Unconscious bias & challenges to fair assessment

**Professor Maydianne Andrade**

Professor of Biological Sciences  
Acting Vice Principal Academic & Dean  
Vice Dean Faculty Affairs & Equity

**Professor Bryan Gaensler**

Professor of Astronomy  
Director Dunlap Institute for Astronomy and Astrophysics

UNIVERSITY OF TORONTO

Dunlap Institute for Astronomy & Astrophysics
Unconscious bias & challenges to fair assessment

1. Patterns of representation
2. Why consider representation?
3. Schema & Unconscious bias
4. Case studies: Assessment challenges
5. Moving forward
Canadians value equity & diversity

Reflecting this diversity in our own community is uniquely valuable to the University as it contributes to the diversification of ideas and perspectives and thereby enriches our scholarship, teaching and other activities. We will proactively seek to increase diversity among our community members...

University of Toronto Governing Council, 2006

And yet...

Under-representation is pervasive in Canada* in the professoriate, corporations, management/leadership, politics...

1. Parity (undergraduates): ~1985
2. Similarity (graduates): ~1985
3. Parity (graduates): ~2000
Representation: patterns

% Women enrolled in MD programs in Canada

Parity (MD): ~1995

Canadian Medical Education Statistics, 2018, Association of Faculties of Medicine of Canada
Academic rank: current patterns

• 22 years after graduate enrollment similarity
• 7 years after graduate enrolment parity

2007

The expert panel on women in University research, 2012
Academic rank: current patterns

• **31 years** after graduate enrollment similarity
• **16 years** after graduate enrollment parity

2016/2017

Council of Canadian Academies

Smith & Bray 2018; CAUT 2018
Academic rank: current patterns

• 21 years after MD enrollment parity

2016/2017

Council of Canadian Academies, Smith & Bray 2018; CAUT 2018
Canadian Medical Education Statistics, 2018
The higher in the ranks one looks, the fewer women are present in comparison to men in positions such as full professors and presidents of universities, leaders of government agencies, and CEOs of private sector companies.
Leadership: Canadian U15 Universities

Board Chairs (n=14*): 64.3% Men, 7.1% Women
Chancellors (n=14*): 78.6% Men, 21.4% Women
Presidents and Vice Chancellors (n=15): 60% Men, 20% Women
Provosts and Vice-Presidents (Academic) (n=15): 60% Men, 40% Women
Vice-Presidents (Research) (n=15): 40% Men, 13.3% Women
Deans (n=205): 62.9% Men, 1.5% Women

Smith 2018, Academic Women’s Association, University of Alberta. Creative Commons license
Leadership: current patterns

22 years after MD enrollment parity

Council of Canadian Academies, Smith & Bray 2018; CAUT 2018
Canadian Medical Education Statistics, 2018
Unconscious bias & challenges to fair assessment

1. Patterns of representation
2. Why consider representation?
3. Schema & Unconscious bias
4. Case studies: Assessment challenges, gender & race
5. Moving forward: The Leadership Challenge

© MCB Andrade 2017
Why is equity & diversity desirable?

1. Fairness
   • Human rights

2. Incentives
   • ‘The business case’
   • Improved patient care
   • Focus of federal assessments & granting agencies (CRC, CIHR)

3. Innovation
   • Utilize available talent
   • Increased creativity
   • Innovative problem-solving

Hunt et al 2015, Catalyst 2004
Diversity & Problem Solving

rework.withgoogle.com  Modified from re:Work (Google)
Current patterns

Why?

