The history and development of the Human Genetics Society of Australasia

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Abstract

The Human Genetics Society of Australasia is a vibrant professional society with more than 900 members that promotes and regulates the practice of human and medical genetics in Australia and New Zealand. The growth of human genetics was stimulated by the development of diagnostic clinical cytogenetics laboratories in the early to mid 1960s. This coincided with the recognition by medical specialists, mainly paediatricians, that genetic disorders, especially inborn errors of metabolism and birth defects, were of clinical interest and potentially challenging areas for their skills. The organisation of professionals in human genetics was slow to evolve. There was an early Western Australian Human Genetics Society and the cytogenetics community had begun to meet annually from about 1966 but was coordinated by a mailing list rather than as a formal organisation. In 1976, as part of the celebrations of the Centenary Year of the Adelaide Children's Hospital, a clinical genetics meeting involving several high profile international speakers and most of the senior medical geneticists in Australia and New Zealand along with the annual meeting of the loose knit cytogeneticists group agreed that a small working group be charged with setting up a Human Genetics Society. The Society was formally incorporated in South Australia in 1977.

Introduction

While the theoretical foundations of human genetics have come from classical genetics it has only been since the application of genetics to human medicine that human genetics has developed as a largely separate discipline from non-human genetics. The former is essentially based in hospitals and the latter within universities and there has been, at least in Australia, only minimal interaction between the two branches of this science. The classical geneticists formed the Genetics Society of Australasia (of Australia at formation) in about 1955 but it would be two decades later before a human genetics society would come into being.

Human Genetics did not begin to develop its independent existence until two separate but related processes began to coalesce. The discovery in 1960 of the use of hypotonic treatment of lymphocytes stimulated to divide by phytohaemagglutinin provided a robust method for analysing human chromosomes and opened the way to the development of diagnostic cytogenetic laboratories in the early 1960s. Around the same time medical genetics evolved with the recognition that genetics played a significant role in birth defects and that the management of infants with inborn errors of metabolism required special knowledge and skills. Most of the practioners of medical genetics, especially in Australia, were paediatricians, perhaps largely due to the influence of the late David Danks, the pioneer of medical genetics in Australia who established the Genetics Research Unit at the Royal Children's Hospital in Melbourne in 1967. The recognition that genetic knowledge was important to the etiology and management of many adult

diseases came later and the influx of medical specialists other than Paediatricians into medical genetics has been slow.

Early moves

It was suggested in the very early 1970's that a Human Genetics Branch of the Anatomical Society of Australia and New Zealand be formed and Dr David Wallace (Partington 2003) wrote to various players with this suggestion. A reply from David Danks to Wallace dated 29.9.1971 gave his view that this was "…a rather quaint place to form such a group." And Danks further stated that the Genetics Society of Australia "…does not offer much to the human geneticist."

The cytogenetics group

From the mid 1960s a mailing list of interested cytogeneticists was maintained by Keith Brown who ran a cytogenetics laboratory at the Lucas Heights Atomic Energy establishment in NSW. Keith organised scientific meetings, originally in Sydney but later moving to other States, focussed on human cytogenetics. This group was the only one that could claim to have been a forerunner to the HGSA.

The Centenary of the Adelaide Children's Hospital

1976 was the Centenary Year of the Adelaide Children's Hospital, then subsumed into the Women's and Children's Hospital and now part of the Child Youth and Women's Health Service. There were a number of events that were part of the hospital Centenary celebrations and one of them was a major medical genetics conference. A number of high

profile overseas geneticists were invited. Most of the clinical geneticists in Australia and New Zealand attended. The informal cytogenetics group agreed to have their annual meeting co-located with the conference. Most of the practioners of human genetics in Australia and New Zealand were there. (The proceedings of this conference were published as a single copy of the *Records of the Adelaide Children's Hospital*).

An informal session was devoted to discussion about the formation of an Australian (soon Australasian) Society of Human Genetics. The Adelaide organisers of the Centenary meeting were asked to come up with formal proposals to be put to a future meeting. At this stage the *de facto* office holders in the yet to be born organisation were Tony Pollard as Chairman and Grant Sutherland as Secretary.

Formation issues

There were various tensions in the discussions and correspondence emanating from the Adelaide meeting. Western Australia already had its own Human Genetics Society and that group did not want to be 'taken over' by upstarts from the Eastern states. The cytogenetics group, who were mostly modestly rewarded non-doctoral scientists and technicians, were concerned that they would loose their identity and influence if the apparently more politically influential and wealthy medical geneticists 'took over'. There were minor tensions between the medical geneticists, who were the consumers of cytogenetics laboratory reports and pathologists who mainly had control of the cytogenetics laboratories. And there were (often) major tensions between the cytogeneticists and their pathologist masters.

Nevertheless, the Adelaide 'executive' got on with the administrative aspects of forming a society. A draft constitution was drawn up. A group of State representatives (Table1) was chosen to communicate with the Adelaide group and potential members of the new society within each State.

