



The Goldcorp Professorship for  
Women in Engineering at the  
University of British Columbia

# Women Leaders in Science – the Power to Influence

November 11, 2014

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Some **clarifications**:

Leadership is a  
behavior, not a title.

Women **Leaders** in Science –  
the Power to **Influence**

Influence or impact  
is not always  
measurable.

# The plan for today

- A bit about Me and my Context
- Emerging themes/thoughts on leadership
- The challenges
- Looking ahead (and why I feel optimistic)



# A bit about 'me':

teacher, researcher, wife, mom...



## Dr. Sheryl Staub-French

Associate Professor  
UBC Civil Engineering

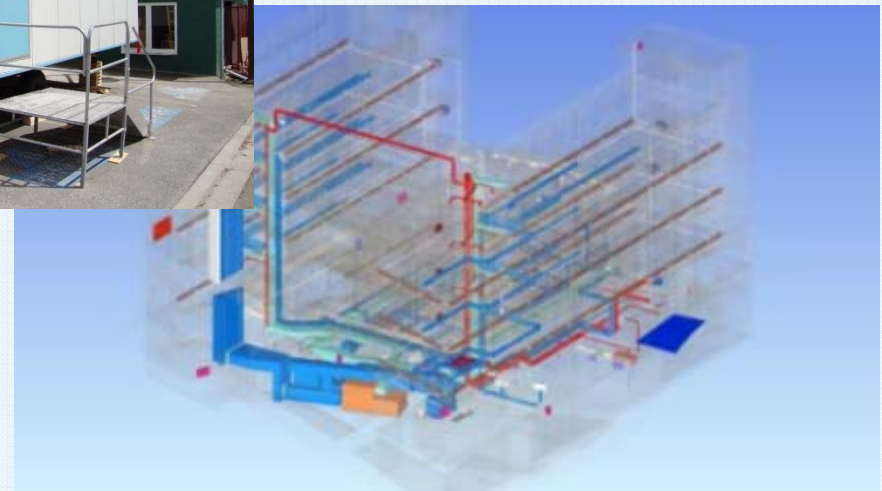
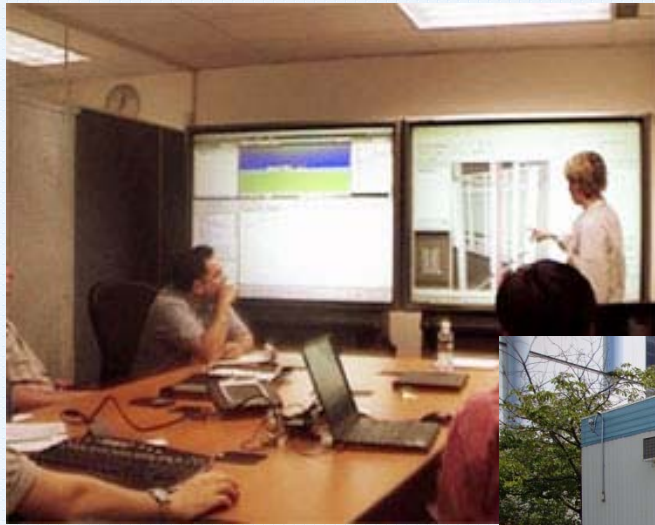


GOLDCORP Professor for  
Women in Engineering  
Director, **eng•cite**

[ssf@civil.ubc.ca](mailto:ssf@civil.ubc.ca)



# A bit about my 'work': delivering sustainable buildings & communities



Center for Interactive Research on Sustainability  
[cirs.ubc.ca](http://cirs.ubc.ca)

