



Chair for Women in
Science and Engineering
BC and Yukon Region



Engineering

Lead Sponsors:



WorleyParsons
resources & energy

Teck



Stantec

Dr. Ken Spencer

Henry F. Man



Westcoast Women in
Engineering, Science
& Technology

Leadership

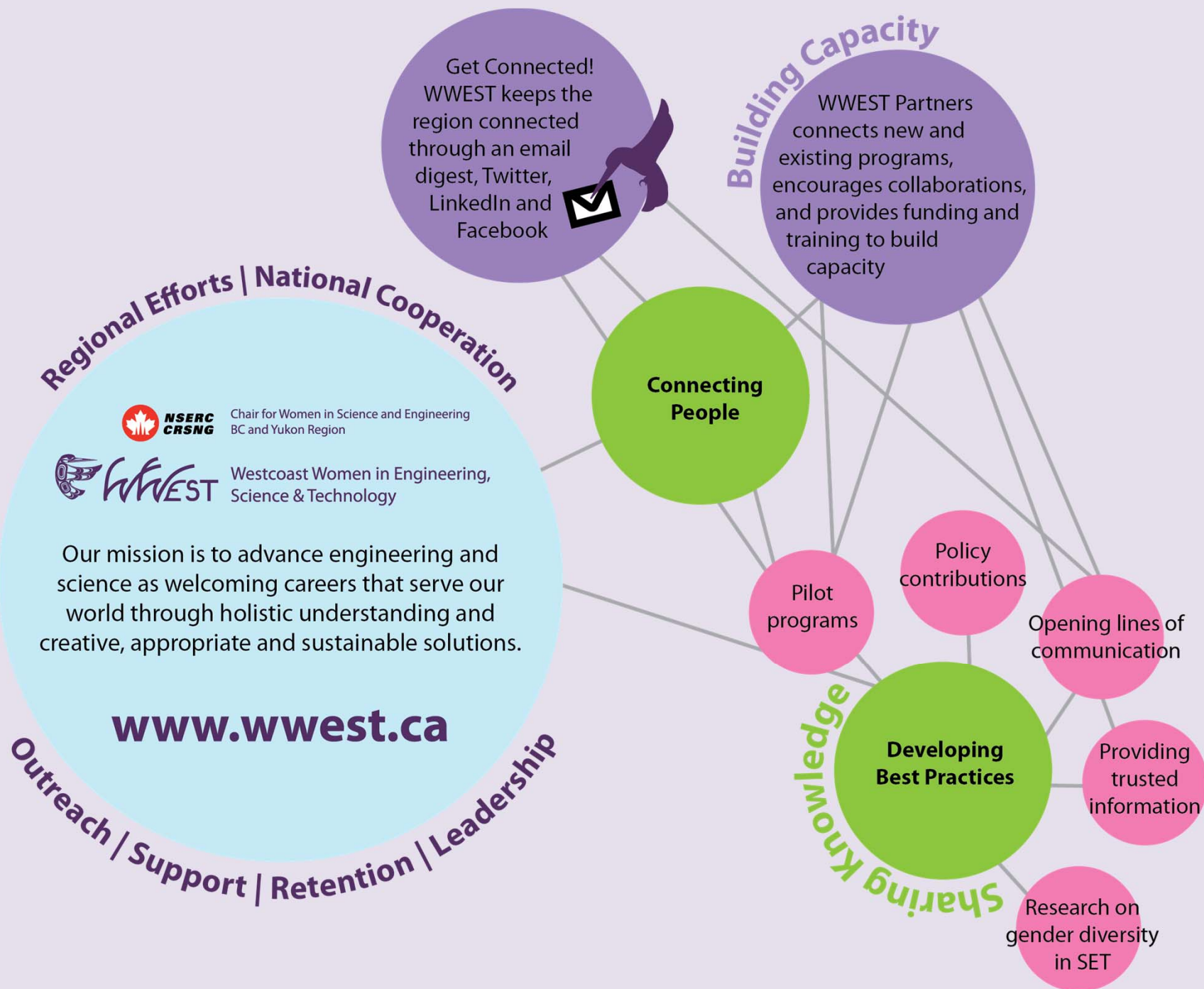
June 2, 2015

Whitehorse, Yukon



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA



- Washroom
- Emergency exit
- Fire procedures
- Confidentiality & safe space

Lacia Kinnear



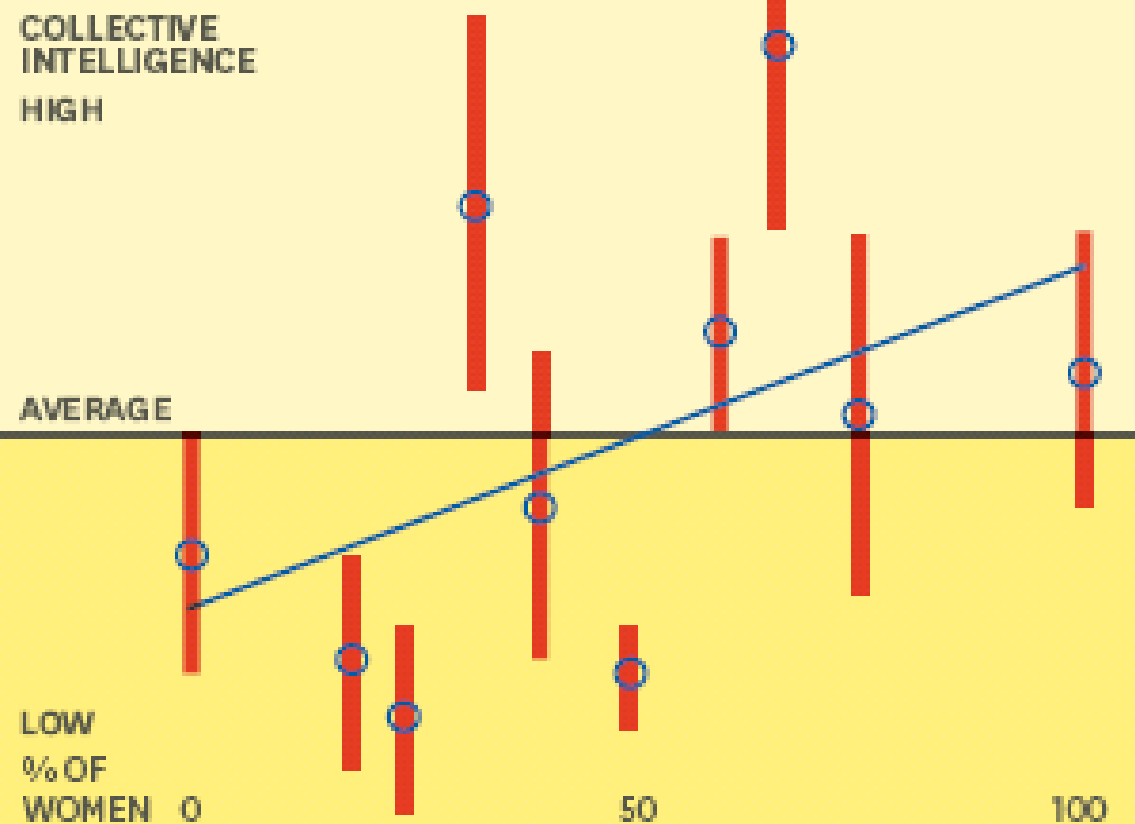
Business Case Summary¹

- 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**

¹ 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

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



Increase Innovation



