The University of Alberta respectfully acknowledges that we are located on Treaty 6 territory, a traditional gathering place for diverse Indigenous peoples including the Cree, Blackfoot, Métis, Nakota Sioux, Iroquois, Dene, Ojibway/Saulteaux/Anishinaabe, Inuit, and many others whose histories, languages, and cultures continue to influence our vibrant community.

How to write successful EDI statements for grant applications

Dr. Lisa Willis
Assistant Professor
University of Alberta

Why is EDI important?

- Morality

- Science affects everyone so everyone should have a voice in what science gets done and how

- Science is paid for by taxpayers and should reflect and serve that demographic

- Better team science

- Full utilization of human capital

- Diversity drives innovation

We are all biased

| **Inherent ability** (+ luck) | - | **Opportunity gap** | = | **Achievement** |
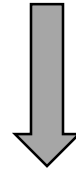
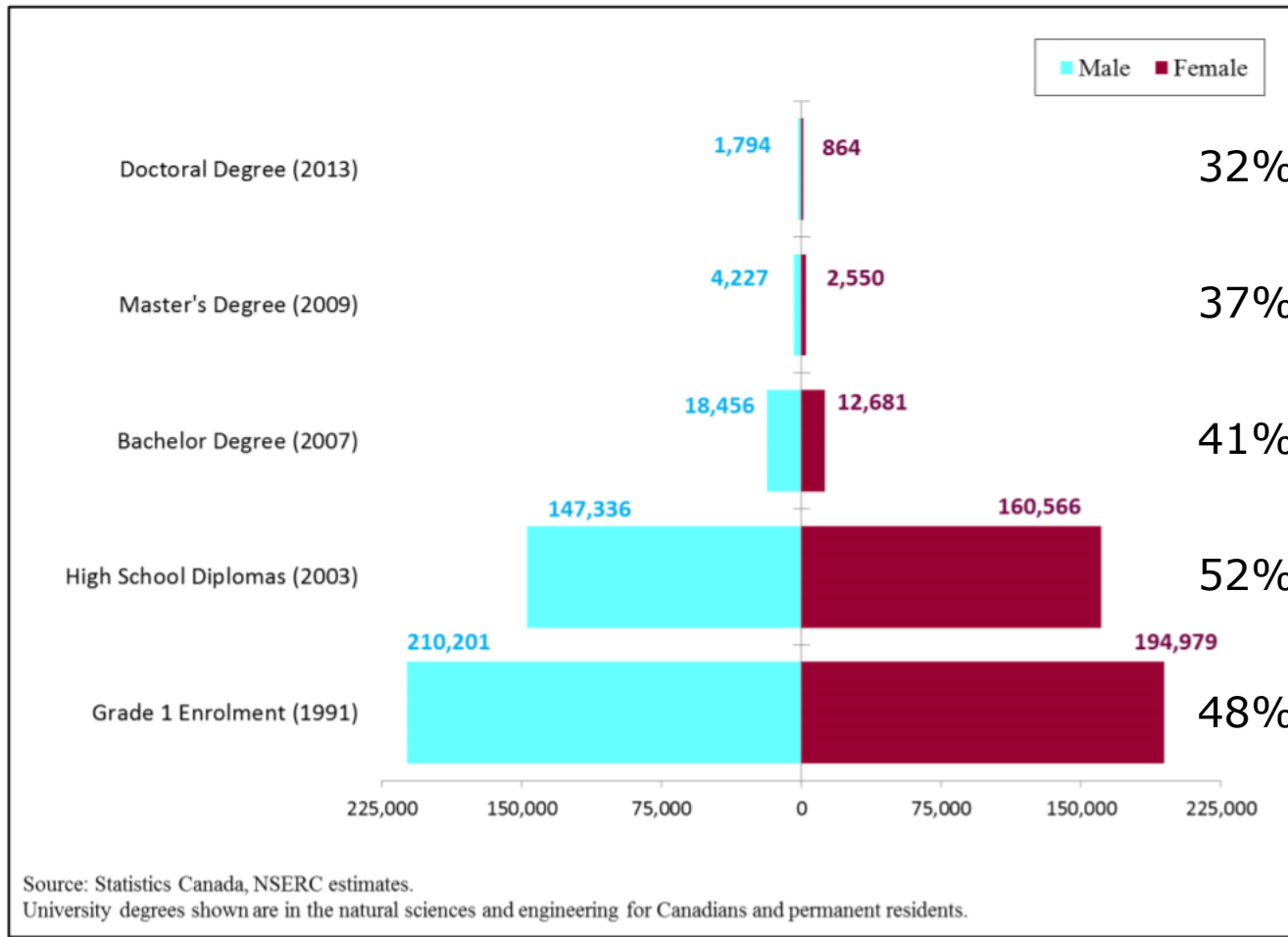Socioeconomic background

