The Diana Temple Memorial Lecture

Things we should celebrate

Nobel Memorial Prize in Economic Sciences – 1st woman to win

The advancement of the role of women in science

2009 Nobel Prizes - a stellar year...

- Elizabeth Blackburn (with Carol Greider and Jack Szostak)
- Nobel Prize in Physiology or Medicine
- “For the discovery of how chromosomes are protected by telomeres and the enzyme telomerase”

- Elinor Ostrom (with Oliver Williamson)
- “For her analysis of economic governance, especially the commons”

- A record five women were honoured by the Nobel committees:
  - Elinor Ostrom
  - Elizabeth Blackburn
  - Carol Greider
  - Ada Yonath
  - Herta Mueller
Increasing frequency of women winning the Nobel Prize in Physiology or Medicine

1947 - Gerty Cori
1977 - Rosalyn Yalow
1983 - Barbara McClintock
1988 - Gertrude Elion
1995 - Christiane Nüsslein-Volhard
2004 - Linda Buck
2008 - Françoise Barré-Sinoussi
2009 - Elizabeth Blackburn & Carol Greider

(Data from Deewr)

Science Graduates

- Greater than 50% of science graduates since 2001 are female

(Data from Deewr)

Maths & Science Literacy OECD PISA 2006

- Males and females showed no difference in average science performance in the majority of countries, including Australia
- Australian female students performed significantly higher than males in the identifying scientific issues competency
- But… males performed better at the explaining phenomena scientifically competency

(Data from Deewr)

Federation Fellows

- Frances Baumber, Flinders University
- Michelle Simmons, UNSW
- Tanya Monro, University of Adelaide
- Bernadette McSherry, Monash
- Cheryl Praeger, UWA
- Toni Shippenberg, USYD
- Hilary Charlesworth, ANU
- Sheila Fitzpatrick, Melbourne University
- Jill Trewella, USYD

Laureate Fellows

- Rachel Wong, UQ
- Marcela Bilek, USYD
- Amanda Lynch, Monash
- Marilyn Renfree, Melbourne University
- Catherine Stumpf, USYD
- Lenore Manderson, Melbourne University
- Lesley Head, University of Wollongong
- Jenny Martin, University of Queensland

Women in Australian Science Management

- Megan Clark, CEO, CSIRO
- Penny Sackett, Chief Scientist
- Lyn Beazley, WA Chief Scientist
- Mary O’Kane, NSW Chief Scientist & Engineer
- Margaret Sheil, CEO, ARC
- Vicki Sara, former CEO, ARC
- Suzanne Cory, former Director, WEHI
- Wendy Craik, former CEO, Murray–Darling Basin Commission

(Data from Deewr)
Vice-Chancellors – Present
- Janice Reid, UWS
- Sandra Harding, JCU
- Margaret Gardner, RMIT
- Sally Walker, Deakin University
- Jeanette Hackett, Curtin University of Technology

Vice-Chancellors – Past
- Di Yerbury, Macquarie University
- Fay Gale, UWA
- Mary O’Kane, University of Adelaide
- Denise Bradley, UniSA
- Millicent Poole, Edith Cowan University
- Anne Edwards, Flinders
- Helen Gardner, CDU
- Glenice Hancock, CQU

Governors and one is a scientist too!
- Governor-General, Quentin Bryce
- NSW Governor, Marie Bashir
- Qld Governor, Penny Wensley

Politics - Commonwealth
- Deputy Prime Minister, Julia Gillard
- Minister for Health, Nicola Roxon
- Minister for Climate Change and Water, Penny Wong
- Minister for Families, Housing, Community Services and Indigenous Affairs, Jenny Macklin
- Minister for Housing and the Minister for the Status of Women, Tanya Plibersek
- Former Minister for Education, Science and Training, Julie Bishop
- Former Minister for Communications, Information Technology and the Arts, Helen Coonan

Politics - State
- Qld Premier Anna Bligh
- TAS Deputy Premier & Minister for Health, Lara Giddings
- NSW Deputy Premier & Minister for Health, Carmel Tebbutt
- NSW Minister for Education & Training, Verity Firth
- NSW Minister for Commerce & for Science and Medical Research, Jodi McKay
- SA Minister for Education, Jane Lomax-Smith
- WA Minister for Education, Elizabeth Constable

Things we should worry about
Australia has a relatively good overall proportion of tertiary qualifications – but a low proportion of people with SET tertiary qualifications in comparison to other OECD countries, with fewer women participating in SET higher education courses that in many OECD countries.

