

Women in Science & Engineering Summit

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Parliament
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Canberra

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The Women in Science and Engineering Summit brought together scientists, engineers, business leaders, research funders, policy makers and the media to discuss tangible solutions to the female brain drain in science and engineering. This report from the Summit comprises the brief communiqué issued on the day, and a more detailed communiqué written after the event. It sets the scene for action. A Powerpoint presentation outlining the WiSE Summit's goals and achievements can be downloaded at www.sta.org.au.

Brief Communiqué: Research leaders act to stop female brain drain (issued 11 April 2011)

CSIRO, Australia's largest employer of researchers, committed on Monday 11 April to remove barriers to the promotion of highly skilled women and to increase incentives to encourage women to return to the workforce after maternity leave.

These were two of many commitments made on that day by research funders, leaders and employers who came together for the first time at the Women in Science and Engineering (WiSE) Summit in Parliament House, Canberra.

The Summit attended by the Hon Kate Ellis, Minister for Employment Participation and Childcare and for the Status of Women, discussed how to keep women in science and encourage more young women into engineering in order to boost productivity and equity.

Importantly, the nation's leading research funders, the Australian Research Council (ARC) and the National Health and Medical Council (NHMRC), agreed to changes in how they assess research publications in the grant applications of those with interrupted careers. The ARC committed to extending the period taken into account. The NHMRC this year will consider any nominated five years of an applicant's career rather than simply the previous five years. It has also agreed to monitor gender issues in general.

Further commitments to action made at the Summit include:

- The Australian Technology Network universities have set a performance target that the number of female staff who teach science, engineering and technology (STE) subjects will be in the same proportion as women employed in STE industries (about 16 per cent);
- IBM, a significant employer of scientists and technologists, has agreed to support CSIRO's Science in Schools program;
- The Federation of Australian Scientific and Technological Societies (FASTS), Australia's peak body for science and technology, has undertaken to work with scientific societies Australia-wide to conduct an audit of practices with a view to increasing the participation of women through best practice;
- FASTS will also gather examples of existing practices, programs and policies which have been successful and develop a toolkit to guide the science and technology sector;
- All research leaders agreed to take the UN Women's Empowerment Principles back to their organisations with a view to adopting them;
- Other CSIRO commitments include:
 - To increase the number of Payne-Scott awards—designed to bring women back to the workforce after maternity leave;
 - To report on gender participation within the CSIRO; and
 - To remove cultural barriers, and build greater trust and respect within the CSIRO.

WiSE detailed communiqué

More than 150 senior managers from corporations, government, research institutions, research funders, universities, and non-governmental organisations held a *Women in Science & Engineering Summit* at Parliament House in Canberra on Monday 11 April 2011. They discussed the barriers for women to employment in science, technology and engineering-related occupations—and how to remove them. Several commitments to action were made on behalf of influential organisations, such as the National Health and Medical Research Council and the universities of the Australian Technology Network.

The Summit was organised by Science & Technology Australia (the organisation formerly known as FASTS) under the auspices of UN Women Australia and the Australian National Committee for UNESCO.

It was addressed initially by Dr Cathy Foley, President of Science & Technology Australia, Australia's peak body for the sector. Dr Foley provided information which graphically illustrated the two most significant issues— the general lack of women in mathematics, physics and engineering-related positions, and the steep decline after the age of 30 of women employed in all occupations involving science and technology. The latter problem leads to a serious lack of women at the senior, decision-making levels of science and engineering.

The Summit participants divided into three “roundtable” groups—on improving the workplace; on attracting students to the physical sciences, engineering and mathematics; and on changing the system. These groups looked at the issues in detail and put forward suggestions, recommendations, and commitments which were reported back to the full body at the end of the day. The Minister for Employment Participation and Minister for Child Care, the Hon Kate Ellis MP, attended the roundtable on changing the system.