Western Australians decided to maintain their identity as members of the Human Genetics Society of Western Australia. Ian Walpole as Secretary of the HGSWA wrote to Grant Sutherland on 31.5.78 to "…formally indicate that we wish to become an Affiliated Society of the HGSA." (Eventually this arrangement ended, a new Constitution was adopted in 1985 in which there was no mention of the Western Australian Society of Human Genetics). A number of Western Australians joined the HGSA as soon as it was formed but others relied on being members of the Affiliated Society for their information about HGSA activities.

The membership issue

A contentious issue revolved around just who could be a member of the new Society. Was some formal academic qualification required? Was some professional involvement in the practice of human (or other) genetics necessary? The first constitution, adopted at the 1978 AGM allowed for ordinary and associate members. The requirement for ordinary membership was a tertiary qualification equivalent to a Bachelor's degree. A number of cytogeneticists felt disenfranchised by this as they had arrived in cytogenetics via the technical route. Those without a degree were offered Associate Membership. Constitutional changes approved at the 1989 AGM had the effect of deleting the class of

Associate member from the Society. A more recent Associate Membership has been available for those resident overseas and those who primary vocation is not in genetics

Inaugural Meeting, Melbourne 1977

The inaugural meeting of the HGSA was convened at Monash University on 24-25 August 1977. The constitution which had been drafted was discussed; Tony Pollard as Chairman of the group and Grant Sutherland as Honorary Secretary were asked to continue development of the Constitution. The Inaugural lecture was delivered by Prof Michael J.D. White, one of the World's leading insect cytogeneticists. The locations of all HGSA meetings and the meeting themes are shown in Table 2, not all meeting themes are recorded and not all meetings had themes.

Second Meeting, Sydney, 1978

This meeting on 16 May formally adopted the Constitution. Tony Pollard was elected the Foundation President and Grant Sutherland the Foundation Honorary Secretary. The Presidents of the HGSA, their states or regions of origin and their dates of election are shown in Table 3.

Early Activities of the HGSA

The HGSA was determined to be more than a society that simply organised an annual scientific meeting. At the time of its formation medical genetics was not formally recognised as a medical speciality, there was no qualification (or recognised profession) in genetic counselling, there was no competency certification in any area of laboratory

genetics and no regulation of cytogenetics laboratories. There were concerns that any medical practioner could call him/herself a clinical geneticist and that any pathology laboratory could provide genetics testing.

The HGSA set up Boards of Censors, initially for Cytogenetics and for Clinical Genetics, then for Genetic Counselling and more recently for Molecular and Biochemical Genetics.

Newsletter/Bulletin

The first HGSA Newsletter was issued in February 1979 and was issued twice yearly until around 1987 when it became the Bulletin of the HGSA. It continued until 2005 when it was discontinued. Although an electronic version was to follow on the HGSA website (http://hgsa.com.au) this does not appear to have happened.

Policy Development

As the sole professional organisation covering all aspects of human and medical genetics the HGSA has developed policies on various aspects of human genetics and its applications and statements on issues that affect other groups but where the HGSA has special expertise. In 1983 a "Policy statements of the Human Genetics Society of Australasia" booklet was issued which contained policies on:

- Genetic registers
- Clinical Genetics
- Prenatal Diagnosis
- Newborn screening for inborn errors of metabolism and related disorders

- Training of cytogeneticists and accreditation of cytogenetics laboratories.

The HGSA now has more than 20 policies that are available on its web site and are listed in table 4.

Special lectures

In the late 1980's HGSA decided to establish the HGSA Oration to be given at the Annual Scientific meeting. There was some lively discussion when this was established as to whether a medal should be awarded to each Orator, but those who thought this was unnecessary prevailed and the egalitarian nature of the Society was preserved. A certificate suitable for framing is now awarded. The first Oration was given at the 1990 Annual Scientific Meeting; it became a lecture given by a senior member of the HGSA who had contributed significantly to the discipline over many years. The HGSA Orators are listed in Table 5.

In 2005 the author was greatly touched and honoured when the Society established the "Sutherland Lecture" to be given annually by a mid-career researcher in human genetics. The Sutherland lecturers are listed in Table 6.

Acknowledgements

This history is of necessity idiosyncratic in that it relies on my imperfect memories and those of the individuals I consulted, the extant documents that could be accessed and help provided by Mandy Valsinger of the HGSA secretariat. I thank Sharon Bain, Eric Haan, John Mulley, and Ian Walpole for commenting on a draft of this article. Any errors of fact or interpretation are mine.

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Bibliography

Choo K.H.A. (2003) OBITUARY David M. Danks, M.D., A.O. (June 4, 1931–July 8, 2003): Founder, Murdoch Childrens Research Institute *Am. J. Hum. Genet.* 73:981–985

Partington, M. (2003) Pioneers in Australian human genetics: David Wallace 1926-1978. *Bull HGSA* 16(1), *20-23*

Table 1. State representatives in the early stages of the formation of the HGSA

New South Wales:	Reg Lam-Po-Tang
	Max Nichols
	Keith Brown
Victoria:	David Danks
	Margaret Garson
Queensland:	Neville Anderson
	John Pearn
	Alan Clague
South Australia:	David Hayman
	Grant Sutherland
Western Australia:	Pat Hurse
	Peter Silberstein
	Athel Hockey
Tasmania:	Margaret Baikie
New Zealand:	Arthur Veale

Table 2. Locations of HGSA meetings 1977-2008 with meeting themes where these are known.