DEST Audit of Science, Engineering & Technology Skills, p44. OECD At A Glance Report 2007

Low frequency of women winning the Nobel Prize in Physics and Chemistry

- Nobel Prize in Physics
  - 1903 - Marie Curie
  - 1963 - Maria Goeppert-Mayer

- Nobel Prize in Chemistry
  - 1911 - Marie Curie
  - 1935 - Irène Joliot-Curie
  - 1964 - Dorothy Crowfoot Hodgkin
  - 2009 - Ada Yonath

Composition of Australian Parliaments by Gender 11/8/09 - % female

<table>
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<th>State</th>
<th>Cth</th>
<th>NSW</th>
<th>VIC</th>
<th>QLD</th>
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Source: Politics and Public Administration Group, Australian Parliamentary Library

Women in Leadership

- 51% companies in the ASX 200 in 2008 still have no female directors
- In 2008, for example, 45.5% companies in the ASX top 200 have no women on the executive team
- Women hold only 10.7% of executive leadership roles in the ASX 200 and only 5.9% of operating positions

EOWA Australian Census, 2008
Thank you, Sharon Bell!

- Women constituted 22.3% of full-time professionals in Design, Engineering, Science and Transport in 2008, up only 4.2% from 18.1% in 1996 Female ICT professionals fell by 3.8% over same period, from 19% to 15.2%

- Female Engineering, ICT and Science Technicians also fell from 18.9% to 17.1%.

CSIRO

- 1,727 research scientists: 21% are women
- < 10% at the top salary are women
- 194 research managers: 8% are women
Academies

- Academy of Science Fellows: 7% are women
- ATSE Fellows: 6% are women

CSIRO: P. 21

Academic Profiles by Gender – Natural and Physical Sciences

Academic Profiles by Gender – Agriculture and Environmental Sciences

Academic Profiles by Gender – IT

Academic Profiles by Gender – Engineering

NB. Ageing workforce
Federation Fellows

The gender issue remains...

Things that worked

WiseNet
- Mentoring
- Networking for women in science
- Examples
- Support & confidence
- Still relevant 25 years on!

Early Career Researchers
- Assessing track record against opportunity
- Gaming grants
- Special status in grant applications

Valuing tertiary teaching
Thank you
- Jackie Lublin
- Ingrid Moses
- Kwong Lee Dow!
HECE award (1998)
- Response to accelerating use of non-continuing employment in universities
- Prohibited use of fixed-term contracts except in specified circumstances
- All staff received letters of appointment specifying the type of employment contract, salary, classification, hours of work, and conditions of employment.

UK Athena Project
- Developed good practice guidelines
- Surveys that found that research culture, networking and provision of childcare are crucial to the retention of women researchers.

Monash University
- University-Wide Mentoring Scheme for Women
- Extensive paid maternity leave
- Grant for female academics returning from maternity leave to help maintain research momentum
- 92% of women have returned to work from maternity leave since 1992

L’Oreal-UNESCO For Women in Science Program
- L’Oreal-UNESCO Awards
- International L’Oreal-UNESCO Fellowships
- National L’Oreal-UNESCO Fellowships
- Examples of Australian recipients:
  - Professor Jennifer Graves, 2006 Laureate for Asia/Pacific
  - Professor Suzanne Cory, 2001 Laureate for Asia/Pacific

Things we might tackle
- FASTS Recommendations
  - Leadership at a political level
  - Scientific career paths: allow flexibility, remove barriers, map appropriate paths
  - International cultures and decision-making: follow USA & EU policies to ensure women represent 1/3 in policy, funding and decision-making boards
  - Evidence and evaluation: improve evidence base and create clearinghouse for best practice
  - Leadership: empower leaders to address these issues
Re-examine the underlying generic skills associated with maths/science?

Maths relies on the capacity for symbolic reasoning

Related skill sets
- Learning foreign languages
- Structured games

Embedding concept of part-time (research) leader
- Major re-think of maximising impact
- Need deep & widespread culture change of perceived contribution

More imaginative family support
- Universities to provide transport to collect kids for school & childcare
- Broadband links for video meetings

Nominating women for ...
- Prizes
- Jobs
- Committees
- Public lectures
- International leadership roles