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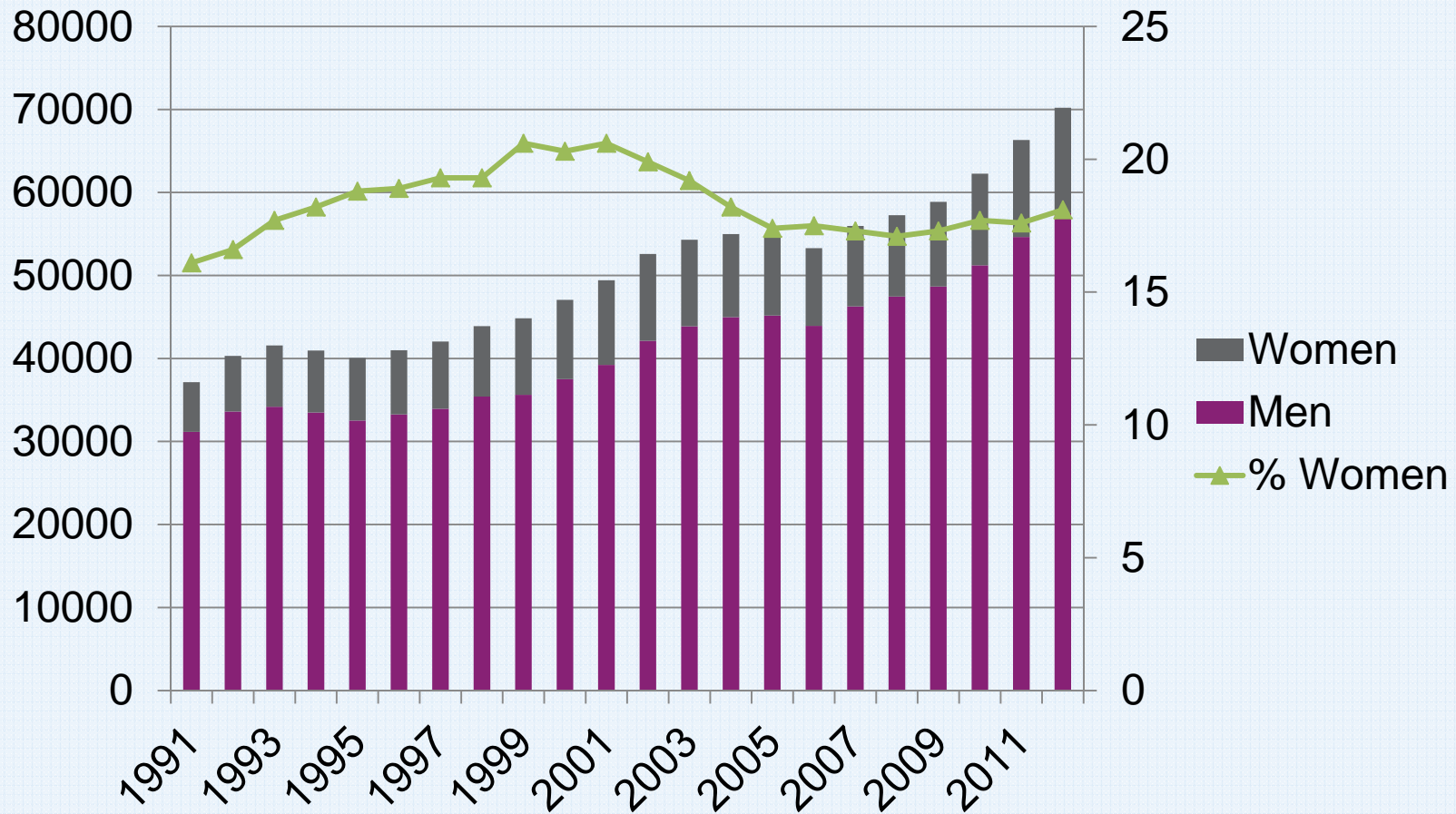
# A bit about my 'work context': engineering, academia, industry



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# A bit about my 'industry context': engineering, academia, industry



