



The Royal Society of New South Wales

"for the encouragement of studies and investigations in Science Art Literature and Philosophy"

1286th ORDINARY GENERAL MEETING

WEDNESDAY 2 SEPTEMBER 2020 AT 6.30PM

By ZOOM Webinar

AGENDA

1. **WELCOME** – President, Emeritus Professor Ian Sloan AO FRSN
 - 1.1 **Acknowledgement of country**
 - 1.2 **Diversity and Inclusion statement**
 - 1.3 **Minutes of the 1285th Ordinary General Meeting held on 5 August 2020**
2. **CONFIRMATION OF MEMBERSHIP**

As no valid objection was lodged within two weeks following the 1285th Ordinary General Meeting, the election of the following new Members took effect from the date of that meeting held on 5 August. Certificates will be presented at the first opportunity at a face-to-face meeting.

- 2.1 **Members**

Mr Daniel Coghlan
Dr Peter Hobbins

3. **ANNOUNCEMENT OF NAMES OF CANDIDATES FOR MEMBERSHIP**

- 3.1 **Fellows**

Dr Noel Geoffrey Barton
Professor Dane Robert Comey
Dr Graeme Laurence Cohen
Emeritus Professor Annabelle Duncan
Adjunct Professor Nick Lomb
Professor John Harold Loxton
Professor Huw Price
Professor Peter John Radoll
Dr Tristan Andrew Reekie
Ms Belinda Robinson
The Hon Arthur Sinodinos
Professor David Iain Warton

4 REPORT FROM COUNCIL AND COMMITTEES OF COUNCIL

The President wishes to bring to members' attention the following matters.

4.1 Presentation of 2019 Awards

The Society's Patron, Her Excellency The Honourable Margaret Beazley AC QC, Governor of New South Wales presented the 2019 Awards at a small ceremony at Government House on 13 August. The ceremony was necessarily conducted under unusual conditions. The guests were limited in number and were seated according to the four square metre rule. The Governor passed the medals and certificates to the recipients across a suitably-sized table.

In her remarks, The Governor spoke appreciatively of the Society's role in the intellectual life of New South Wales. She said how pleased she was to be able to present the awards at this time as it was the first major presentation event held at Government House since March because of the pandemic.

As well as the 2019 Awards, The Governor presented Scientia Professor George Paxinos AO DistFRSN with his Distinguished Fellowship of the Society.

4.2 strategic planning day

The Executive met on 25 August to develop a strategic plan for the Society for the period 2021 – 2023. The Council will consider the plan after it has been reviewed by Council committees.

4.3 Future events

One particular future event that I would urge members to consider attending is The Clancy Collection—an Exhibition of Early Maps “Charting a Course: a 500-year story of discovery and the development of Sydney”. It is at Manly Art Gallery and Museum, West Esplanade Reserve, Manly on Wednesday, 14 October 2020, 4.00-5.30pm. Due to the pandemic numbers are restricted.

5 THIS EVENING'S PRESENTATION

The Dawn of Molecular Medicine—Gene Therapy: past, present and future

Professor John Rasko AO

Head, Department of Cell & Molecular Therapies, Royal Prince Alfred Hospital

John Rasko is an Australian pioneer in the application of adult stem cells and genetic therapy. Since 1999 he has directed the Department of Cell and Molecular Therapies at Royal Prince Alfred Hospital and the Gene and Stem Cell Therapy Program at the Centenary Institute, University of Sydney. He is currently the President of the International Society for Cell & Gene Therapy.

He is a clinical haematologist, pathologist and scientist with an international reputation in gene and stem cell therapy, experimental haematology and molecular biology. He has contributed to the understanding of stem cells and blood cell development, gene therapy technologies, cancer causation and treatment, human genetic diseases and molecular biology.

He serves on hospital, state and national bodies including Chair of GTTAC, Office of the Gene Technology Regulator – responsible for regulating all genetically-modified organisms in Australia - and immediate past Chair of the Advisory Committee on Biologicals, Therapeutic Goods Administration. Contributions to scientific organisations include co-founding of the Australasian Gene & Cell Therapy Society; Vice President and President of the International Society for Cell & Gene Therapy; Scientific Advisory Committees and Board member for philanthropic foundations; and several Human Research Ethics Committees. He is a founding Fellow of the Australian Academy of Health and Medical Sciences. In 2018, he was the ABC's sixtieth Boyer Lecturer.

He is the recipient of national and international awards in recognition of his commitment to excellence in medical research. He was made an Officer of the Order of Australia in the Queen's Birthday Honours in 2012 for service to biomedical research in the field of gene and cell therapy, as a clinician, author, administrator and philanthropist.

Over the next five years a possible 900% increase in Gene and Stem Cell Therapy approvals has been forecast. The convergence of substantial incremental technical advances towards combined cell and gene therapy has led to improved clinical outcomes in immune deficiencies, haemoglobinopathies, blindness, immunotherapies and other inherited diseases. An audit of cell, tissue and gene products with marketing authorization in 2018 worldwide identified 44 unique products, 37 of them are cell and tissue therapies (84%) and mainly autologous (55%).

The challenge of realizing the full potential of genetic understanding has been vital in overcoming the hurdles of efficient gene therapy. Since the first human clinical trial using gene technology in 1989, there have been nearly 3,000 approved clinical trials worldwide. The overwhelming majority of human clinical trials involves short-term gene expression or random integration of a therapeutic gene. Emerging technologies require controlled development in compliance with safety, regulatory and GMP requirements. More precise gene targeting tools were first described in the early 2000s. Targeted gene editing or replacement using Zinc Finger Nucleases or TALENS have been tested in about a dozen clinical trials since 2009.

In parallel with objectively proven therapies, 'stem cell tourism' has become a billion dollar industry with increasing examples of false claims. Embryonic and induced pluripotent stem cells have been mired in controversy and clinical development has been forestalled. We reported an analysis of the global distribution of more than 400 unique businesses marketing stem cell-based interventions. Many of these online entities promote clinical applications of 'stem cells' beyond present-day standards of care. These data should be of immediate concern to governments and ethicists being lobbied to amend laws governing the manufacture, distribution and clinical use of human cell-based medical products. Unregulated, untested or unsafe stem cell 'therapies' place the field at a difficult crossroad. Blurring the lines that distinguish evidence-based cell therapies from those that are not remains a fundamental public health concern.

Highlights in the clinical cell & gene therapy field will be discussed with special reference to haemophilia, thalassaemia, graft *versus* host disease and cancer.

6 VOTE OF THANKS AND CLOSE