of stem cell research. While SCEA may provide independent advice to the ASCC on ethical issues it is not responsible for the ethical review of ASCC funded research projects and it is not formally part of the ASCC ethics structure.

ITR has been informed by SCEA that the current members of SCEA are:

- Reverend Colin Honey - Chair
- Ms Carolyn Cameron
- Ms Sarah Chan
- Dr Edgar Dahl
- Dr Norman Ford
- Ms Cassy Harris
- Mr Graeme Joy
- Rabbi John Levi
- Professor Klaus Mattheai
- Professor Margaret Otlowski
- Professor Roger Short
- Mrs Monica Walters
- Professor Bob Williamson

QUESTION No.23

Senator Harradine asked:

23. I understand that SCEA is chaired by Rev Colin Honey. Are you aware that Rev Honey is on the extreme fringe of bioethical discussion, not opposing human cloning for reproduction? Others associated with the SCEA such as Professor Bob Williamson and Professor Alan Trounson are outspoken advocates for human cloning for research. Have you made absolutely sure that no Commonwealth funding has gone or will go to the SCEA?

ANSWER

Rev Honey has masters level qualification in philosophy (Melbourne University) and Theology (Cambridge). He founded the Kingswood Centre for Applied Ethics and was a founding member of the Australia National Bioethics Consultative Committee. We are aware that Rev Honey, an ordained Methodist (now Uniting) Church Minister, has called for an examination of the ethics of therapeutic cloning, reproductive cloning and stem cell research.

The intention of SCEA is to bring together a broad coalition of people with backgrounds in medical, legal, religious and scientific matters as well as members of the general community. The representation of a broad range of views within SCEA may facilitate discussion between persons or groups with varying ethical perspectives.

The ASCC provided an initial establishment grant to SCEA (then known as the Independent Ethics Advisory Committee) to facilitate informed debate on issues pertaining to stem cells in Australia. The ASCC has no role in determining the membership, governance, projects or communications of the SCEA. Organisations including the ASCC may choose to seek ethical advice from SCEA and/or consider funding requests.

Professor Trounson is not a member of SCEA.

QUESTION No.24

Senator Harradine asked:

24. I note that Biotechnology Australia's Craig Cormick spoke at the Australian Stem Cell Centre Second Scientific Conference on 23 November. Please provide a copy of the paper given called "Perspectives of stem cell research and society's ethical values" and copies of the poster presentations "Public attitudes towards stem cell applications" and "Changing community attitudes towards stem cell technologies".

ANSWER

The conference session, which aimed to foster audience discussion about issues relating to community understanding and attitudes, entailed a PowerPoint presentation and screening of the highlights of a focus group. There was no formal paper associated with the session.

The session's PowerPoint presentation is attached. It was compiled by Craig Cormick; Dr Adrienne Torda, Senior Staff Specialist at the Prince of Wales Hospital and Senior Lecturer in Medical Ethics at the Centre for Values, Ethics and the Law in Medicine at the University of Sydney; and Tamra Lysaght, doctoral student at the Centre for Values, Ethics and the Law in Medicine at the University of Sydney.

Mr Cormick presented only one poster at the Conference: *Public attitudes towards stem cell applications*. The earlier draft title "Changing community attitudes towards stem cell technologies" was changed to this title. A copy of this poster is also attached.