Diverse groups breed innovation

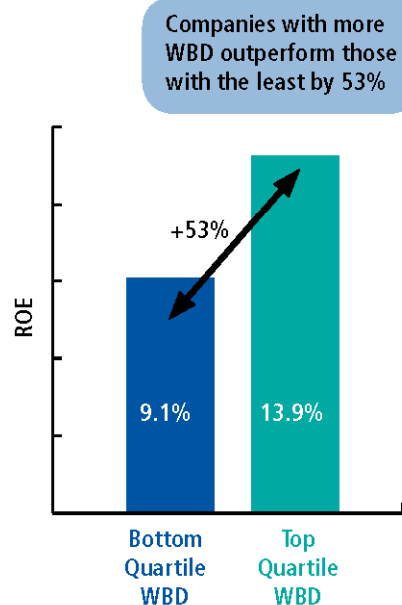


Financial Performance

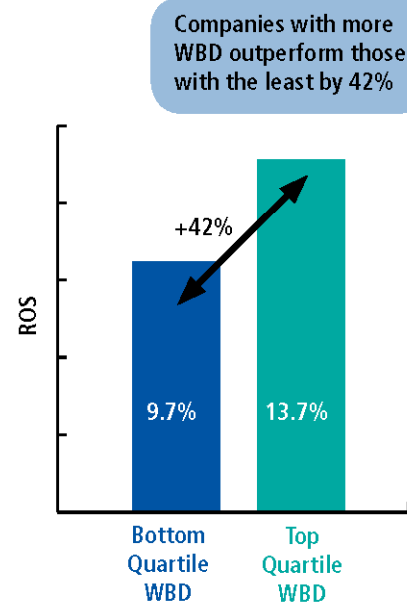
Women Board Directors (WBD) Align With Strong Performance at *Fortune* 500 Companies¹

Financial measures excel where women serve²

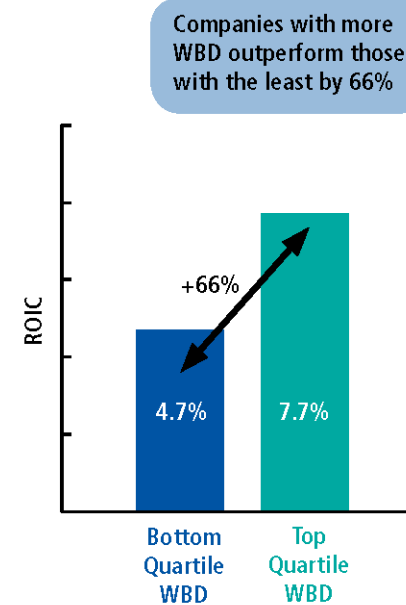
Return on Equity³ by Women's Representation on the Board