The following general commitments were made to the Summit on behalf of represented organisations:

- for applicants whose careers have been interrupted, the **National Health and Medical Research Council (NHMRC)** committed to considering any nominated five years rather than the immediate previous five years when assessing research publication records for grants. The **NHMRC** also committed to:
 - long term monitoring and addressing gender issues with research institutes;
- for applicants whose careers have been interrupted, the **Australian Research Council (ARC)** committed to extending the normal period taken into account when assessing research publication records for grants. The **ARC** also committed to:
 - considering the inclusion of outreach activities in assessment for grants;
 - sharing examples of the benefits of increasing the participation of women in research;
- **CSIRO**, Australia's largest employer of researchers, committed to removing barriers to the promotion of highly skilled women, and boosting incentives to encourage women to return to the workforce after maternity leave. In practice, this means:
 - increasing the number of Payne-Scott awards—grants designed to bring women back to the workforce after childbirth;
 - removing cultural barriers, and building greater trust and respect for women within the organisation; and
 - reporting publicly on gender participation;

- the **Australian Technology Network** of universities committed to reviewing performance targets and time frames for the number of female academics employed at all levels in science, technology, and engineering (STE) with a view to meeting or exceeding the proportion of women employed across STE industries nationally;
- **IBM**, a significant employer of scientists and technologists, committed to supporting CSIRO's Science in Schools program;
- **Science & Technology Australia (STA)**, Australia's peak body for science and technology, committed to working with scientific societies across the nation to conduct audits of practices with a view to increasing the participation of women through best practice. **STA** also committed to:
 - gathering examples of existing practices, programs and policies which have been successful in increasing the participation of women;
 - developing a toolkit to guide the science and technology sector;
- the **Australian Institute of Marine Sciences** committed to collecting and publishing data on issues relating to childcare in rural and regional Australia;
- the **Bureau of Meteorology (BoM)** committed to improving childcare and parent resources. **BoM** also committed to:
 - using its website—the most visited government website—to raise awareness of gender issues;
- all research leaders committed to taking the UN Women's Empowerment Principles back to their home organisations and supporting their adoption; and
- the whole Summit committed to meeting again to review progress.

Roundtable 1: Improving the workplace – gender equity in action

Facilitator: Ms Geraldine Chin Moody, Board Member, UN Women Australia

The issues discussed during this roundtable included:

- the confidence of women in the workplace and how they cope with rejection;
- the differences between men and women with regard to networking, and when applying for jobs;
- gender-based expectations to do with responsibilities for child rearing and caring for the aged, and how these complicate balancing life and work;
- harassment and bullying of women in some work cultures;
- provision for childcare and breastfeeding in the workplace;
- the importance of having women on selection panels for jobs and promotion;
- provision of part-time work, flexibility of working hours and the option of working from home; and
- measuring productivity as something more than hours worked.

Suggestions for solutions to these workplace issues included:

- developing a business case for employing and supporting women, and for greater flexibility in the workplace;
- developing a toolkit of successful gender equity practices and policies and appropriate language;
- introducing mandatory requirements with respect to gender equity for funding support, and a system of reporting back to funding agencies on progress;
- introducing gender quotas on selection panels;
- providing women with (multiple) mentors, sponsors and career coaches;

- providing part-time work, flexibility in working hours and options of working from home;
- increasing the number of return-to-research fellowships for those whose careers have been interrupted, particularly by childbirth;
- providing breastfeeding rooms and flexible childcare facilities at or close to work—charged hourly and not daily;
- providing greater recognition and flexibility with regard to caring for elderly or sick family members;
- allowing and encouraging men to take on greater family responsibilities;
- holding key work meetings between 10 am and 2 pm to allow staff with family responsibilities to attend;
- providing women with leadership courses, and work experience in senior management;
- designating “women only” positions;
- removing gender biases from curriculums and textbooks; and
- measuring productivity not simply in terms of hours worked and papers published.