1977	Melbourne	Inaugural Meeting
1978	Sydney	
1979	Queenstown, new Zealand	
1980	Brisbane	
1981	Canberra	
1982	Adelaide	
1983	Perth	
1984	Lorne, Victoria	Molecular Genetics
1985	Sydney	Genes, Environment and Mankind
1986	Canberra	
1987	Rotorua, New Zealand	
1988	Brisbane	
1989	Alice Springs	
1990	Perth	
1991	Melbourne	
1992	Newcastle	
1993	Canberra	
1994	Auckland, New Zealand	
1995	Brisbane	Genes and Development
1996	Adelaide	
1997	Perth	Human Genetics: Diversity and Disease
1998	Melbourne	
1999	Sydney	Genetics into the new Millennium
2000	Wellington, New Zealand	Just Genes
2001	Cairns	
2002	Adelaide	
2003	ICG - Melbourne	
2004	Perth	Genes West
2005	Newcastle	Genetics in the Hunter
2006	ICHG - Brisbane	
2007	Auckland, New Zealand	Genetics for Hearts and Minds
2008	Adelaide	

Table 3. Presidents of the HGSA, with years elected

Anthony C Pollard (Foundation President, SA)	1977
David M Danks (Victoria)	1979
Charles Kerr (NSW)	1981
John Pearn (Queensland)	1983
Robert L Kirk (ACT)	1985
Cyril Chapman (New Zealand)	1987
Grant R Sutherland (SA)	1989
O Margaret Garson (Victoria)	1991
Robert Robertson (NSW)	1993
Jack Goldblatt (SA)	1995
Bridget Wilken (NSW)	1997
Agnes Bankier (Victoria)	1999
Eric A Haan (SA)	2001
Cynthia Roberts (NSW)	2003
John Christodoulou (NSW)	2005
David Thorburn (Victoria)	2007

Table 4. Policies and Statements

Guidelines for Diagnosis of Huntington Disease

Role of the Clinical Geneticist

Australian Society of Genetic Counsellors Code of Ethics

Predictive Testing in Children and Adolescents

Parental Consent to the Paternity Testing of Children for Non-Clinical Purposes

Presymptomatic and Predictive Testing for Genetic Disorders v2 2005

Human Genetics Education

HGSA Position Paper on the Patenting of Genes

Human Cloning

Predictive Testing and Insurance

Privacy Implications of Genetic Testing

Guidelines for the Structure of Clinical Genetics Units in Australia

HGSA Policy on Fundraising

HGSA Policy Statement on Newborn Screening

HGSA Policy on the Retention, Storage and Use of Sample cards from Newborn Screening Programs

Guidelines for Testing for Fragile X Syndrome

Guidelines for the Application of DNA Techniques for the Diagnosis of Human Genetic Disorders

Prenatal Screening tests for trisomy 21 (Down syndrome), trisomy 18 (Edwards syndrome) and Neural Tube Defects

HGSA Position Statement Protection of Human Genetic Information

The Use of Assisted Reproductive Technology to Select for Disability

HGSA Position Statement Genetic Testing and Sport Performance

Table 4 continued

HGSA Position statement Intelligent Design

Direct to Consumer Genetic Testing - HGSA Issues Paper

Table 5. HGSA Orators and their oration titles

1990 Tony Pollard Birth and adolescence of the HGSA and its sibling 'ACH Chem-Path'

1991 O. Margaret Garson. Seven little Australians

1992 David Danks. What we can do/What we should do

1993 Richard Cotton. Detection of mutations in DNA

1994 Peter Fitzgerald. A human perspective

1995 Gillian Turner. The X chromosome and intelligence

1996 Grant Sutherland. Fragile sites: from medium 199 to dynamic mutation

1997 Bridget Wilcken. Mild disease carriers and problems with screening.

1998 John Rogers. From Medical Genetics to Psychotherapy and back again

1999 William (Bill) Carey. Lysosomes, peroxisomes and other very important matters

2000 Dianne Webster. Newborn Screening Quality – Lessons from the Past

2001 Sister Regis Mary Dunne. Ethics and public policy in the genomic era

2002 John J Hopwood. Lysosomal storage disorders: early diagnosis and effective therapy.

2003 Bob Williamson Ethics, the New Genetics and Public Health

2004 Jack Goldblatt. Do Genetics - See the World

2005 Michael Partington. Forays in syndromology over 50 years

2006 Not held

2007 Robert (Mac) Gardner. Some reflections on the Philosophy and Practice of Medical Genetics

2008 John C Mulley. Forty years from markers to genes

Table 6. HGSA Sutherland Lecturers and their titles

2008	Kathryn North	A gene for speed? ACTN3, evolution and athletes
2007	David Thorburn	Threads of life, granules of death, and a circular genome of death
2006	Georgia Chenevix-Trench	Meeting the challenges of breast cancer genetics research from Down Under
2005	Jozef Gećz	Mining for GOLD on the X chromosome