Overt discrimination

Unconscious bias

Unconscious bias: Behavior that is shaped by implicit or unintended biases, stemming from repeated exposure to pervasive cultural stereotypes

People who value their objectivity and fairness are paradoxically particularly likely to fall prey to biases, in part because they are not on guard against subtle bias

Attrition rate is higher for women than men in STEM

Figure 2.1 The Canadian Science and Engineering Supply Chain

Legend: Male (light blue), Female (dark red)

Level	Male	Female	% Female
Doctoral Degree (2013)	1,794	864	32%
Master's Degree (2009)	4,227	2,550	37%
Bachelor Degree (2007)	18,456	12,681	41%
High School Diplomas (2003)	147,336	160,566	52%
Grade 1 Enrolment (1991)	210,201	194,979	48%

x-axis: 225,000 — 150,000 — 75,000 — 0 — 75,000 — 150,000 — 225,000

Source: Statistics Canada, NSERC estimates.
University degrees shown are in the natural sciences and engineering for Canadians and permanent residents.

		% Female			
Level	**1992**	**1999**	**2007**	**2014**	
Enrolment					
Bachelor's	32.1	37.5	38.6	38.0	
Master's	29.4	38.7	37.5	36.5	
Doctoral	20.9	29.5	30.9	31.8	
Degrees					
Bachelor's	31.6	38.3	40.6	38.7	
Master's	27.4	36.3	36.2	35.9	
Doctoral	20.2	22.9	31.3	31.3	

Source: Statistics Canada
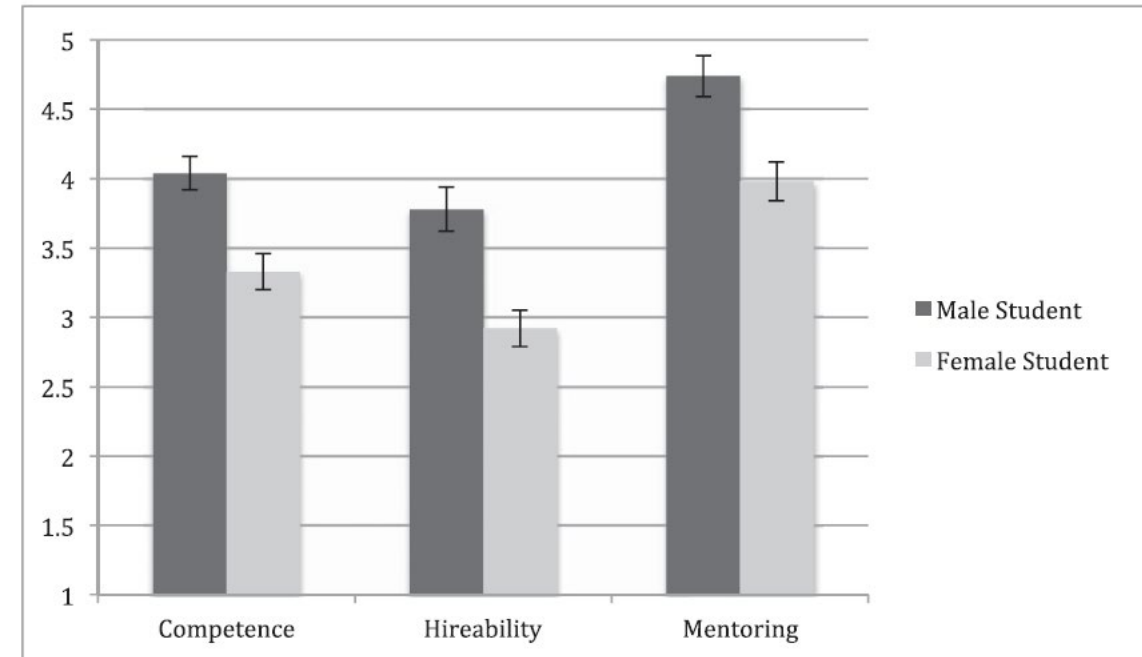
Bias in STEM hiring

127 biology, chemistry, physics profs in USA were given the resume of an undergrad who intends to go to grad school and has recently applied for a laboratory manager position

Asked to rank (i) perceived student competence; (ii) salary offers, which reflect the extent to which a student is valued for these competitive positions; and (iii) the extent to which the student was viewed as deserving of faculty mentoring on a scale of 1-7

½ given John, ½ given Jennifer

Offered $26508 to Jennifer and $30238 to John

Faculty members' bias was **independent of their gender**, scientific discipline, age, and tenure status

Women with identical publication records are less likely to be hired than men (van Dijk et al *CurrBiol* 2014; 25000 unique names in PubMed)

Moss-Racusin, et al. *PNAS* 2012

Bias in STEM hiring

251 faculty from biology and physics at major US universities evaluated a postdoc CV for "formatting" with the names:

- Bradley Miller
- Claire Miller
- Zhang Wei [David]
- Wang Li [Lily]
- Jamal Banks
- Shanice Banks
- José Rodriguez
- Maria Rodriguez

Eaton, et al. *Sex Roles* 2019
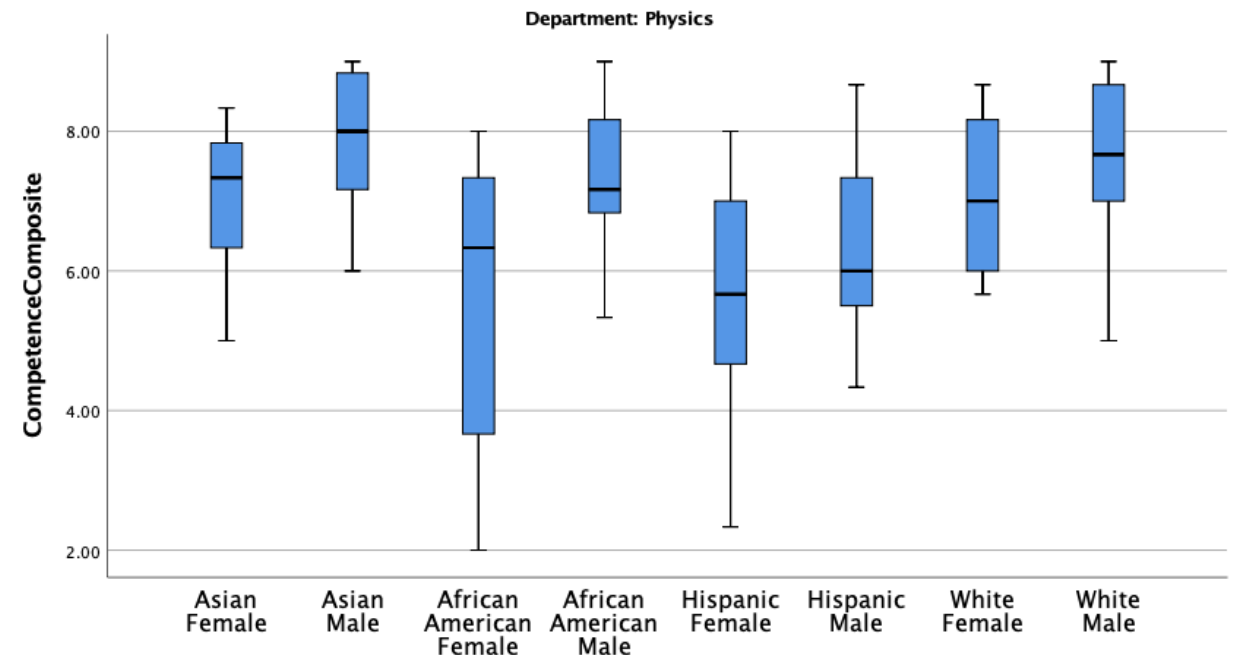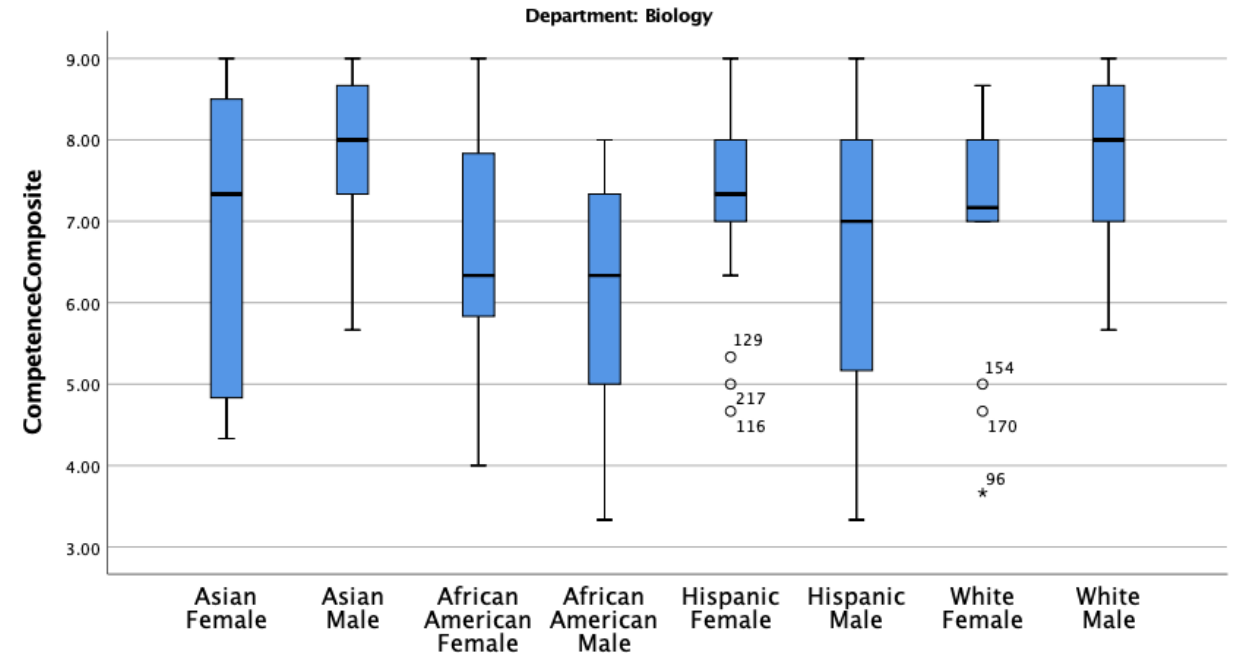
EDI in grant applications - NSERC

DISCOVERY GRANTS MERIT INDICATORS

	The Merit Indicators should be used in conjunction with the Peer Review Manual, which outlines how reviewers arrive at a rating.					
	EXCEPTIONAL	**OUTSTANDING**	**VERY STRONG**	**STRONG**	**MODERATE**	**INSUFFICIENT**
Training of Highly Qualified Personnel	Past training is **at the highest level** in terms of the research training environment provided and HQP contributions to research.	Past training is **far superior** to other applicants in terms of research training environment provided and HQP contributions to research.	Past training is **superior** to other applicants in terms of the research training environment provided and HQP contributions to research.	Past training compares **favourably** with other applicants in terms of the research training environment provided and HQP contributions to research.	Past training is **modest** relative to other applicants in terms of the research training environment provided and HQP contributions to research.	Past training is **below an acceptable level** in terms of the research training environment provided and HQP contributions to research.
	Most HQP move on to **highly impactful** positions that require skills gained through the training received.	Most HQP move on to **impactful** positions that require skills gained through the training received.	HQP **generally** move on to **impactful** positions that require skills gained through the training received.	HQP **generally** move on to positions that require skills gained through the training received.	**Some** HQP move on to positions that require skills gained through the training received.	HQP **rarely** move on to positions that require skills gained through the training received.
	Training philosophy and research training plans are **of the highest quality**: **highly appropriate, clearly defined** and expected to produce **top quality** results in terms of the overall approach and specific projects for HQP; challenges related to equity, diversity and inclusion specific to the institution **and** field of research are **clearly described; and** specific actions to support the recruitment of a diverse group of HQP **and** an inclusive research training environment are **clearly defined.**	Training philosophy and research training plans are **far superior**: **highly appropriate, clearly defined** and expected to produce **high quality** results in terms of the overall approach and specific projects for HQP; challenges related to equity, diversity and inclusion specific to the institution **and** field of research are **clearly described; and** specific actions to support the recruitment of a diverse group of HQP **and** an inclusive research training environment are **clearly defined.**	Training philosophy and research training plans are **superior**: **highly appropriate, clearly defined** and expected to produce **quality** results in terms of the overall approach and specific projects for HQP; challenges related to equity, diversity and inclusion specific to the institution **and** field of research are **described; and** specific actions to support the recruitment of a diverse group of HQP **and** an inclusive research training environment are **defined.**	Training philosophy and research training plans are: **appropriate** and **clearly defined** in terms of the overall approach and specific projects for HQP; **described** in terms of challenges related to equity, diversity and inclusion specific to the institution **and/or** field of research; **and** **defined** in terms of specific actions to support the recruitment of a diverse group of HQP **and/or** an inclusive research training environment.	Training philosophy and research training plans are: **partially appropriate** and **partially defined** in terms of the overall approach and specific projects for HQP; **partially described** in terms of challenges related to equity, diversity and inclusion specific to the institution **and/or** field of research; **and** **partially defined** in terms of specific actions to support the recruitment of a diverse group of HQP **and/or** an inclusive research training environment.	Training philosophy and research training plans are: **not appropriate** and **not clearly defined** in terms of the overall approach and specific projects for HQP; **inaccurate** or **not described** in terms of challenges related to equity, diversity and inclusion specific to the institution **and/or** field of research; **and** **not appropriate** or **not described** in terms of specific actions to support the recruitment of a diverse group of HQP **and/or** an inclusive research training environment.

http://www.nserc-crsng.gc.ca/_doc/Professors-Professeurs/DG_Merit_Indicators_eng.pdf
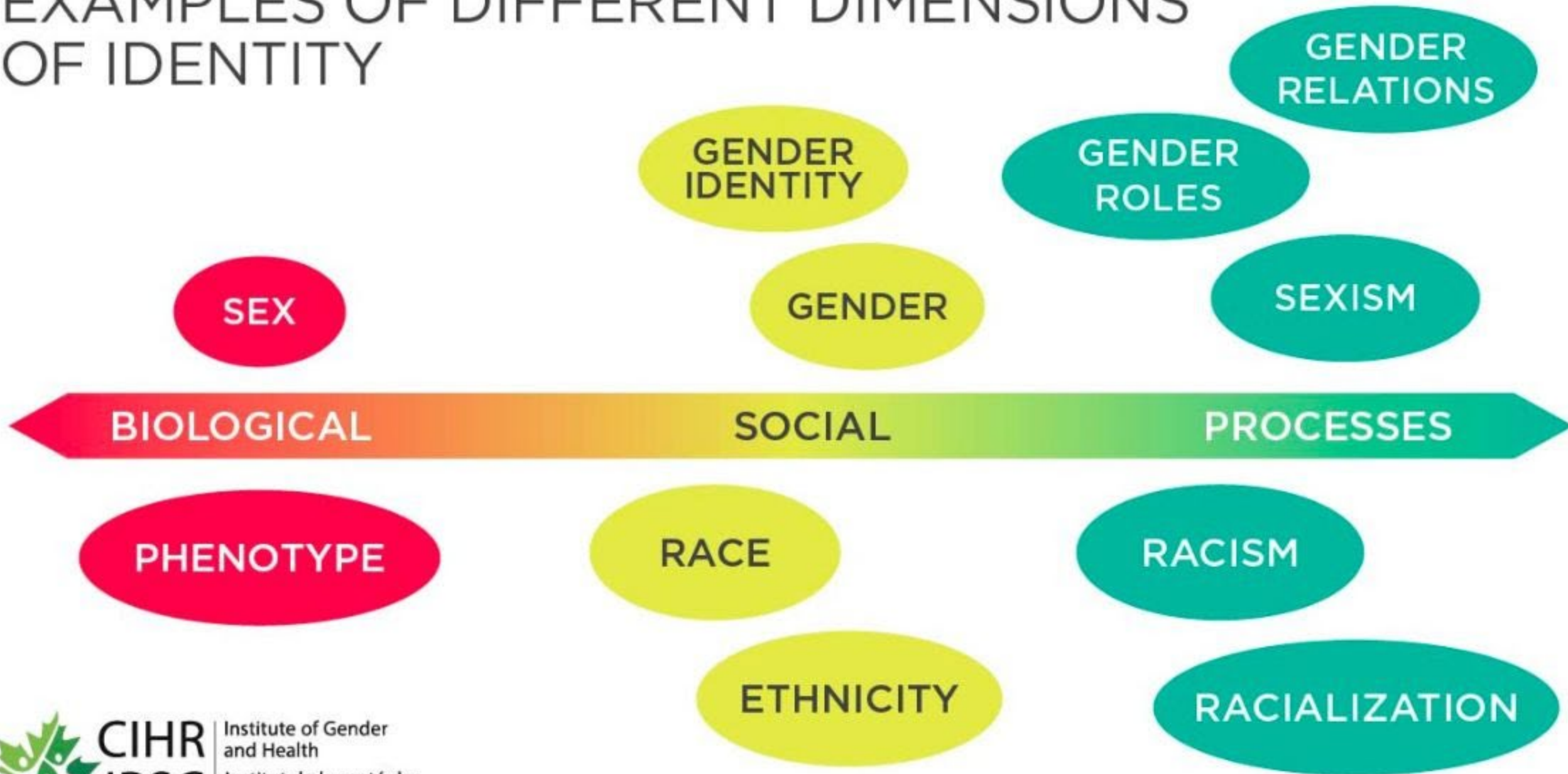
Proper language in Canada

Equity – Providing people what they need to succeed; creating a system where all people can succeed

Diversity – Recognizing and valuing people's differences. Canadian government: race, colour, place of origin, religion, immigrant and newcomer status, ethnic origin, ability, sex, sexual orientation, gender identity, gender expression and age

Inclusion – Making sure everyone has the opportunity to participate fully

Racialization/racialized person – "the process by which societies construct races as real, different and unequal in ways that matter to economic, political and social life" Ontario Human Rights Commission (http://www.ohrc.on.ca)

EXAMPLES OF DIFFERENT DIMENSIONS OF IDENTITY

GENDER RELATIONS

GENDER IDENTITY

GENDER ROLES

SEX

GENDER

SEXISM

BIOLOGICAL   SOCIAL   PROCESSES

PHENOTYPE

RACE

RACISM

ETHNICITY

RACIALIZATION

CIHR IRSC | Institute of Gender and Health / Institut de la santé des femmes et des hommes

Proper language in Canada

Four designated groups (aka marginalized groups)
- **Women**
- **Persons with disabilities**
- **Indigenous peoples**
- **Racialized persons**
- LGB and TQ2+ (in NFRF only)

What goes into an EDI statement

- **What are the EDI issues in your department/institution/field**

- **What hiring practices do you employ to recruit diverse trainees**

- **How do you support trainees**

- **How do you educate trainees**

- **What are the issues, what have you done, what are you planning to do?**

What goes into an EDI statement

- **What are the EDI issues in your department/institution/field**

Numbers:
- NSERC WISE report
- Institute statistics

Lived experiences:
- Literature reviews
- Personal experiences

What do bias and discrimination look like in STEM?

Disrespect:
- Interrupting
- First name/last name
- Language/jokes/music
- Leaving out of group emails
- Expectations/stereotypes
  - Lab roles/committee roles
- Inclusion in social activities
- Mispronouncing names

Lack of opportunities:
- Speaker invitations
- Collaborations
- Funding/awards/peer review
- Insider information
- Sponsors

Lack of acknowledgement:
- Credit for ideas
  - Two person teams
  - Group meetings
- Reference letters

Double standard:
- Higher penalty
  - Speaking in groups
  - Risk taking
  - Negotiating
  - Cold calls (hiring)
- Family
- Supervisor feedback
- Executive presence
- Teaching evaluations

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Strategies for fixing bias and discrimination in STEM

1 – Acknowledge your biases and your privilege

2 – Do your research, listen to your friends and colleagues, and then be vocal

3 – Be strategic about who you work with

4 – Restructure hiring, retention, and advancement programs (leadership pipeline)

5 – Generate a code of conduct as a team

6 – Be inclusive

7 – Be intentional

8 – Be supportive

9 – Rethink the status quo

10 – Make action a habit

Willis, Mehta, and Davis *ACS Central Science* 2020
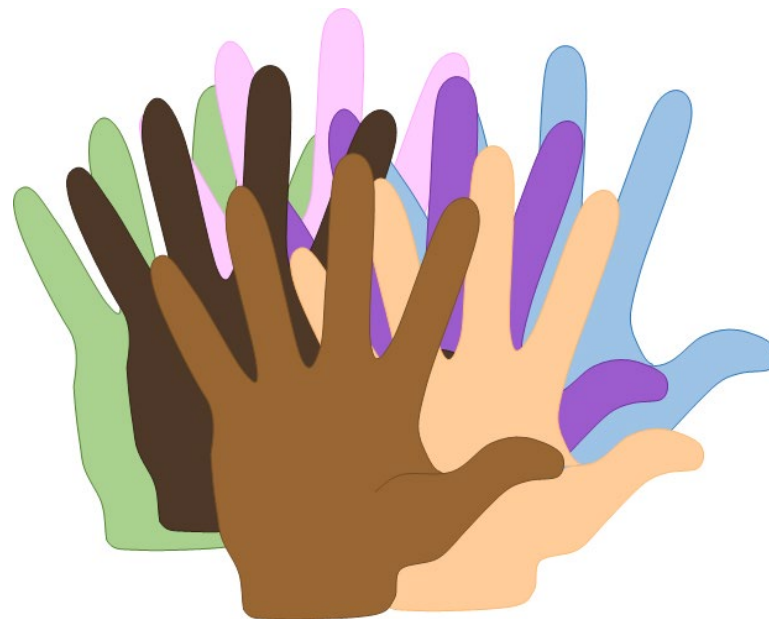
Solutions to bias in STEM hiring

Designing the position:
- Flexibility?

Advertising the position:
- Use non-gendered terms
- Do not list mandatory criteria
- Do not use "excellence" wording
- Have an EDI statement and require it from candidates
- List accommodations
- Widely display ad (job sites, twitter)
- Target specific groups
  - Special interest groups
  - Invited URG to apply
- Have ad up for a reasonable length of time

Vetting the candidates:
- Bias training refresher
- Review criteria

Interviewing:
- Be flexible in interview dates/times
- Ask if there are any accommodations needed
- Have applicants interviewed by more than one person
- Have a list of set questions asked of every candidate
- Have unconscious bias training before interview
- Be strategic about team composition
- Discuss salary up front

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How to educate trainees

- Attend EDI seminars and workshops as a group

- Discuss STEM EDI papers in group meeting

- Discuss professionalism

- Call out/call in inappropriate behaviour

- Practise!

http://www.racialequityvtnea.org/wp-content/uploads/2018/09/Interrupting-Bias_-Calling-Out-vs.-Calling-In-REVISED-Aug-2018-1.pdf

Wow. Nope. Ouch. I need to stop you right there.	That word/comment is really triggering and offensive. Be mindful and pick a different word.	I need to push back against that. I disagree. I don't see it that way.
Okay, I am having a strong reaction to that and I need to let you know why.	I don't find that funny. Tell me why that's funny to you.	I wonder if you've considered the impact of your words.
Hmmm.. maybe you want to think this one through a bit more and speak about it later.	I need you to know how your comment just landed on me.	That's not our culture here. Those aren't our values.

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Writing EDI statements

Do:
- Read the instructions
- Discuss impact
  - What is the issue
  - How are you addressing it
  - What is the expected outcome
- Make it personal

Do NOT:
- Assume women and racialized individuals are the only diversity
- Conflate sex and gender
- Put statistics for your group
- Say you will follow your University's policies
- Say everything is already fine in your group
- Focus on the research

Questions?

Willis, Mehta, and Davis *ACS Central Science* 2020

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