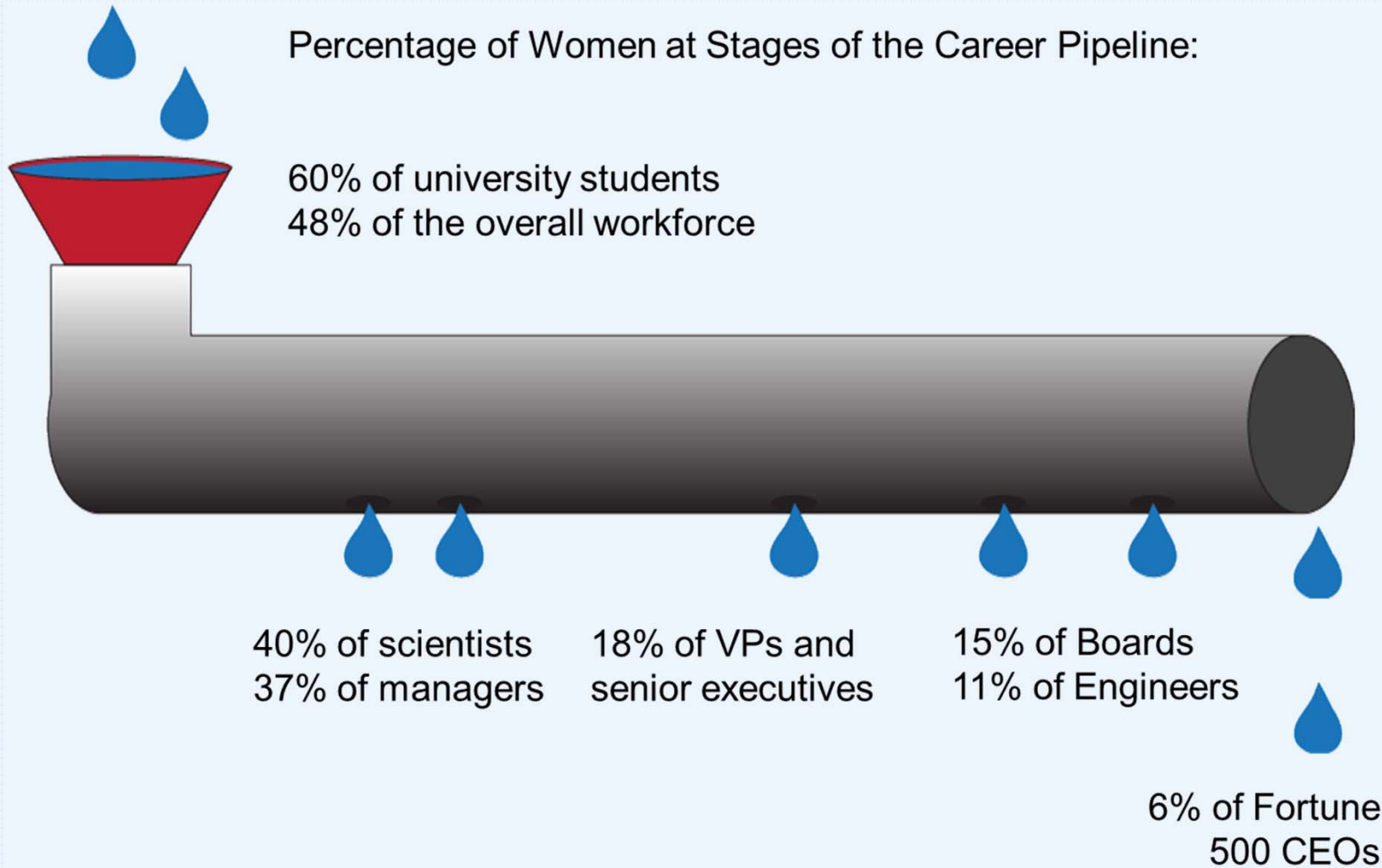
Engineers Canada 2012 Enrolment Report – Undergraduate



# A bit about my 'industry context':



## Female Talent Pool



Catalyst Research (2012)



The power to influence:

# My guiding principles

# The importance of being:

- Authentic (i.e., be yourself)
- Conscious (i.e., aware of your own privilege, bias)
- Present (i.e., show up)
- Collaborative (i.e., find others)
- Values-based (i.e., define success for yourself)



The power to influence:

# Challenges

# Unconscious (Implicit) Bias

To be seen as equally “**competent**” by reviewers, female researchers need to publish:

**3 more**  
articles in  
*Nature or*  
*Science*



**OR**

**20 more**  
articles in  
specialist  
journals



than male applicants when applying for a medical fellowship.<sup>5</sup>

5. Wennerås, C. & Wold, A. (1997). Nepotism and sexism in peer-review. *Nature*, 387, 341-343.



# Unconscious (Implicit) Bias

“We would have to see her job talk”

