

Who's studying and working in computing?

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*Workshop at NZ Computer Science Research Student
Conference, 2010, Victoria University, Wellington*

A decade of research

Wellington
'apprenticeship'
and 'tertiary'
20 women
Qualitative

National
online
survey
301 M/F
Quantitative

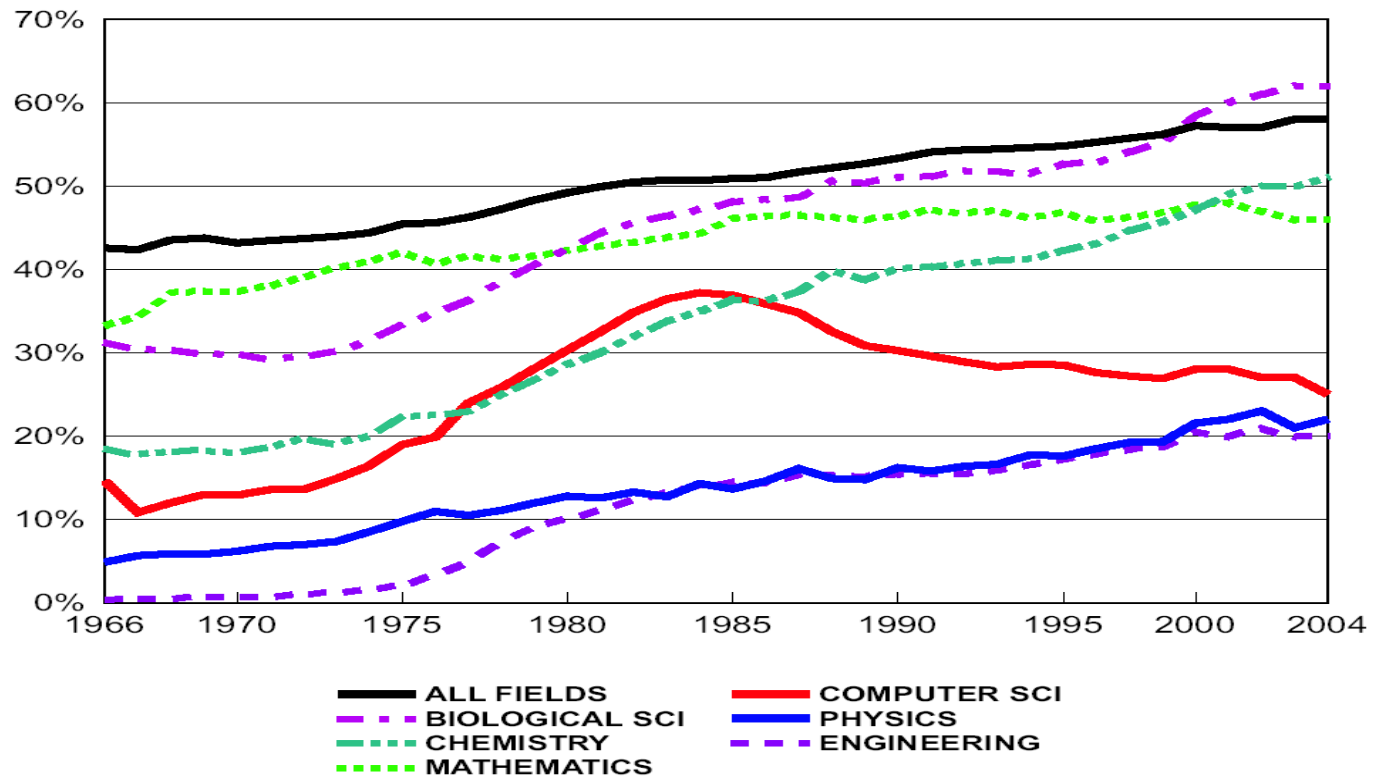
Regional
Auckland Wellington
Christchurch
Dunedin
70 women
Qualitative

NZ/UK
Cross-national
Mixed method

NZ/Japan/Malaysia
Cross-national
Qualitative

WOMEN IN SELECTED FIELDS

Bachelor's Degrees, 1966-2004



Source: National Center for Education Statistics. Data for Academic Year 1999 were not available. Compiled by AIP Statistical Research Center.