Roundtable 2: Attracting school and university students to the physical sciences, engineering and maths

Facilitator: Ms Donelle Wheeler, Board Member, UN Women Australia

The issues discussed during this roundtable included:

- concern that teachers and career advisers often discourage students from studying science and engineering by suggesting they are too hard and do not pay well;
- concern that many universities no longer require any science subjects in teaching degrees such as the Diploma of Education;
- concern over a lack of collaboration between schools and industry, and therefore the lack of knowledge of industry in schools and vice versa;
- concern over government cutbacks to science-based education projects, such as the *Primary Connections* program run by the Australian Academy of Science;
- the need to boost the image of researchers generally, and to downplay stereotypes;
- the need to educate primary school teachers about science, recognising that every young child is a potential scientist;
- the need for more hands-on programs, both for teachers and students, showing science in action and putting it in context;
- the need to stress the interest and excitement of science particularly to women; and
- the need for mentors and champions for senior high school and university science and engineering students.

Suggestions for solutions to these education issues included:

- urging governments to acknowledge the fundamental role of science, engineering and mathematics to the economy;
- establishing a government-coordinated body to collate and disseminate science education initiatives;
- encouraging companies to create a better image for the science and mathematics-based professions;
- asking that Federal funding be provided for mentoring and championing young women in science and engineering at university level;
- securing government and corporate funding for the Australian Academy of Science programs for primary and secondary school students;

- encouraging the Federal, state, and territory governments to take steps to reinvigorate the teaching of science;
- asking the **Australian Curriculum, Assessment and Reporting Authority (ACARA)** to review science curriculum material urgently and ensure that it displays gender equity, and addresses the interests of both girls and boys; and
- asking **ACARA** to concentrate on contextualising science subjects and to make the examples and applications used interesting to both boys and girls.

Roundtable 3: Changing the system—leaders of science and engineering agencies

Facilitator: Ms Anna-Maria Arabia, CEO, STA

The issues discussed during this roundtable included:

- job security for women in science and engineering;
- availability of good quality childcare and other resources for parents, particularly in rural and regional Australia;
- the importance of mentors, role models and women teachers for young women in science;
- the degree to which school students are exposed to science and scientists;
- the need to engage men in encouraging diversity in the workplace;
- the need to collect information on gender and diversity in the workplace and in governance;
- recognising science outreach activities in assessments for promotion;
- the problems of harassment and bullying in the workplace;
- ways to encourage self-confidence and leadership as part of research training;
- ways to address the low level of mathematics education in primary schools; and
- how losing women at mid-career and senior levels leads to a loss of creativity and productivity in science and engineering workplaces.

In addition to the commitments detailed in the first section of this communiqué, suggestions for solutions to these the above issues included:

- insisting on gender balance in all organisation committees, leading to the co-opting of junior women, who thereby gained administrative experience;
- setting quotas for women at senior levels of companies and departments;
- establishing leadership programs for women;
- enlisting the help of social scientists to help change workplace culture;
- establishing forums where women in science and engineering can talk to each other outside the workplace and form networks; and
- boosting the number of women science teachers in schools and universities.

Next steps

The Summit demonstrated that there is an energy and willingness for change. In response, FASTS (now known as Science and Technology Australia) had committed to a program of activities over the rest of 2011 to maintain the momentum for change - utilising seed money from the Summit and additional sums to be sourced from sponsors.

Science and Technology Australia will create and promote toolkits to support increasing the participation of women in science and engineering, and subject to demand, convene a second *Women in Science & Engineering Summit* in April 2012 to allow organisations to report back, and to review progress.

Toolkits

STA will create a tool kit for distribution comprising:

1. A best-practice guide for managers – comprising the summit recommendations plus best practice harvested from organisations in Australia and abroad and some case studies showing it in action. The guide will be published and circulated to science organisations.

Subject to budget, the guide will also be presented at a series of workshops.

2. A practical guide for women scientists and engineers on:
 - i. A guide to developing gender/family friendly workplaces
 - ii. Balancing career and family – practical tips on how to make it work.

Subject to budget the guide will also be presented at a series of workshops paralleling the guide for scientists and engineers.

3. A brief guide to resources for encouraging school and tertiary students to stay in science/engineering – documenting the wide range of resources already available and filling in gaps such as facts and figures on employment opportunities, and role models.