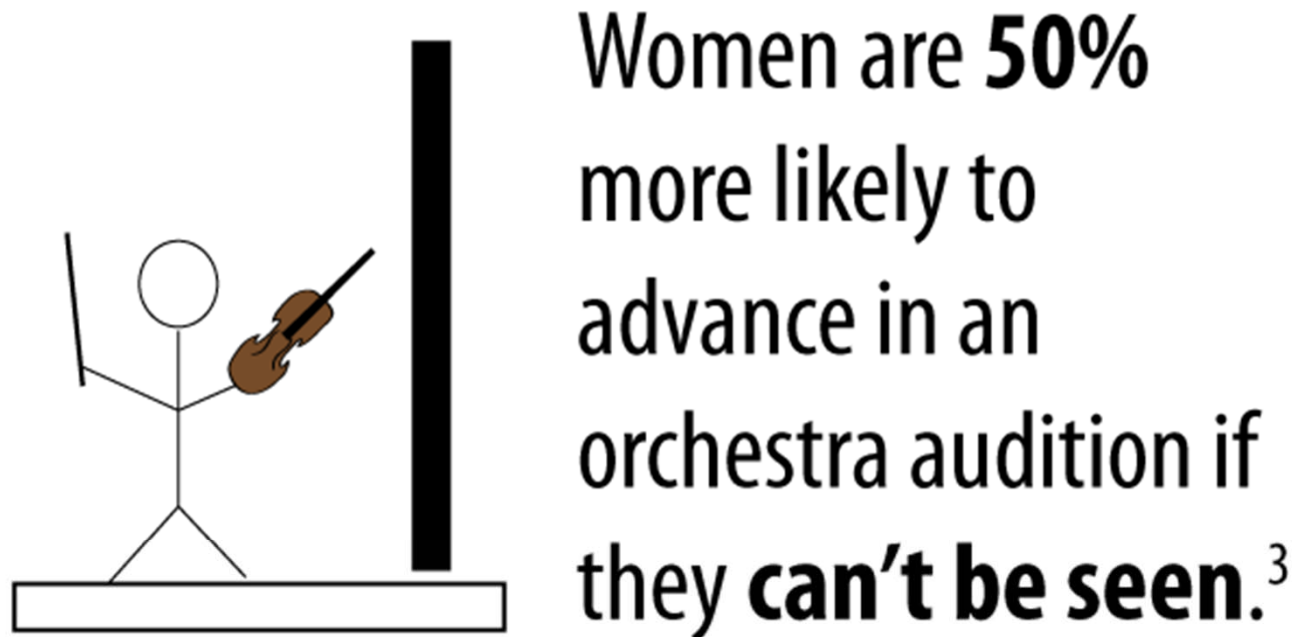
“I would need to see evidence that she had gotten these grants and publications on her own”

Psychology professors reviewing identical CVs were **4x** more likely to write **cautionary comments** for female applicants<sup>4</sup>.

4. Steinpreis, R., Andres, K. & Ritzke, D. (1999). The impact of gender on the review of the curricula vitae of job applicants and tenure candidates: A national empirical study. *Sex Roles*, 41(7/8), 509-528.



# Unconscious (Implicit) Bias



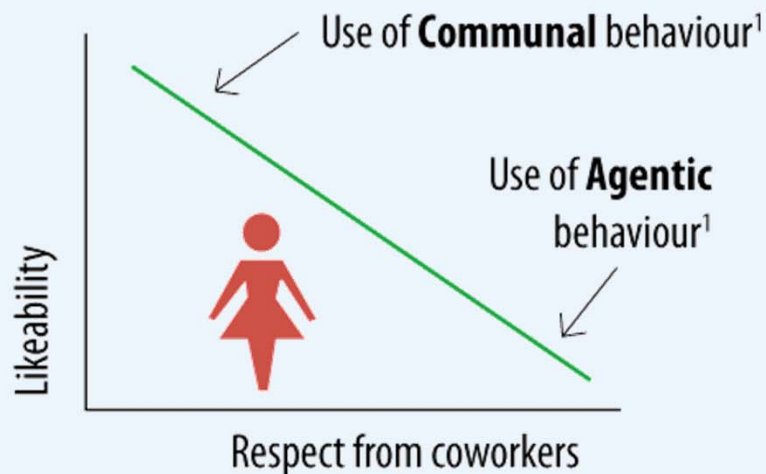
3. Goldin, C. & Rouse, C. (2000). Orchestrating impartiality: The impact of “blind” auditions on female musicians. *The American Economic Review*, 90(4), 715-741.