51

Percent of professional occupations in the 2006 U.S. workforce held by women

26

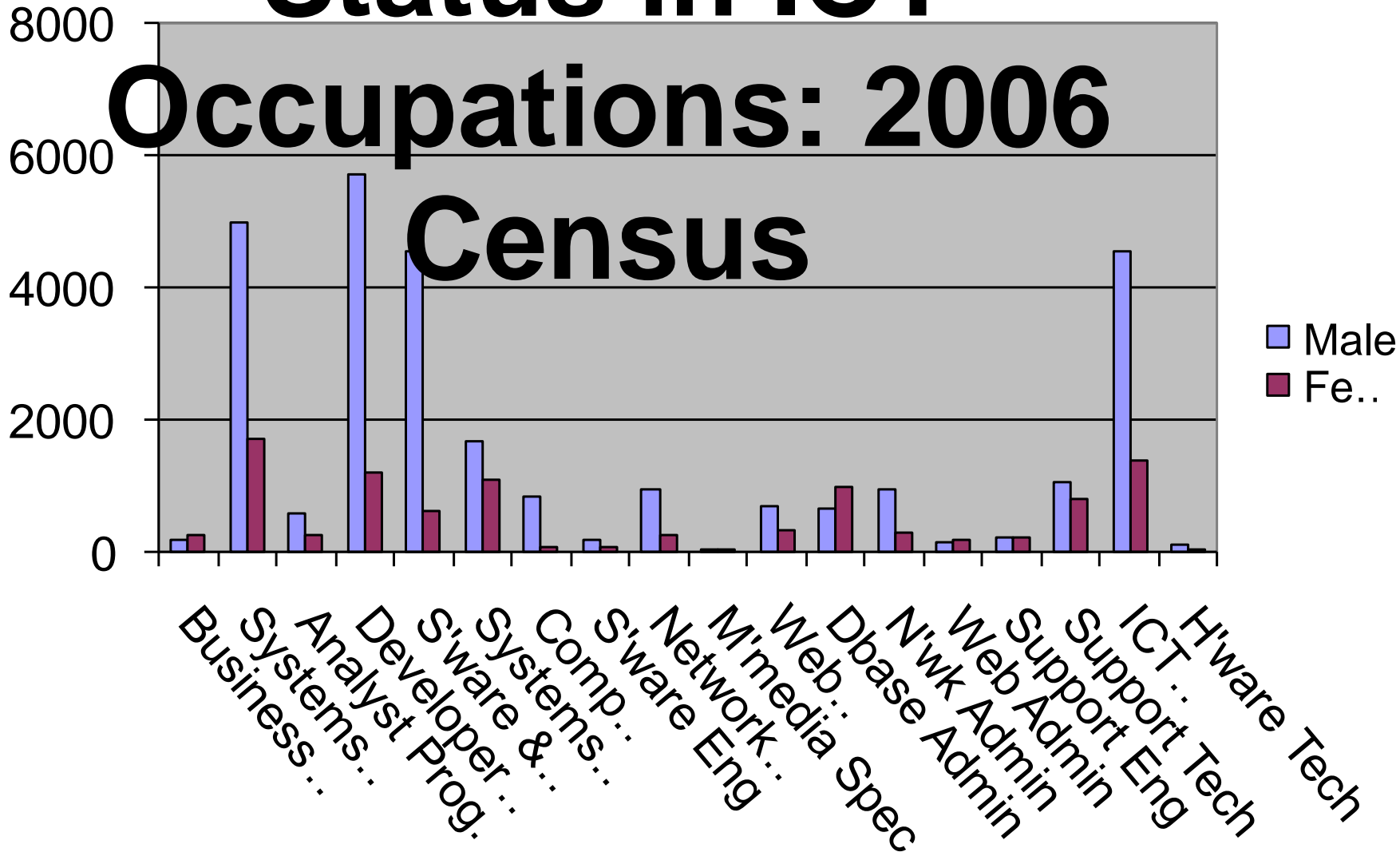
Percent of professional IT-related occupations in the 2006 U.S. workforce held by women