• The pool?
• Interest & chosen fields/career paths?
• Paid-Work-life balance & institutional culture
• Harassment
• ‘The glass ceiling’
  ➢ Biases in assessment
Unconscious bias & challenges to fair assessment

1. Patterns of representation
2. Why consider representation?
3. Schema & Unconscious bias
4. Case studies: Assessment challenges, gender & race
5. Moving forward: The Leadership Challenge
Bias

Differential evaluation of one group and its members relative to another

Explicit/Conscious
Person is aware of their evaluation
Expression of bias is intentional

e.g. racism, sexism, homophobia, transphobia

*modified from T De Mello

MCB Andrade 2016
Schema & Unconscious bias

- **Schema**: categorical assessments of individuals and relationships between individuals

  - **Shape expectations & evaluations**

  - **Expectations & evaluations based on group identification lead to unconscious or implicit bias**

*modified from T De Mello*
Bias

*Differential evaluation* of one group and its members relative to another

**Implicit/Unconscious Bias:**
- Person does not perceive or endorse evaluation

**Expressions are:**
- Not related to self-identified group of evaluator
- Unintentional, automatic
- Often contradictory to conscious beliefs

*modified from T De Mello*
Implicit association tests

- **Task**: instructed to associate images and words with categories
  - Consistent or contrary to stereotypes

- **Measurement**: variation in response speed & error rates

implicit.harvard.edu/implicit
Stroop Effect

Blue

Green
Implicit Association Tests

Greenwald et al 1998
Anti-black implicit bias

Strong implicit bias for **black**

No bias

Strong implicit bias for **white**

>3 million scores (2002-2015)

Greenwald et al 1998
Anti-black implicit bias

Strong implicit bias for **black**
-2.0  14%

No bias  18%

Strong implicit bias for **white**
2.0  51%

>3 million scores (2002-2015)

Greenwald et al 1998
Unconscious bias: Height

Average height of American men: 5’9"

An inch of height is worth $789/year in salary

Average height Fortune 500 CEO’s 6’

M. Gladwell, 2006, *Blink*
Unconscious bias: not just gender & race

Gender expression, race, ethnicity, sexual orientation, age, socio-economic status....
Unconscious bias & challenges to fair assessment

1. Patterns of representation
2. Why consider representation?
3. Schema & Unconscious bias
4. Case studies: Assessment challenges
5. Moving forward
Assessing excellence: gender bias

Fellowship applications
• Swedish Medical Research Council
• 1995 Research fellowship competition

Success rate:
8% of female applicants
24% of male applicants

• Biggest gender differential in scores were for Scientific excellence

Did women publish fewer high-impact papers?

1. Calculate total gender-blind impact:
   - # publications
   - Journal impact

2. Compare to reviewer scores
“...strongly suggests peer reviewers cannot judge scientific merit independent of gender.”
Assessing excellence: gender bias

No gender difference in granting: primary focus on excellence of research proposal

‘Foundations’ 2014 & 2015 Excellence of Researcher

Success Rate (%)

2014 2015

23,918 grant applications

Witteman et al 2019, The Lancet
Assessing excellence: gender bias

No gender difference in granting: primary focus on excellence of research proposal

‘Foundations’ 2014 & 2015
Excellence of Researcher

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success Rate (%)</td>
<td>12%</td>
<td>8%</td>
<td>14%</td>
<td>10%</td>
</tr>
</tbody>
</table>

No gender difference: 4% difference in 2014 and 2015.

23,918 grant applications

Witteman et al 2019, The Lancet
Assessing excellence: gender bias

No gender difference in granting: primary focus on excellence of research proposal

Success Rate (%)

‘Foundations’ 2014 & 2015
Excellence of Researcher

Netherlands Organisation of Scientific research (NWO)
Van der Lee & Ellemers (2015)

Ahlqvist et al., 2015

Similar results:


We hypothesized that scientists of different races and ethnicities with similar research records and affiliations would have similar likelihoods of being awarded research grants.

Ginther et al 2011. Science

- 2000 – 2006
- 83,188 grants; 40,069 unique investigators
- Self-reported race/ethnicity (+other databases)
- Race/ethnicity cues in application?
  - Name, biosketch, institutions attended in application
Assessing excellence: racial & gender bias

Multi-variate analysis controls for:
- Research productivity
- publications & citations
- Demographics
- Education & training
- Employer characteristics
- NIH experience

Negative effects most pronounced for women of colour

2000 – 2006

Unconscious bias: Experimental approaches

Standard scenarios / scripts or documents
Modify gender/race of primaries

Evaluation of behaviour
• Actors or confederates
• Scripts
• Recorded

Evaluation of documentation
• CV
• Narratives
• Case files
# Unconscious Bias & Assessment of Leadership