# 'Agentic' vs 'Communal' Behaviour

## Women in Leadership Positions



Both actions carry a **risk of being disqualified** from a job application.<sup>1</sup>

## Observed Effects of Women Using Forced Agentic Behaviour

- ↑ Increase ♀'s **competence scores** to equally agentic men<sup>1</sup>
- ↓ Seem more **threatening**; less **persuasive** & less **influential**<sup>2</sup>
- ↓ Decrease **compliance** of workers for ♀ managers<sup>2</sup>

If women need to manage the impressions they give off, it can lead to **stress, anxiety and reduced task performance**.<sup>2,3</sup>



# Stereotype threat

- Contexts can cue concerns that one might confirm a negative stereotype (Steele & Aronson, 1995)

Stereotype Threat



Poor Performance

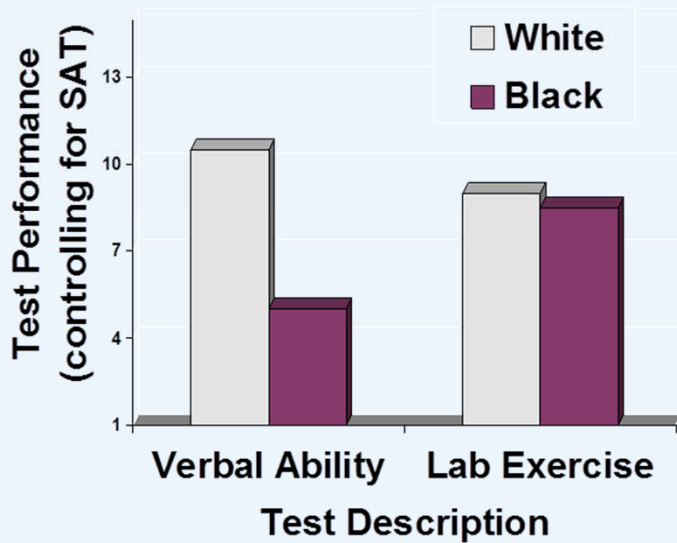




# Stereotype threat

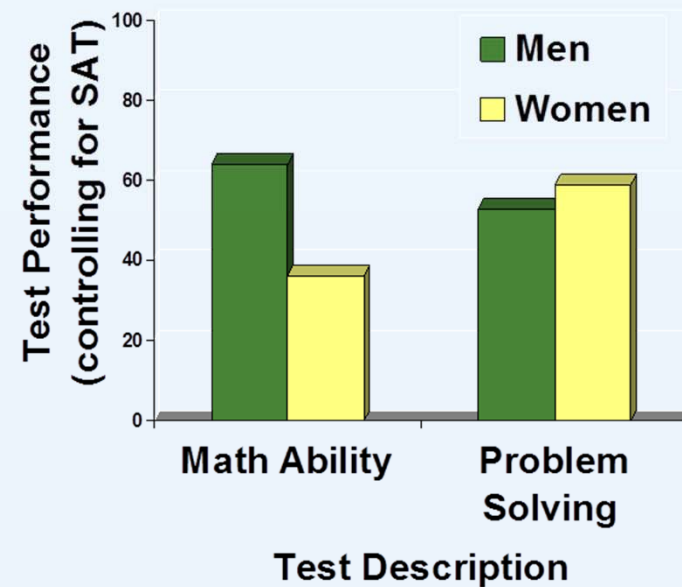
- Test performance can be affected by how the task is described

### Racial Differences in Verbal Performance



Steele & Aronson (1995)