13

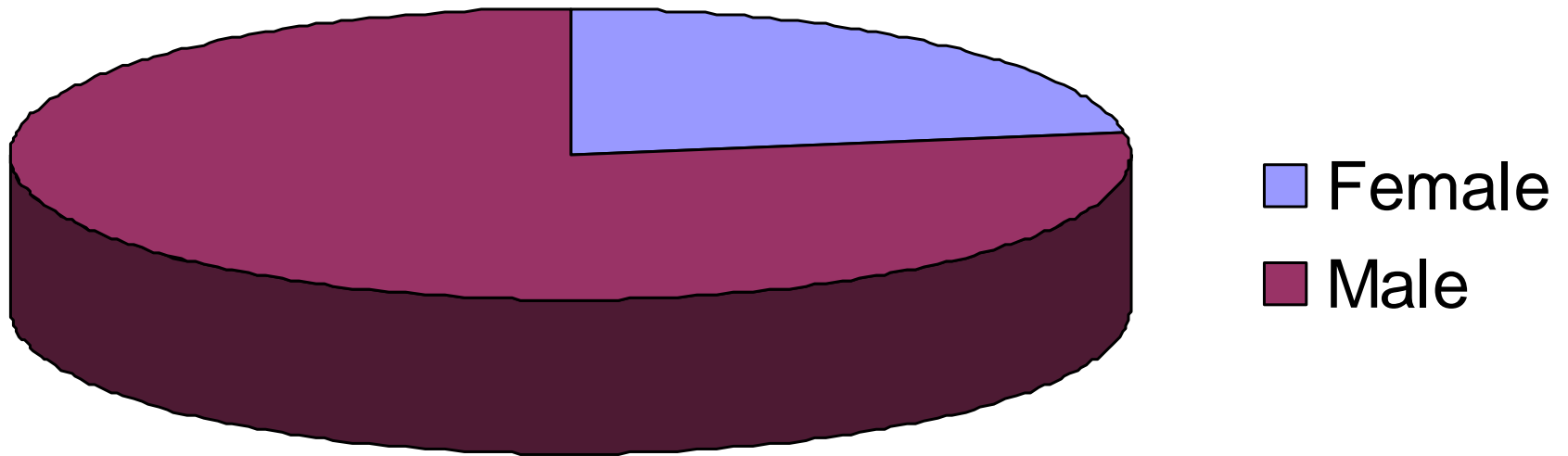
Percent of corporate officer positions at Fortune 500 technology companies held by women