Modified from D Zweig

<table>
<thead>
<tr>
<th>Beliefs about Males</th>
<th>Beliefs about Leaders</th>
<th>Beliefs about Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedicated</td>
<td></td>
<td>Helpful</td>
</tr>
<tr>
<td>Determined</td>
<td></td>
<td>Caring</td>
</tr>
<tr>
<td>Assertive</td>
<td></td>
<td>Sympathetic</td>
</tr>
<tr>
<td>Competitive</td>
<td></td>
<td>Kind</td>
</tr>
</tbody>
</table>

‘Agentic traits’

‘Communal traits’

Maher, 1993; Rojahn & Willemsen, 1994, Eagly & Karu 2002; Rosette et al 2008; Livingstone & Pearce, 2009; Gündemir et al 2014
### Unconscious Bias & Assessment of Leadership

**Beliefs about Males**
- Dedicated
- Determined
- Assertive
- Competitive

**Beliefs about Leaders**
- Dedicated
- Determined
- Competitive
- Charismatic

**Beliefs about Females**
- Helpful
- Caring
- Sympathetic
- Kind

*White*

- ‘Agentic traits’
- ‘Communal traits’

---

- Schema (stereotypes) affect our expectations & judgement

---

Maher, 1993; Rojahn & Willemsen, 1994, Eagly & Karu 2002; Rosette et al 2008; Livingstone & Pearce, 2009; Gündemir et al 2014
## Schema & Assessment of Leadership

**Personality penalties**: agentic traits seen as negatives when exhibited by women or ‘visible minorities’

<table>
<thead>
<tr>
<th>Beliefs about Males</th>
<th>Beliefs about Leaders</th>
<th>Beliefs about Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedicated</td>
<td>Dedicated</td>
<td>Helpful</td>
</tr>
<tr>
<td>Determined</td>
<td>Determined</td>
<td>Caring</td>
</tr>
<tr>
<td>Assertive</td>
<td>Competitive</td>
<td>Sympathetic</td>
</tr>
<tr>
<td>Competitive</td>
<td>Charismatic</td>
<td>Kind</td>
</tr>
<tr>
<td>White</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘Agentic traits’  ‘Communal traits’

Modified from D Zweig

Maher, 1993; Rojahn & Willemsen, 1994, Eagly & Karu 2002; Rosette et al 2008; Livingstone & Pearce, 2009; Gündemir et al 2014
Payoff for excellence: gender bias

Who becomes a PI (Principal Investigator)?

25,604 published scientists
1583 (6.2%) became PI’s

200 metrics of publication output

**Model**: Strongly predictive of who becomes a PI
Payoff for excellence: gender bias

Who becomes a PI (Principal Investigator)?

25,604 published scientists
1,583 (6.2%) became PI’s

200 metrics of publication output

Model: Strongly predictive of who becomes a PI

Factors (in order of relative importance):
1. Impact factors
2. Number of publications
3. **Gender**
4. Citations/Impact Factor
Payoff for excellence: gender bias

Who becomes a PI (Principal Investigator)?

25,604 published scientists
1583 (6.2%) became PI’s

200 metrics of publication output

Model: Strongly predictive of who becomes a PI

Factors (in order of relative importance):
1. Impact factors
2. Number of publications
3. Gender
4. Citations/Impact Factor

“...even after correcting for all other publication and non-publication-derived features, being male is positively predictive of becoming a PI....