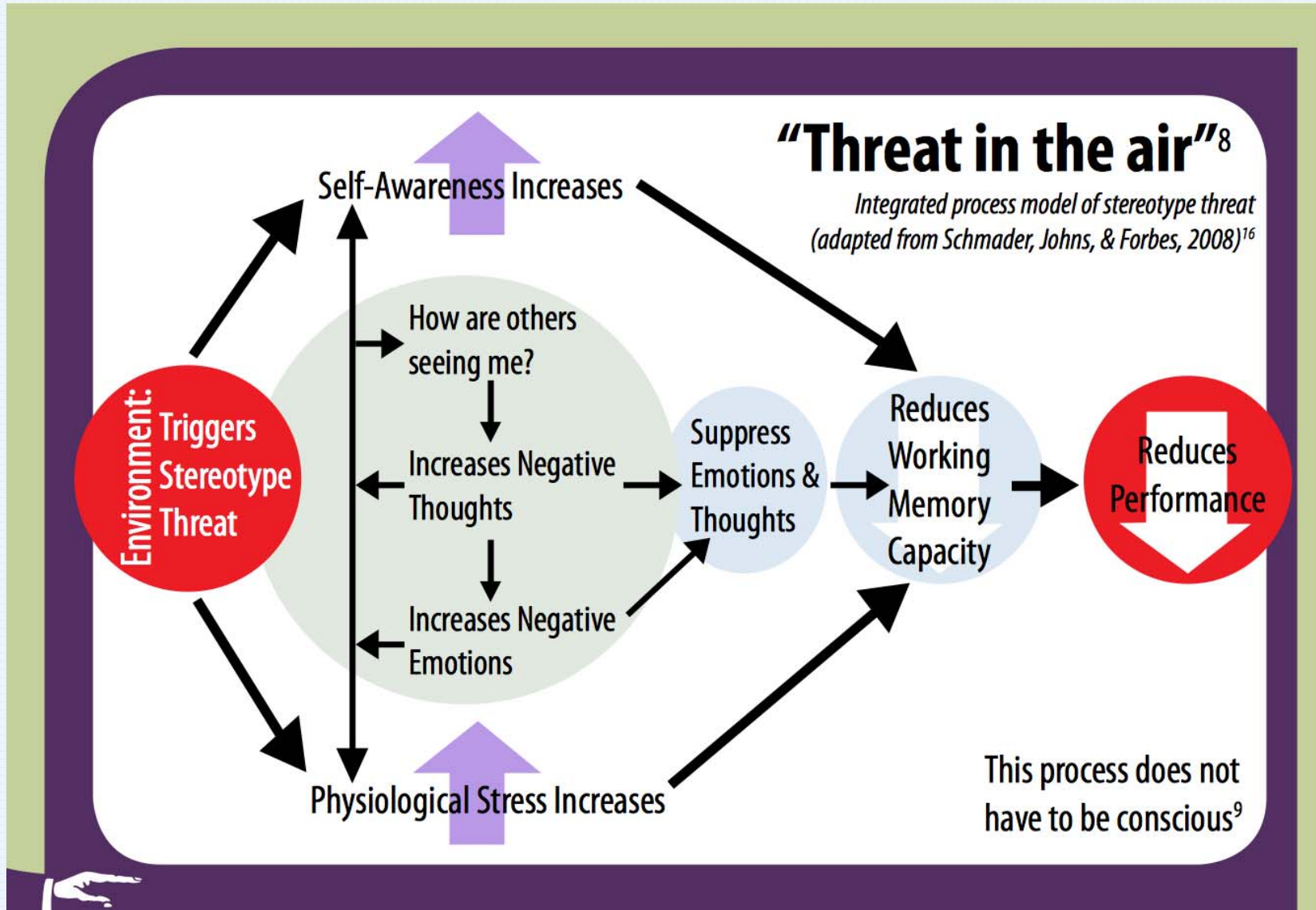
### Gender Differences in Math Performance



Johns, Schmader & Martens (2005)



# Stereotype threat





# The (ubiquitous) messages...



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The power to influence:

# My guiding principles



# The importance of being:

- ❑ **Authentic** (i.e., be yourself)
  - Helps me to be happier, more effective
- ❑ **Conscious** (i.e., aware of your own privilege, bias)
  - Helps me to be more compassionate and sensitive
- ❑ **Present** (i.e., show up)
  - Has created new opportunities for me
- ❑ **Collaborative** (i.e., find others)
  - Has brought me a greater sense of belonging
- ❑ **Values-based** (i.e., define success for yourself)
  - Helps me to prioritize and 'succeed' on my own terms

→ Collectively has helped me to have more *impact*

→ Note that this is all a *work in progress*...