Sex and Full-time Status in ICT

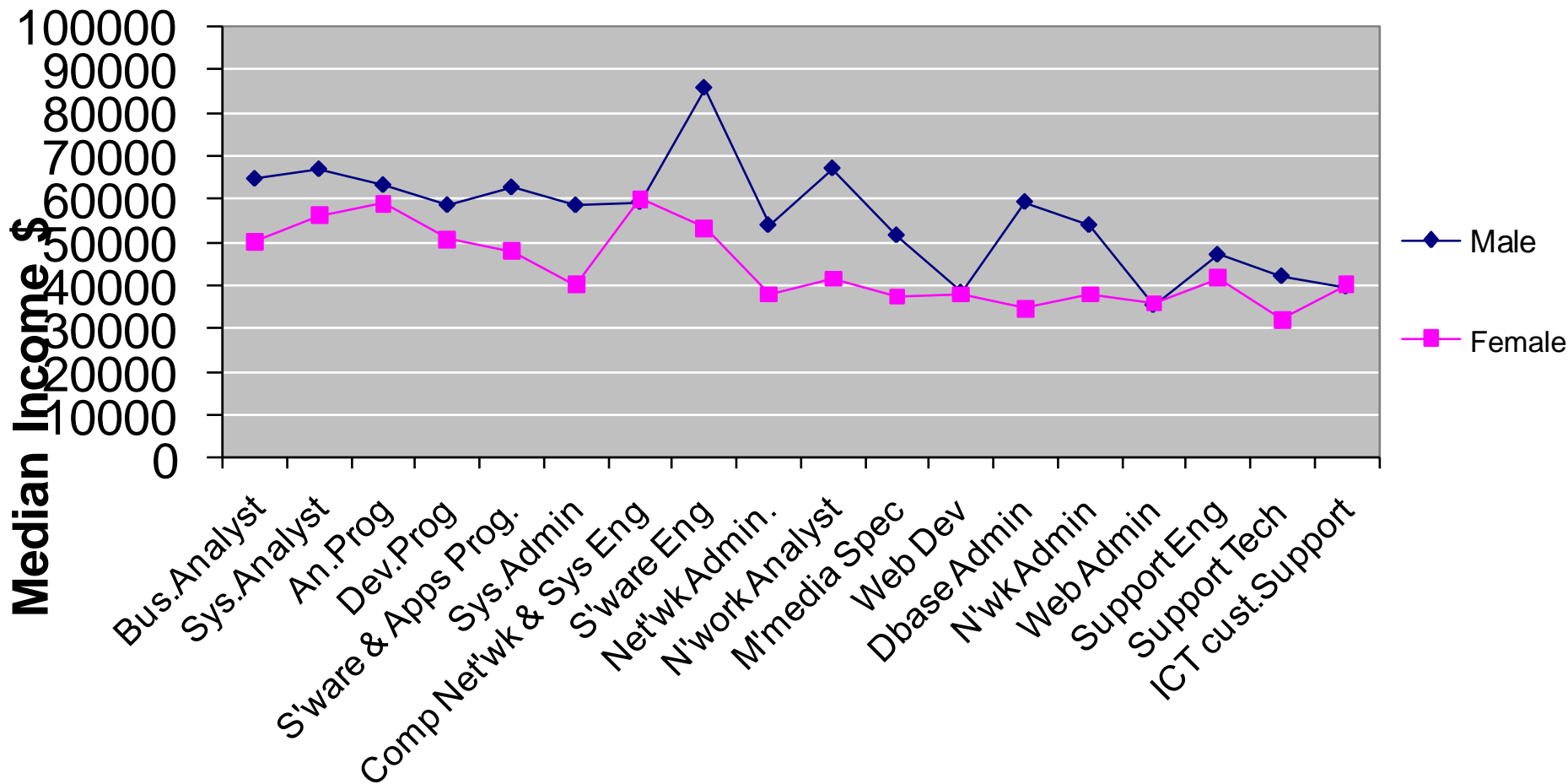
Occupations: 2006 Census



Full-time ICT Employment NZ Census 2006



Median Total Personal Income x Sex for ICT Occupations: 2006 Census



Income from wages, salary & self-employment constitute 93.6% of the average weekly income for people in paid employment

Myths and Issues

1. Men are mathematically superior & innately better suited to STEM fields than women.
2. Girls lack interest in STEM.
3. Issues with STEM workplace
 - Worklife balance
 - Bias
 - Attributes of computing sub-culture

Covert bias

- Biases change but ...
 - Women with children less likely to gain academic tenure than men with children
 - Both men and women in industry feel having a family hinders success at work
 - Women more likely to report they are the primary caregiver with partner working full-time.
 - Women earn less than men
 - Men more successful at negotiation than women
- Social and environmental factors contribute to underrepresentation of women –
Japanese study (Crump & Crump)

Uni initiatives

- Carnegie Mellon Uni <http://women.cs.cmu.edu/>
 - 5-year programme with a focus on culture to bring more women in. Increased fivefold from 7% to 38%
 - Little to do with gender; a lot to do with environment and culture
- Victoria University's comp.sci dept (Brown, 1994; Gale, et al, 1997).
 - Go Girl – Go IT in Auckland

Initiatives

- Understand your system and know your numbers; you can't improve what you don't measure – example PaEE project.
- Blessing, encouragement, commitment by organisational leaders to reveal and redress bias. Recruitment/HR people important.

- Broaden the culture –
 - recognise strength of multi-disciplinary fields
 - Diffuse stereotypes
 - Recognise need for work-life balance – men and women
 - Flexi-work times, places
 -
- Catalyze and support a women's community
 - mentoring
 - Networking (events should suit all groups)

Finally

- Organisational and occupational sub-cultures influenced by national culture.
- Cultures are not static
 - Change will come (slowly) – example Japan
- Take a hard look at the stereotypes and biases that pervade our culture.
- Changes in the socio-cultural learning and work environments can encourage more girls and women to enter technology fields in greater numbers.

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