Given the same publication record, men are more likely than women to become PI’s.”
Assessing excellence: racial & gender bias

Racial and gender biases plague postdoc hiring

Eaton et al 2019
Assessing excellence: racial & gender bias

Identical CV’s
- Average record
- Conflicting indicators of quality

Professors from 8 major Universities:
  Biology (n = 251)
  Physics (n = 94)

Task: Review CV of recent PhD as Post-doc applicant
- Sham: “how does CV formatting/style affect perception by faculty”
- Competence
- Hireability
- Likeability

<table>
<thead>
<tr>
<th>Race X Gender</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Bradley Miller</td>
<td>Jamal Banks</td>
<td>Jose Rodriguez</td>
<td>Zhang Wei (David)</td>
</tr>
<tr>
<td>Female</td>
<td>Claire Miller</td>
<td>Shanice Banks</td>
<td>Maria Rodriguez</td>
<td>Wang Li (Lily)</td>
</tr>
</tbody>
</table>

Eaton et al 2019
Assessing excellence: racial & gender bias

Competence
• Similar for Hireability

<table>
<thead>
<tr>
<th></th>
<th>Biology</th>
<th>Physics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td><img src="#" alt="Bar Graph" /></td>
<td><img src="#" alt="Bar Graph" /></td>
</tr>
<tr>
<td>Female</td>
<td><img src="#" alt="Bar Graph" /></td>
<td><img src="#" alt="Bar Graph" /></td>
</tr>
</tbody>
</table>

* indicates a statistically significant difference.
Assessing excellence: racial & gender bias

Competence

<table>
<thead>
<tr>
<th></th>
<th>Biology</th>
<th>Physics</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td><img src="image" alt="Bar" /></td>
<td><img src="image" alt="Bar" /></td>
</tr>
<tr>
<td>Asian</td>
<td><img src="image" alt="Bar" /></td>
<td><img src="image" alt="Bar" /></td>
</tr>
<tr>
<td>Black</td>
<td><img src="image" alt="Bar" /></td>
<td><img src="image" alt="Bar" /></td>
</tr>
<tr>
<td>Latinx</td>
<td><img src="image" alt="Bar" /></td>
<td><img src="image" alt="Bar" /></td>
</tr>
</tbody>
</table>

Eaton et al 2019
Assessing performance: racial bias

Subjects: Law partners (n = 60)

Given:
- Identical legal memos
- 22 deliberate errors

Task:
- assess writing competence of young attorneys

Reeves et al 2014, Nextion
Assessing performance: racial bias

Subjects: Law partners (n = 60)

Given:
- **Identical** legal memos
- **22 deliberate errors**

Task:
- assess writing competence of young attorneys

Reeves et al 2014, Nextion
Assessing performance: racial bias

No effect of race or gender of assessor

Proportion of errors found

81% 57%

“average at best”

Overall quality

‘African American’ 64%

‘Caucasian’ 82%

“generally good writer but needs to work on...”

Reeves et al 2014, Nextion
Opportunities in academia: gender bias

1. Psychology professors
   - Female reviewers: n = 120
   - Male reviewers: n = 118

2. Male or female name, identical dossiers:
   - Good record
   - Exceptionally strong record

Evaluation Task:
   - hire in tenure-track?
   - grant tenure?
## Opportunities in academia: gender bias

**Good record:**

<table>
<thead>
<tr>
<th></th>
<th>Craig</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offer tenure-track job</td>
<td>~45%</td>
<td>~29%</td>
</tr>
</tbody>
</table>

**Exceptional record:**

<table>
<thead>
<tr>
<th></th>
<th>Craig</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hire &amp; Grant tenure?</td>
<td>~35%</td>
<td>~35%</td>
</tr>
</tbody>
</table>

**No effect of gender of reviewer**

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

BUT: 4x more likely to express reservations if the candidate was female

Steinpreis et al 1999

1999 Psychology, N = 338
### Opportunities in academia: gender bias

<table>
<thead>
<tr>
<th></th>
<th>Craig</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Good record:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offer tenure-track job</td>
<td>~45%</td>
<td>~29%</td>
</tr>
<tr>
<td><strong>Exceptional record:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hire &amp; Grant tenure?</td>
<td>~35%</td>
<td>~35%</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hire?</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 1999 Psychology, N = 338
- 2015 Engineering, Biology Psychology, Economics* N = 363

Steinpreis et al 1999; Williams & Ceci 2015
### Opportunities in academia: gender bias

<table>
<thead>
<tr>
<th>Good record:</th>
<th>Craig</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offer tenure-track job</td>
<td>~45%</td>
<td>~29%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exceptional record:</th>
<th>Craig</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hire &amp; Grant tenure?</td>
<td>~35%</td>
<td>~35%</td>
</tr>
</tbody>
</table>

| Hire?*              | 32.7%   | 67.3%  |

1. Exceptional records
2. Excerpts from letters of recommendation
   - Career narratives
3. Agentic/Communal vocabulary scrambled

Steinpreis et al 1999; Williams & Ceci 2015
Challenges to fair assessment: gender

Systematic biases in letters of recommendation & respectful forms of address

Descriptions of Men

• superlatives
• references to ability, outcomes, agentic traits
• references to meeting/exceeding performance objectives
• Longer letters
• Use their title

Descriptions of Women

• references to ‘working hard’
• references to emotions, social effects, communal traits
• shorter/incomplete letters
• Use their first name
• negative language/ doubt-raisers: “..despite...”

Gender bias calculator: https://www.tomforth.co.uk/genderbias/

Trix & Psenka 2003; Dutt et al 2016; Schmader et al. (2008), Hebl et al 2018
Challenges to fair assessment: gender

Gendered/racialized use of doubt raisers

“...*although* problems with permits resulted in *relatively few* publications, her results are *high-impact*...”

- vs. -

“...he has *overcome* technical *challenges* to *produce high-impact* contributions...”

*Trix & Psenka 2003; Dutt et al 2016; Schmader et al. (2008), Hebl et al 2018*
Use of doubt raisers

- More common in recommendations written for women
- Even one doubt-raiser can decrease assessment of excellence in job candidates

Trix & Psenka 2003; Schmader et al. 2008, Dutt et al 2016; Hebl et al 2018
Subject Line: Prospective Doctoral Student (On Campus Next Monday)

Dear Professor [surname of professor inserted here],

I am writing you because I am a prospective doctoral student with considerable interest in your research. My plan is to apply to doctoral programs this coming Fall, and I am eager to learn as much as I can about research opportunities in the meantime.

I will be on campus next Monday, and although I know it is short notice, I was wondering if you might have 10 minutes when you would be willing to meet with me to briefly talk about your work and any possible opportunities for me to get involved in your research. Any time that would be convenient for you would be fine with me, as meeting with you is my first priority during this campus visit.

Thank you in advance for your consideration.

Sincerely
Subject Line: Prospective Doctoral Student (On Campus Next Monday)

Dear Professor [surname of professor inserted here],

I am writing you because I am a prospective doctoral student with considerable interest in your research. My plan is to apply to doctoral programs this coming Fall, and I am eager to learn as much as I can about research opportunities in the meantime.

I will be on campus next Monday, and although I know it is short notice, I was wondering if you might have 10 minutes when you would be willing to meet with me to talk about your work and any possible opportunities for me to get involved in your research. Any time that would be convenient for you would be fine with me, as meeting with you is my first priority during this campus visit.

Thank you in advance for your consideration.

Sincerely,

[Student’s full name inserted here]
67% response rate
Total n = 4387

Business (62%)
Education (65%)
Human Services (71%)
Health sciences (57%)
Engineering/Comp Sci (59%)
Life sciences (61%)
Natural/physical Sci & Math (64%)
Social Sci (68%)
Humanities (75%)
Fine Arts (74%)
White males more likely to get a response in 9 of 10 disciplines

67% response rate
Total n = 4387

- Business (62%) +20%
- Education (65%) +17%
- Human Services (71%) +13%
- Health sciences (57%) +10%
- Engineering/Comp Sci (59%) +10%
- Life sciences (61%) +7%
- Natural/physical Sci & Math (64%) +5%
- Social Sci (68%) +2%
- Humanities (75%) +1%
- Fine Arts (74%) -16%

Size of discriminatory gap: Response rates for White Men relative to Women/Minorities

Milkman et al 2015
MCB Andrade 2016
Other studies: Bias & compromised assessment

- Orchestra auditions & musical talent
  - Golden & Rouse 2000
- Assessment of leadership ability/qualities
- Reactions to leaders
  - Eagly et al 1995; Butler & Geis 1990
- Paper acceptance rates
  - Tregenza 2002
- Letters of recommendation
- Student evaluations of instructors
  - Basow 1998; McPherson et al 2009; Reid, 2010; MacNell et al 2014
- Assessment of scientific competence
- Invitations to give plenary talks
  - Tower 2008
- Nominations (& elections) to prestigious societies, (award) of prestigious prizes
  - Lincoln et al, 2012; EOS editorial, Am.Geophysical Union, 2011
- Assessment of leadership ability of black leaders (vs. whites)*
  - Rosette et al 2008; Knight et al 2003
- Career mobility of black executives (vs. whites)
  - Guest, 2016
- Call-backs/job offers for black vs. white entry-level applicants
- Assessment of pain, treatment & empathy for black patients (vs. whites)
- Attribution of success to talent/luck (black managers vs. whites)
  - Greenhaus & Parasuraman 1993
- Distinguishing armed or unarmed black civilians (vs. whites, hispanics, asians)*
  - Sadler, Correll, Park, & Judd, 2012

And many, many more...
Moving forward

- Kirwan Institute
- Google Re:Work
- Biasinterrupters.org
- Education Advisory Board
- Cook-Ross Diversity Best Practices
- Catalyst
- CRC Secretariat
- CIHR
- Proceedings of the Diversity and Inclusion Innovation Forum
- The Lancet, 2019, v.393 (1071)
Many organizations have codified best-practice for minimizing effects of bias

Policy is only effective if:

* **Individuals** understand underlying issues & value the goals

* **Everyone** is responsible for equity

* **Leaders** inspire & model a commitment to equity

---

Education Advisory Board, Breakthrough advances in Faculty Diversity 2008
## Moving forward

- Diverse teams & review boards
- Equity targets & monitoring
- Clear Decision-making processes

### Structural

- Education about bias

### Personal

- Source monitoring
- Recognize signs of bias
- Bias Interrupters:
  - Shift the conversation
  - Reflective decisions
Moving forward: **Structural**

**Institutional responses:**

1. Equity of outcomes monitored
   - *Evaluated relative to targets*
2. Diverse committees
3. Education about bias
4. Structured decision-making processes
   - (5. Blind review)

---

Moving forward: Structural

Swedish Medical Research Council Grant applications (2004)

Reviewer score

Gender-blind Total Impact

11 years later

Sandstrom & Hallsten 2008
Is active attention necessary?

Nepotism and sexism in peer-review

Wenneras & Wold 1997

No Interventions

Sandstrom & Hallsten 2008

Persistent nepotism in peer-review

15% ‘bonus’

No Change
Is active attention necessary?

ATLAS Data: E. Burchard/S. Oh *Minorities include African American, American Indian, Asian & others

Ginther et al 2011
Is active attention necessary?

Persistent racial gap in rate of success for NIH grants

ATLAS Data: E. Burchard/S. Oh *Minorities include African American, American Indian, Asian & others
Assessing excellence: gender bias

2014 - 2015
Excellence of Researcher

2016
1. Targets
2. Unconscious bias Training Module

Success Rate (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>2015</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>2016</td>
<td>16</td>
<td>12</td>
</tr>
</tbody>
</table>

4%

Witteman et al 2017
### Moving forward

<table>
<thead>
<tr>
<th>Structural</th>
<th>Personal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diverse teams &amp; review boards</td>
<td>Education about bias</td>
</tr>
<tr>
<td>Equity targets &amp; monitoring</td>
<td>Recognize signs of bias</td>
</tr>
<tr>
<td>Clear Decision-making processes</td>
<td>Monitor Sources</td>
</tr>
<tr>
<td></td>
<td>Bias Interrupters:</td>
</tr>
<tr>
<td></td>
<td>• Shift the conversation</td>
</tr>
<tr>
<td></td>
<td>• Reflective decisions</td>
</tr>
</tbody>
</table>
Implicit association tests

https://academics.skidmore.edu/blogs/vids/

www.toronto-tide-ca