The power to influence:

# Looking ahead...

## and why I am optimistic...



# The Data

Business Case for Diversity - Summary<sup>1</sup>



- ❑ Access of employers to a broader **talent pool**
- ❑ Increased **innovation potential and market development**
- ❑ Stronger **financial performance**
- ❑ Improved **governance**
- ❑ Greater **return on human resource investment**

<sup>1</sup> Emerson, C. (2010), Increasing Women in SETT, The Business Case, Canadian Center for Women in Science Engineering, Trades and Technology, 12 pp., [www.ccwestt.org](http://www.ccwestt.org)

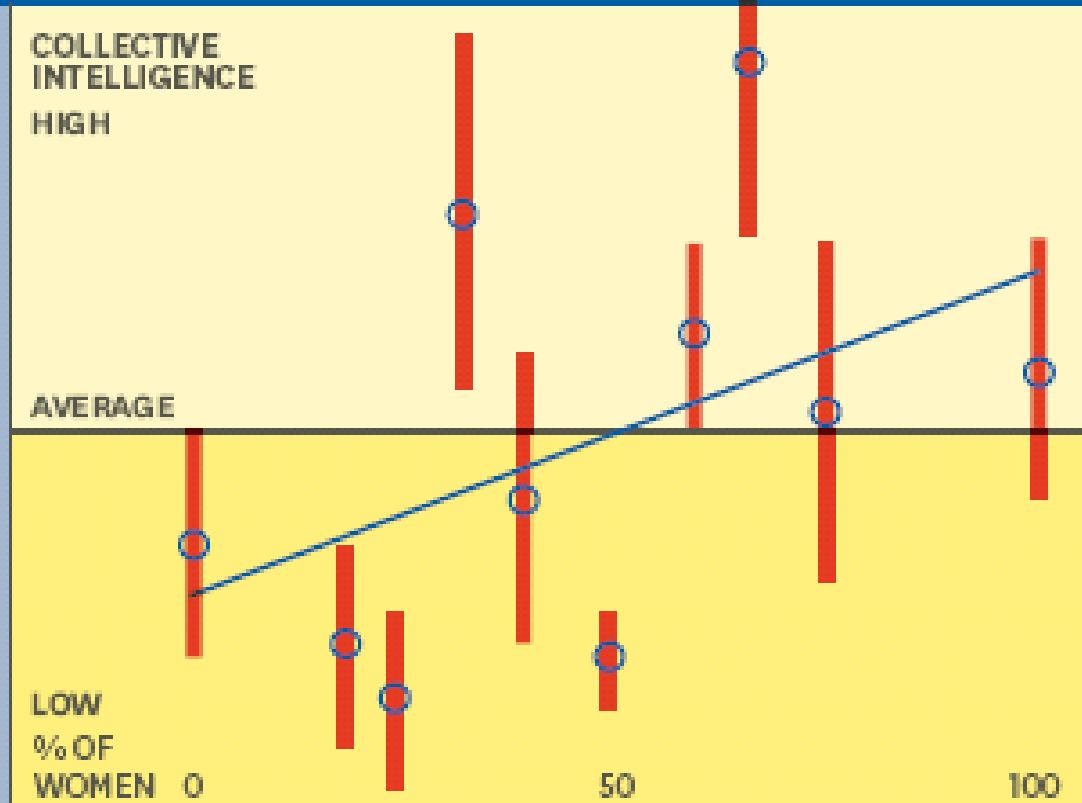


# The Data

Women make teams smarter

## The Female Factor

The chart plots the collective intelligence scores of the 192 teams in the study against the percentage of women those teams contained. The red bars indicate the range of scores in the group of teams at each level, and the blue circles, the average. Teams with more women tended to fall above the average; teams with more men tended to fall below it.



Woolley, A. & Malone, R. 2011. What Makes a Team Smarter? More Women. *Harvard Business Review*, 89(6): 32-33.

Thomas, D.A. & Ely, R.J. 1996. Making Differences Matter: A New Paradigm for Managing Diversity. *Harvard Business Review*, 74(5): 79-91.

Anacona, D.G. & Caldwell, D.F. 1992. Demography and Design: Predictors of New Product Team Performance. *Organization Science*, 3(3): 321-341.



# The Data

## The Province

It starts here.