Return on Sales⁴ by Women's Representation on the Board



Return on Invested Capital⁵ by Women's Representation on the Board



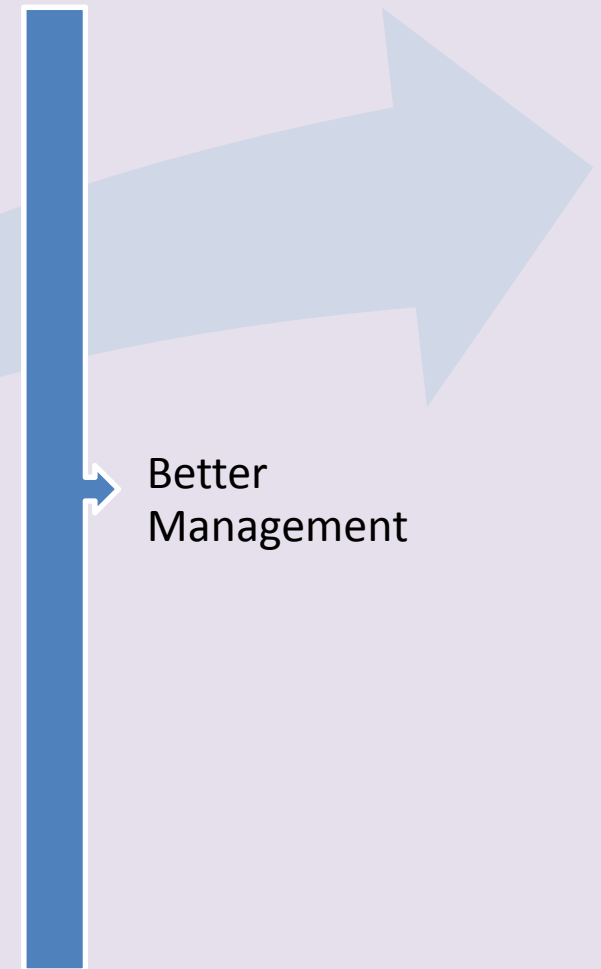


Better Management

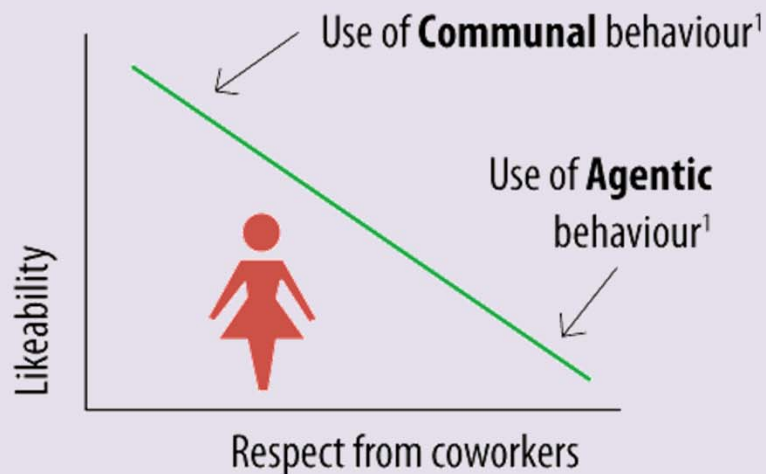
Conference Board of Canada:

Boards with more than two or three women have stronger practices in:

- Regular reviews of non-financial performance
- Measurement and implementation of corporate strategies
- Attention to audit and risk oversight and control
- Presence of conflict of interest guidelines and codes of conduct
- Effective two-way communication with stakeholders
- Consideration of measures of innovation and of social and community responsibility



Women in Leadership Positions



Both actions carry a **risk of being disqualified** from a job application.¹

Observed Effects of Women Using Forced Agentic Behaviour



Increase ♀'s **competence scores** to equally agentic men¹



Seem more **threatening**; less **persuasive** & less **influential**²



Decrease **compliance** of workers for ♀ managers²

If women need to manage the impressions they give off, it can lead to **stress, anxiety and reduced task performance**.^{2,3}

Gendered Language

Gendered wording **subtly** signals who **belongs** and **who doesn't**.

Below are examples of language in job advertisements and qualities of candidates.

Feminine

- a company's "**excellence**" in the market
- "**understand** markets to **establish** appropriate selling prices"
- "We are **committed** to providing top quality health care that is **sympathetic** to the needs of our patients"

MASCULINE

- a company's "**dominance**" in the market
- "**analyze** markets to **determine** appropriate selling prices"
- "We are **determined** to deliver **superior** medical treatment tailored to each individual patient"

Source:

Gaucher, D., Friesen, J. & Kay, A. (2011). Evidence that gendered wording in job advertisements exists and sustains gender inequality. *Journal of Personality and Social*

Sample Gendered Words

Feminine

Affectionate
Cheer*
Commit*
Communal
Compassion*
Connect*
Considerate
Cooperat*
Depend*
Emotiona*
Empath*
Flatterable
Gentle
Honest
Interdependen*
Interpersona*
Kind
Kinship
Loyal*
Nurtur*
Pleasant*
Polite
Quiet*
Respon*
Sensitiv*
Submissive
Support*
Sympath*
Tender*
Together*
Trust*
Understand*
Warm*

MASCULINE

Active
Adventurous
Aggress*
Ambitio*
Analy*
Assert*
Athlet*
Autonom*
Challeng*
Compet*
Confident
Courag*
Decide
Decisive
Decision*
Determin*
Domina*
Force*
Hierarch*
Hostil*
Independen*
Individual*
Intellect*
Lead*
Logic
Objective
Opinion
Outspoken
Persist
Principle*
Stubborn
Superior
Self-confiden*

WARM LANGUAGE & PUBLIC (DIS)APPROVAL

COMBINED



**AS CONGRESS'S LANGUAGE
GOES NEGATIVE SO DOES
THEIR APPROVAL**

- PROSOCIAL LANGUAGE
- PUBLIC APPROVAL RATING



SAUDER
School of Business



What do you Value?





Diversity as a Value

For diversity to be considered a value of a particular company, all members of the company must be able to articulate:

- How diversity affects the company's **business case**
- How diversity is communicated and demonstrated in corporate practice

For an organization to benefit from safety, they must develop a **safety culture**.



Diversity as a Value

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- How diversity affects the company's **business case**
- How diversity is communicated and demonstrated in corporate practice

For an organization to benefit from diversity, they must develop a **diversity culture**.

Be authentic.

Lead from
where you are.

Challenges

Strengths

Challenges

Strengths

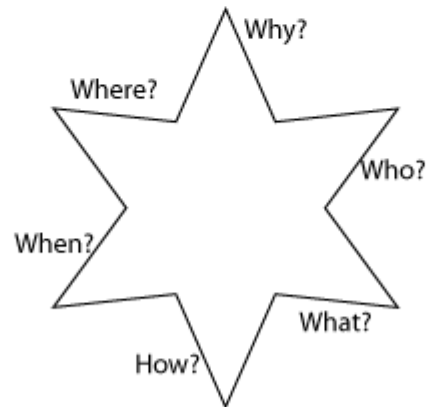
- Solutions
- Ideas
- Leverage Points



- Put your strategy in the centre
- At each point, write as many questions about the strategy as possible that start with the prompt. For example:
 - Who will this benefit?
 - Who will resist this?
 - Who will champion this?
 - Who will help?
 - Who has the authority to make the change

Strategy Star

Once you have an idea of how to make a friendlier workplace, the strategy star can help you determine what steps to take next. Write your strategy (e.g. ensuring that appropriate male and female washroom facilities are available at your work site and not an hour away) in the centre of the star. Write questions about the strategy that begin with the prompts at the tip of each star - this is your starting point.



Leadership styles

Why should STEM people lead?

- Societies needs scientists and engineers that understand societies
 - “Engineers are the gardeners of society”.
 - Our built environment and our technological developments shape our day to day lives.



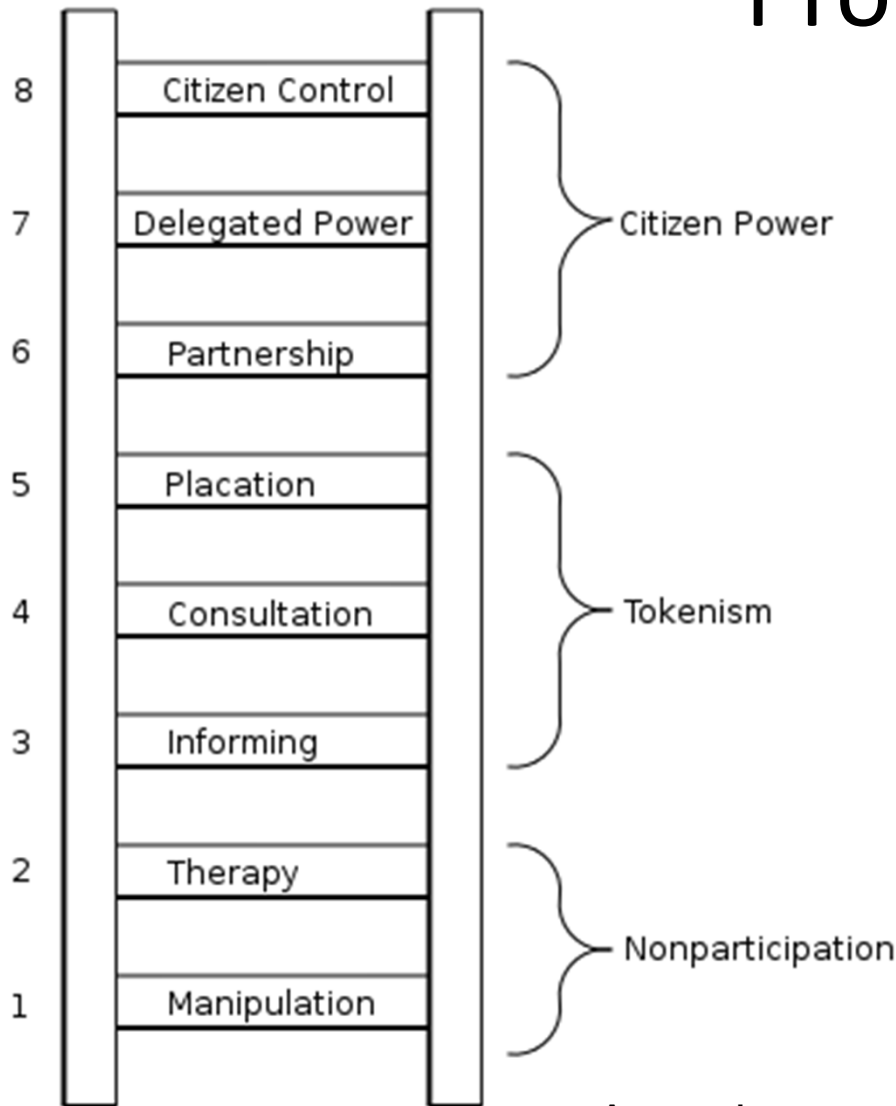
Does it Matter?

- Professional standards require training in leadership attributes - (CEAB graduate attributes)
 - being a member and a leader of a team;
 - communications skills;
 - professionalism;
 - impact of engineering on society and the environment;
 - ethics and equity;
 - economics and project management;
 - and life-long learning

My Why

- Entrenchment and valuing of service as part of leadership practice in engineering.
- Educational value - reflecting on engineering experiences provides a broader view and life long learning.
- Move the narrative about engineering from technological hero to societal servant.
- And through that change in narrative to attract more women to the engineering profession

Leadership and the Participatory Process



Arnstein

Partnership: power is shared by citizens and power holders. Planning and decision-making responsibilities are shared.

Delegated power: Citizens achieve dominant decision-making authority over a particular plan or program through negotiation with power holders.

Citizen control: participants / citizens are in full charge of policy and managerial aspects and be able to negotiate the conditions under which 'outsiders' may change them.

Technocratic engagement (Traditional)	Democratic engagement (Participant)	
Mutuality	Reciprocity	<i>Modified from Saltmarsh J; Hartley, M and Claytor P (2009) Democratic Engagement White Paper</i>
Deficit-based	Asset-based	
For the public	With the public	
Applied	Inclusive, collaborative, integrative problem-solving	
Uni-directional flow of knowledge from credential experts within the academy	Multi-directional flow of knowledge within a web of knowledge centres who share authority	
Distinction between knowledge producers and knowledge consumers	Co-creation of knowledge; capacity building for collaborative knowledge production and action	
Primacy of academic knowledge	Shared authority for knowledge creation	
University as the centre of teaching, learning and knowledge production which can be focused on solving problems ‘out there’	University as one part of an ecosystem of teaching, learning and knowledge production which is characterized by an orientation toward public purposes and problem-solving	
Often transactional exchanges	Potentially mutually-transformative partnerships	
Hierarchy / traditional power dynamics	Co-roles / powershift	

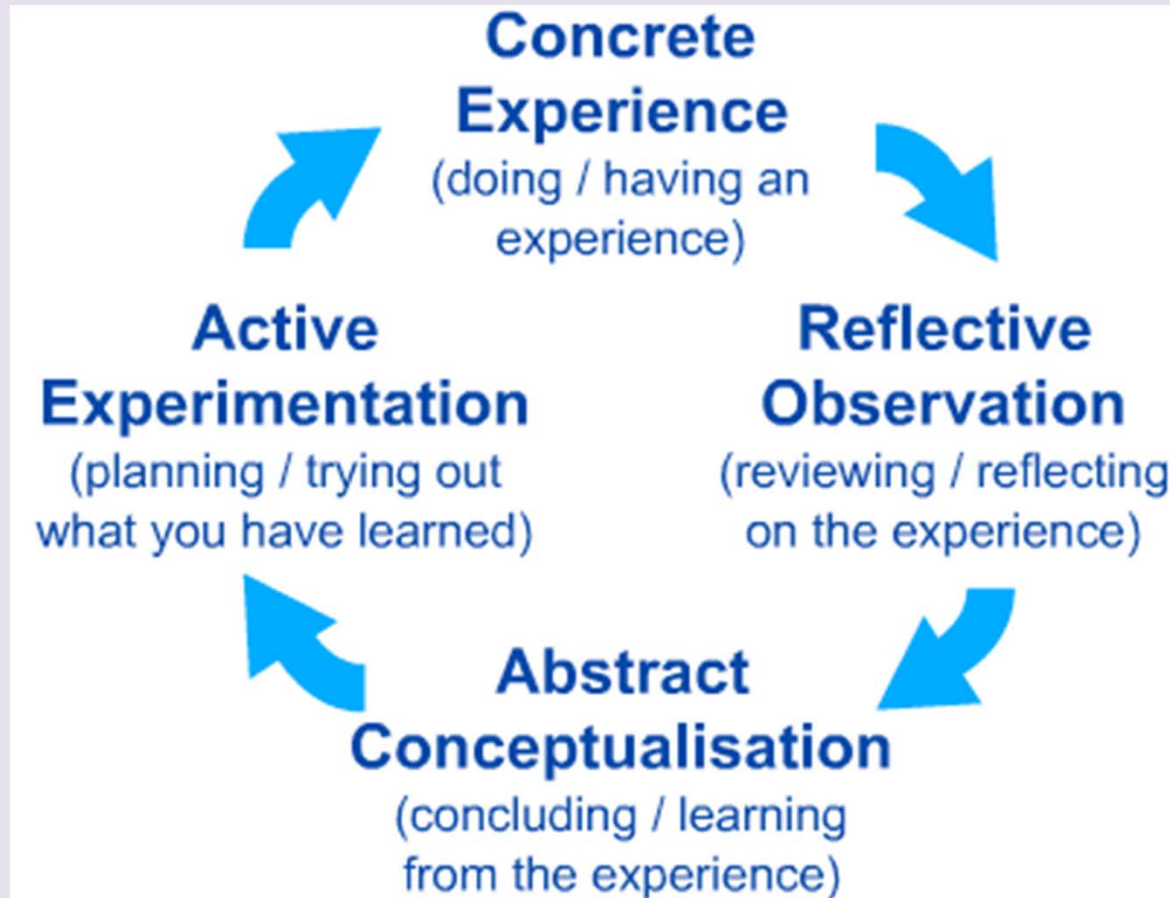
Change how STEM practitioners look at problems

Technical Problem	Adaptive Challenge
Problem is known – previous experience	Problem/Solution is not known
Solution is known	Expert knowledge is limited or not available
The group has established processes and authorities to provide a solution	No processes or solutions that can address the challenge
No need for further learning	Need for learning and capacity development
Solution exists before the problem arises	Problem exists before the solution

Developing Leadership through Service Learning Experiences

- Service Learning
 - Experiential education broadens world-view
 - **Practice of critical reflection gives opportunity to connect experience to learning.**
- Community Service Learning
 - Strong fit with design practice
 - Well established in universities in US and Canada
- International Service Learning
 - Service learning with strong cultural learning component
 - High impact but limited opportunities for students due to cost, co-op and other curricular limitations

Service Learning Cycle



UBC Global Engineering Leadership Course Design

APSC 461 (May-June)

- Speaker Series and Workshops
- Readings, Reflections and Conversations
- Community Service Learning Project

APSC 462 (July-August)

- International Service Learning placement at Tsomanotik, Chiapas, Mexico
- Training by UBC ISL unit
- Series of essays, journal, 360 Review



ISL – Appropriate Technology Development

- Working with community members and Mexican engineering students
- Examples: Food dryers, Bicycle water pumps, Solar hot water heaters
- Largest impacts on project – language, culture, and relationships.



Non-Work Leadership Opportunities

- Community and/or professional group chair
- Mentor/lead student groups
- Workshop organization
- International leadership opportunities
 - Engineers without Borders
 - Red Cross/Crescent

Key Leadership Strategies

- Learn the ropes first – try a wide variety of roles so you truly learn about the situation
 - Builds authenticity and trust (servant leadership)
 - Helps you to understand the problems
- Co-Lead (try before you buy)
- Develop allies internally and externally
- Surround yourself with people who are smarter than you (and don't be threatened by them)
- Be open and honest with your team
- Take some risks
- Plan for succession

Question:

Why do you want to lead?

Leadership responses

A variety of leaders

- Over our careers, we are supervised by a variety of leaders
- Each may have different styles and characteristics
- We don't always respond well to all of these differences
- To thrive in our careers, we need to learn how to adapt and maintain our performance to these less appealing styles and



Questions

Think about the leadership styles of the people you work with and the way you react to them.

- What inspires and motivates you?



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- What inspires and motivates you?
- What discourages and disheartens you?
- How can you overcome discouraging leadership?
- How can this inspire your own leadership approaches?

Aynslie Ogden



Now What?

Find Advocates

Build a Peer
Network

Strategies

Make Small
Changes

Make Strategic
Choices

Find Advocates

- Look for allies who are in a position to speak out
- Encourage others to echo your thoughts
- Help one “mover” understand the issue so they can move it for you



- A group of peers will understand where you are
- They can provide both support and critical mass for change
- If there is no one at the top of the mountain, find people to climb it with you

Build a Peer
Network

Make Small Changes

- A puzzle is made of hundreds of pieces
- Each piece is essential
- You put the puzzle together one piece at a time
- A single drop into a pond can have a big effect



- Pick your battles - you can forfeit some and still win the war
- Sometimes it is better to argue with actions than words
- Decide when it's time to have someone else involved

Make Strategic
Choices



Organizational Measures

- Diversity Audit (Cukier et al.)
 - Leadership & Governance
 - CEO engagement
 - Policy and communication on diversity
 - Diversity metric tracking
 - Proportion of female employee in relation to the pool
 - Level and rate of advancement, compensation tracking
 - Comparison of diversity metrics vs. competitors
 - Quality of Life and Workplace Culture
 - Flexible work options
 - Family-friendly policies



Organizational Measures

- Human Resources Practices
 - Alternate routes to senior positions
 - Active recruitment of women
 - Training and development
- Integration and Mainstreaming of Diversity Culture
 - Reflect diversity in product development and design
 - Include diversity values in marketing and reporting
- Develop the Diversity Pool
 - Support programs that raise awareness of engineering as a positive career choice for women
 - Work with professional association and universities to increase the profession's share of talented women



WVest Diversity Audit

Practice	Example	Organization	Initiative	Notes
Do senior executives pro-actively communicate the importance of diversity inside and outside the organization?	In addition, by having management initiate the process, the strategy becomes incorporated in the firm's operational activities	Scotiabank	Connects strategy to advance women to performance targets	
		TD Bank	Communicate consistently and clearly diversity commitments and initiatives	All information is on the company's diversity intranet site, including a toolkit for managers, <i>Diversity in Action</i>
		RBC	Senior management/CEO discuss the importance of diversity to the employees and to their constituents	
Do leaders reflect the composition of the workforce?	When senior management is representative of the workforce, it can more effectively develop the pipeline (i.e. offer training and development to under-represented groups)	TD Bank	5 of the 17 members of the TD Board of Directors are Women	
	As a result, members of under-represented groups report more job satisfaction and greater participation	TD Bank	Women make up 33.78% of TD's VPs, SrVPs, and ExVPs	
Is there a diversity council?	Responsible for creating and implementing policies to increase diversity	RBC	RBC's Diversity Leadership Council	Chaired by the President and CEO of the company

[1] W. Cukier, S. Smarz, and M. Yap, "Using the Diversity Audit Tool to Assess the Status of Women in the Canadian Financial Services Sector : A," *The International Journal of Diversity in Organisations, Communities and Nations*, vol. 11, no. 3, 2012.