Who are the (World Cup) people in your neighbourhood?  
A gallery of 32 local fans



- NEWS
- SPORTS
- ENTERTAINMENT
- OPINION
- BUSINESS
- HEALTH
- LIFE
- TECHNOLOGY
- TRAVEL
- CAREERS
- DRIVING
- HOMES
- CLASSIFIEDS

### Dads who do chores help daughters grow up with broader career goals (with video)

BY IAN AUSTIN, THE PROVINCE JUNE 4, 2014

Recommend 222 Tweet 4 +1 14 Pin it 1 Comment 0 ShareThis

STORY PHOTOS (1)

#### Dads who do chores bolster daughters' aspirations

## Dads who do chores bolster daughters' aspirations

May 2014



a place of mind  
THE UNIVERSITY OF BRITISH COLUMBIA

0:03 / 1:40

Fathers who help with household chores are more likely to raise daughters who aspire to less traditional, and potentially higher paying, careers, a new University of B.C. study says.

Fathers who help out around the house raise less traditional daughters, a University of B.C. study has found.

MORE ON THIS STORY

— How families in fa

PLACE AN AD



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# The emerging trends

- Increasing % of women enrolling:
  - 29% in engineering at UBC
  - 25% in engineering at Waterloo
  - 56% in engineering at Harvey Mudd
  
- Increased focus on women in STEM
  - Engineers Canada, 30% by 2030
  - UBC, goal of 50% women in 5 years



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## More opportunities for youth

- ❑ UBC Geering up
- ❑ Let's talk Science
- ❑ And many others...



# Young leaders of today

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# Young leaders of today





# My kids







**Thank You**

**Questions?**



# References: ww



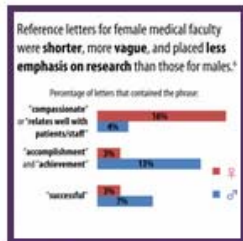
» Home » Gender Diversity 101

## Gender Diversity 101

WWEST is currently producing short reports on factors that impact women in science, engineering and technology.

These white papers are available for co-branding. Learn more [here](#).

### Current white papers:



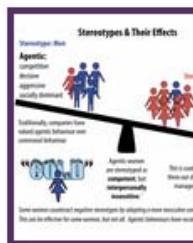
Unconscious Bias



The Business Case for Gender Diversity



Mentoring Work



Gendered Language & Stereotypes in Hiring Committees

## Unconscious Bias

Unconscious bias refers to the assumptions and conclusions we jump to without thinking.<sup>1</sup>

An example might be assuming that an older person walking with a child is their grandparent. These biases do not indicate hostility towards certain groups; they reflect how the individual has been socialized.

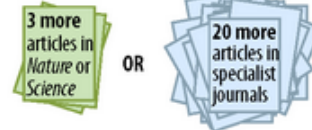
Several studies demonstrate the impact unconscious bias can have on the hiring process, particularly for women.

These biases may not be intentional but their impact is severe. The effects of unconscious bias will not be overcome by maintaining our current efforts to recruit and retain more women.<sup>2</sup>

To reduce unconscious bias in hiring, committees and individuals need to be educated about its existence and effects in academia and industry.

Online tools such as the Harvard Implicit Association Test can help identify an individual's unconscious biases. Sharing research and becoming aware of your organisation's hiring tendencies can also help reduce unconscious discrimination.

To be seen as equally "competent" by reviewers, female researchers need to publish:



than male applicants when applying for a medical fellowship.<sup>3</sup>

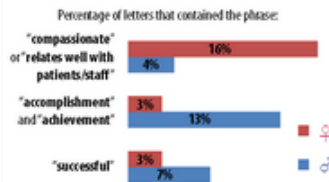
"We would have to see her job talk"



"I would need to see evidence that she had gotten these grants and publications on her own"

Psychology professors reviewing identical CVs were 4x more likely to write **cautionary comments** for female applicants.<sup>4</sup>

Reference letters for female medical faculty were **shorter, more vague, and placed less emphasis on research** than those for males.<sup>6</sup>

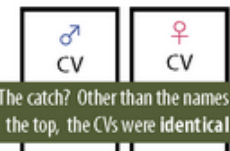


The average letter length for women was 227 words, compared to 253 words for men.<sup>6</sup>

US science professors were asked to evaluate a CV for a **lab manager**.<sup>2</sup>



The male candidate was offered a **higher salary**...



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA