



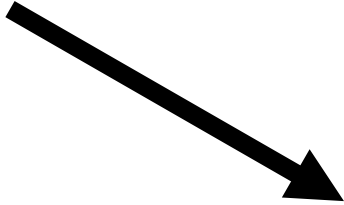
MUST/RESOLV Gender and Science Meeting 2019

The initiation of unconscious bias training at research institutes

Dr. Nadine Afram

Unconscious bias

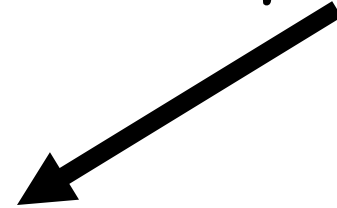
cultural
environment



background



personal
experience



familiar/
unfamiliar



almost instantaneous decision

We all use categories (or stereotypes)—of people, places, things—to make sense of the world around us. **"Our ability to categorise and evaluate is an important part of human intelligence. Without it, we couldn't survive."**
(M.R. Banaji)

ingroup



outgroup

Decisions that need rational thinking are often wrong.

If 5 machines need 5 minutes to produce 5 things, how much time do 100 machines need to produce 100 things?

Harvard Implicit Bias Test (Project Implicit)

<https://implicit.harvard.edu/implicit/education.html>

Gender-Career IAT

Gender - Career. This IAT often reveals a relative link between family and females and between career and males.

Native IAT

Native American ('Native - White American' IAT). This IAT requires the ability to recognize White and Native American faces in either classic or modern dress, and the names of places that are either American or Foreign in origin.

Weight IAT

Weight ('Fat - Thin' IAT). This IAT requires the ability to distinguish faces of people who are obese and people who are thin. It often reveals an automatic preference for thin people relative to fat people.

Race IAT

Race ('Black - White' IAT). This IAT requires the ability to distinguish faces of European and African origin. It indicates that most Americans have an automatic preference for white over black.

Religion IAT

Religion ('Religions' IAT). This IAT requires some familiarity with religious terms from various world religions.

Presidents IAT

Presidents ('Presidential Popularity' IAT). This IAT requires the ability to recognize photos of Donald Trump and one or more previous presidents.

Weapons IAT

Weapons ('Weapons - Harmless Objects' IAT). This IAT requires the ability to recognize White and Black faces, and images of weapons or harmless objects.

Skin-tone IAT

Skin-tone ('Light Skin - Dark Skin' IAT). This IAT requires the ability to recognize light and dark-skinned faces. It often reveals an automatic preference for light-skin relative to dark-skin.

Gender-Science IAT

Gender - Science. This IAT often reveals a relative link between liberal arts and females and between science and males

Press "E" for

Male
or
Family

Press "I" for

Female
or
Career

Children

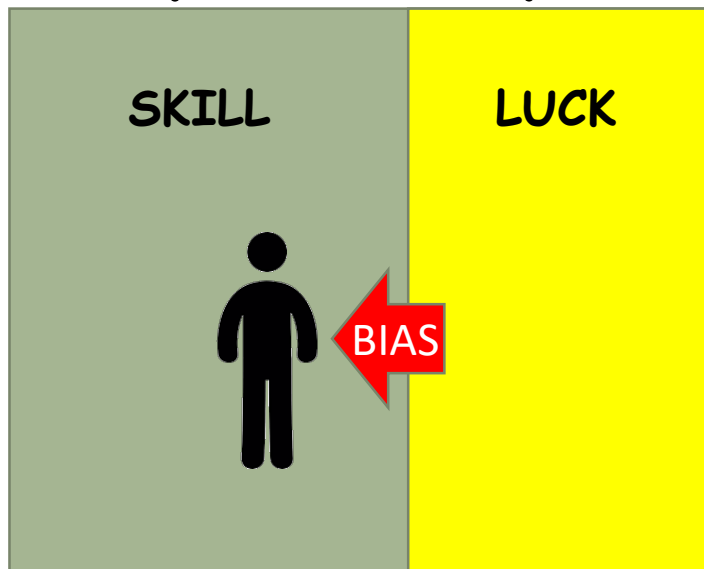
If you make a mistake, a red **X** will appear. Press the other key to continue.

Types of biases

Attribution bias

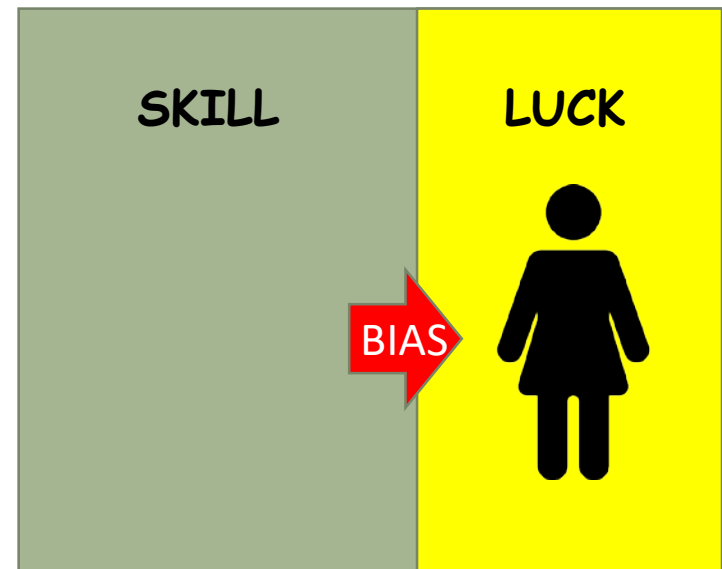
Success is attributed to...

...personality



«He is capable»

...external circumstances



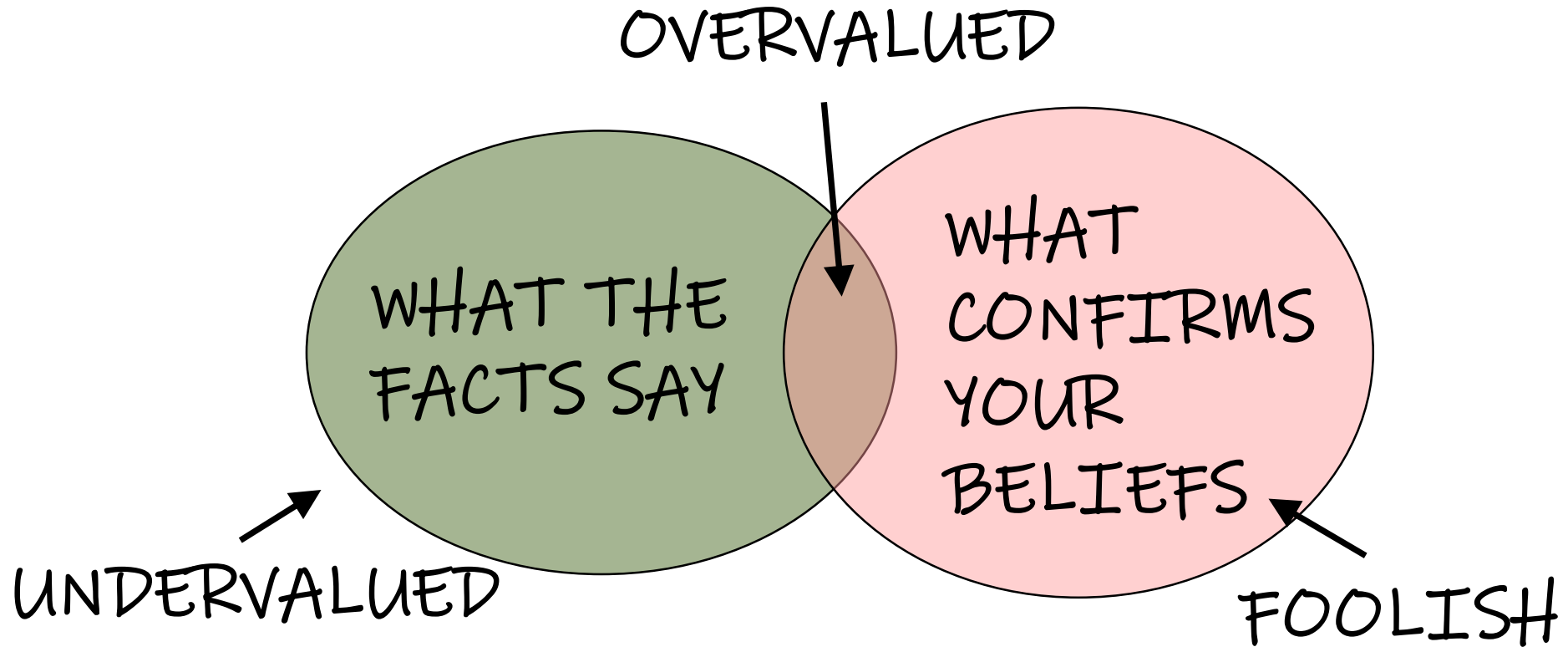
«She has a good team»

Example: In evaluation processes, the same background is interpreted differently

	Interpretation for woman	Interpretation for man
“Applicant is expert in one field”	She is limited .	He is profound .
“Applicant has experience in various fields”	She is shallow .	He is extensive .
“Applicant is successful”	She is ambitious .	He is excellent .
“Applicant publishes a lot with others”	She is dependent .	He has a strong network .

From presentation by Anna
Wahl (KHT Stockholm),
SNSF conference 2016,
Pern Kandola, 2014

Confirmation bias



Where do we see
gender bias in
Academia?

Classroom, lab, field:



Perception/Evaluation



Treatment



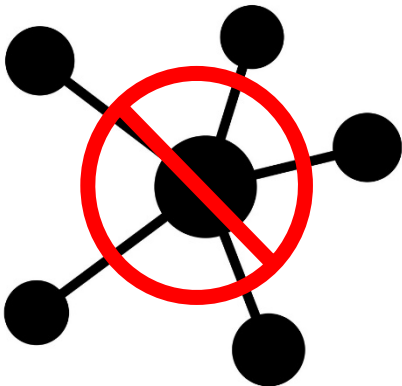
Grades

Assessment procedures:



From: ,Implicit bias in
academia', LERU (League of
European Research
Universities), 2018

Other examples



Recommendations

Raise awareness/question stereotypes

Change culture by university leadership

De-bias wording in job advertisements

Briefing selection committees

Transparent selection processes (same criteria)

Slow down decision making

External evaluators

Bias observers

e.g. from: 'Implicit bias in academia', LERU (League of European Research Universities), 2018

Include administrative staff in bias training

AURA

(The Association of Universities for
Research in Astronomy, US mainly)

30 minutes talk about
unconscious bias at the yearly
meeting before every selection
process

Not just in Academia...

Bias is built into our
daily lives

What are the
symptoms of a heart
attack?



From: Invisible Women,
Caroline Criado Perez

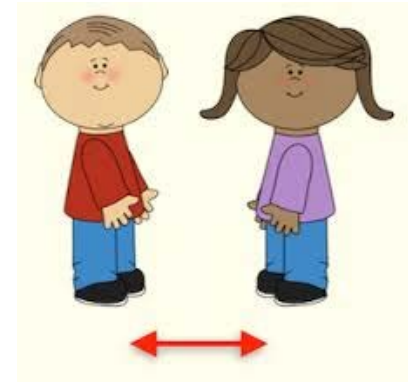
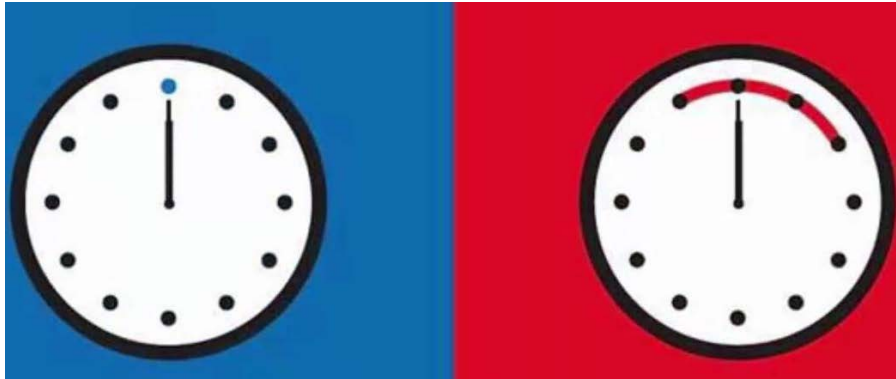
Cultural bias

Cultural bias

“phenomenon of interpreting and judging phenomena by standards inherent to one's own culture”

Cultural differences

different attitude towards time, space, others



different nonverbal communication



Unconscious bias training



Members

160



Women

31%



Berne

Geneva

Zürich

90% Astrophysicists

10% Geophysicists

Introduction of unconscious bias

Talk by T. Brage, a **Physicist showing proof of unconscious bias.**

Newsletter with articles including EO

Discussions at diversity lunches

Internal articles to raise more awareness

What doesn't work in our group

Speaker not tailored to group needs

Judging and accusing

Too theoretical

Lecturing

Effects of bias training

Allies

Large awareness

Sensitivity increased

Insecurity (what is OK?)

Denial ('we are objective')

"It is evolutionary necessary"

Lessons learned

Repetition needed

Tailored to audience

Speaker respected in the field

Ask for input! Get people on board!

Include administration

Survey at the NCCR **PlanetS**

Very short email

Very short survey

1/3 of the group responded

Hot topic

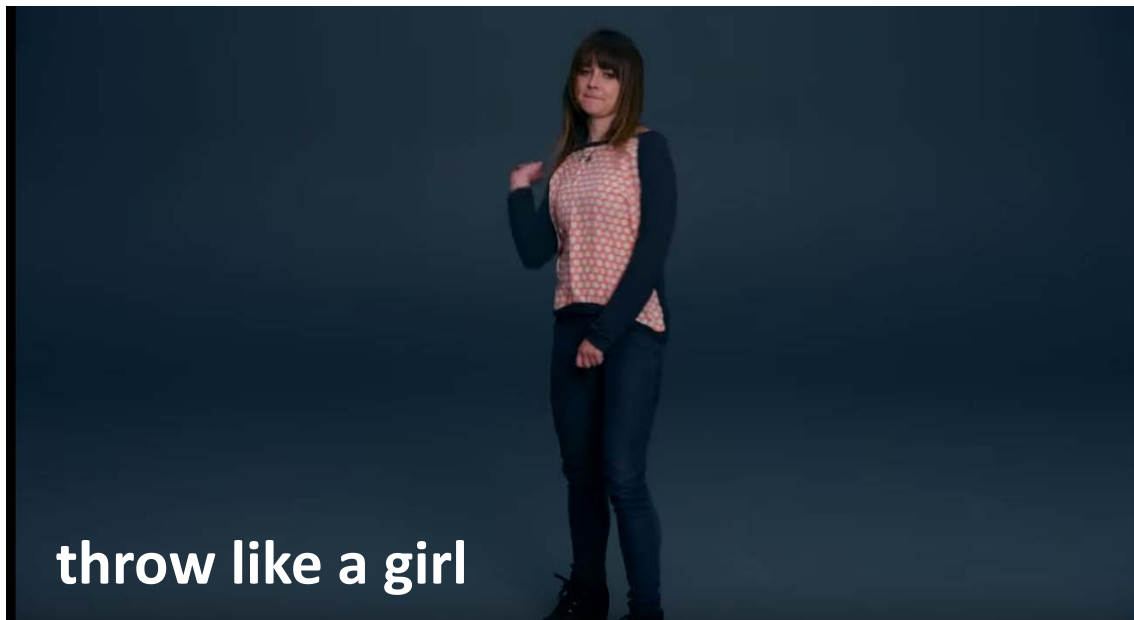
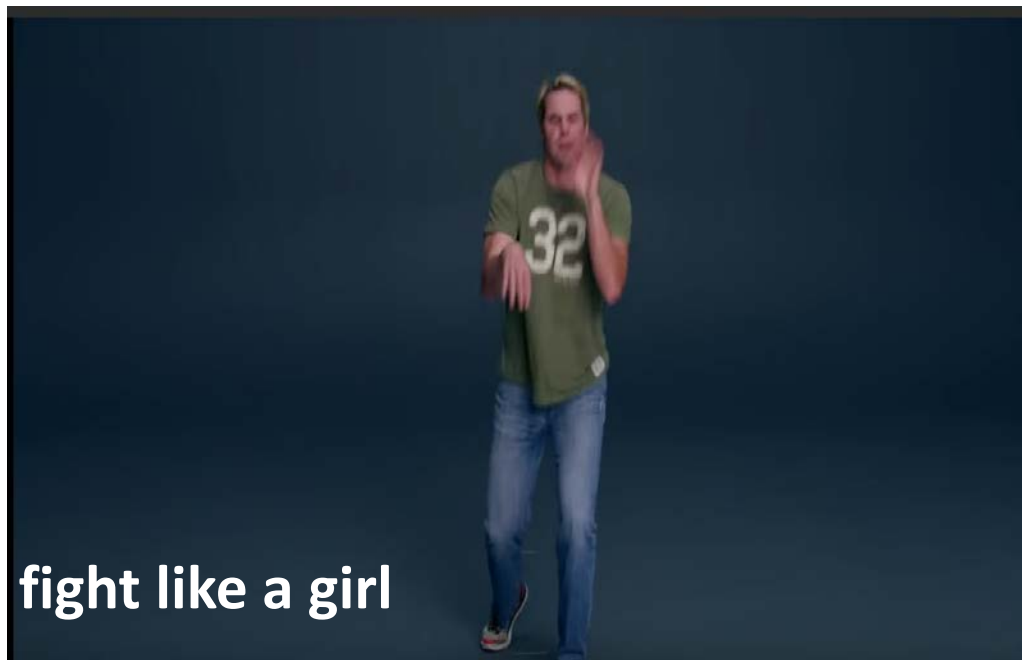
Survey asks for advice: ,in your
experience,...‘

A father and his son are involved in a horrific car crash and the man died at the scene. But when the child arrived at the hospital and was rushed into the operating theatre, the surgeon pulled away and said: “I can’t operate on this boy, he’s my son”.

Bias is also based on
stereotypes

Always commercial

WHAT DOES IT MEAN TO DO SOMETHING
“LIKE A GIRL”?



run like a girl



fight like a girl



throw like a girl

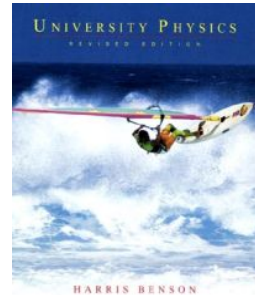


Generating Stereotypes

23. What arrangement of mirrors would produce the multiple images of Ann Margaret shown in Fig. 35.51?



FIGURE 35.51



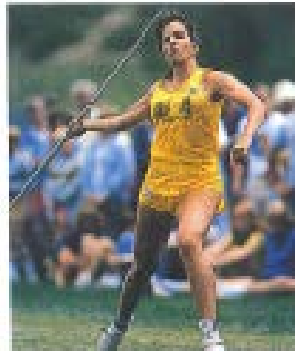
Benson

From presentation ,What does gender have to do with Physics?' (T. Brage)

Pictures of women



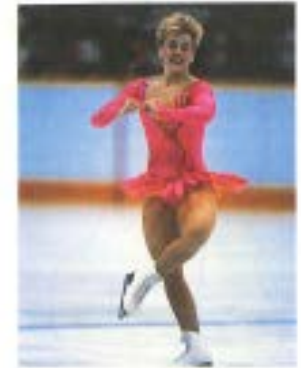
What do you notice about the front wheel?



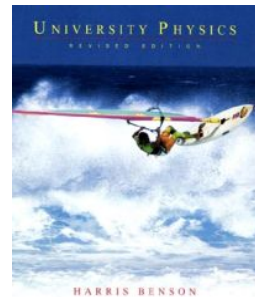
The net work done on the javelin is equal to the change in its kinetic energy.



During a grand jeté, a ballet dancer appears briefly to "float in air". However, the center of mass still follows a parabolic path.



Elizabeth Manley controls her angular speed by varying her moment of inertia.



Benson

Taken from presentation
,What does gender have to
do with Physics?' (T. Brage)

Pictures of men



FIGURE 9.1 René Descartes (1596–1650)



FIGURE 1.8 Johannes Kepler (1571–1630)

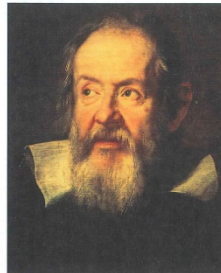


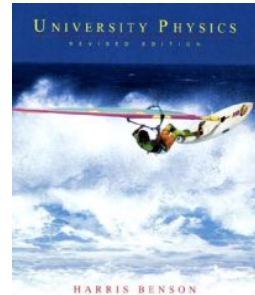
FIGURE 1.9 Galileo Galilei (1564–1642)



FIGURE 5.1 Sir Isaac Newton (1642–1727)



FIGURE 6.2 Gottfried W. Leibniz (1646–1716)



Benson



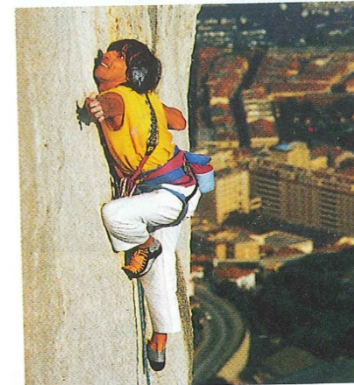
(b)



Although the mass of Edwin Aldrin, Jr., had not changed, his weight on the moon was roughly one-sixth his weight on earth.



A weightlifter does work to lift weights but not to hold them at rest.



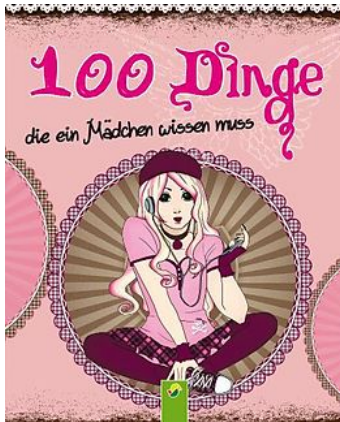
The climber has done work to increase his potential energy.

From presentation ,What does gender have to do with Physics?' (T. Brage,)

Stereotyping starts early: Gendered marketing

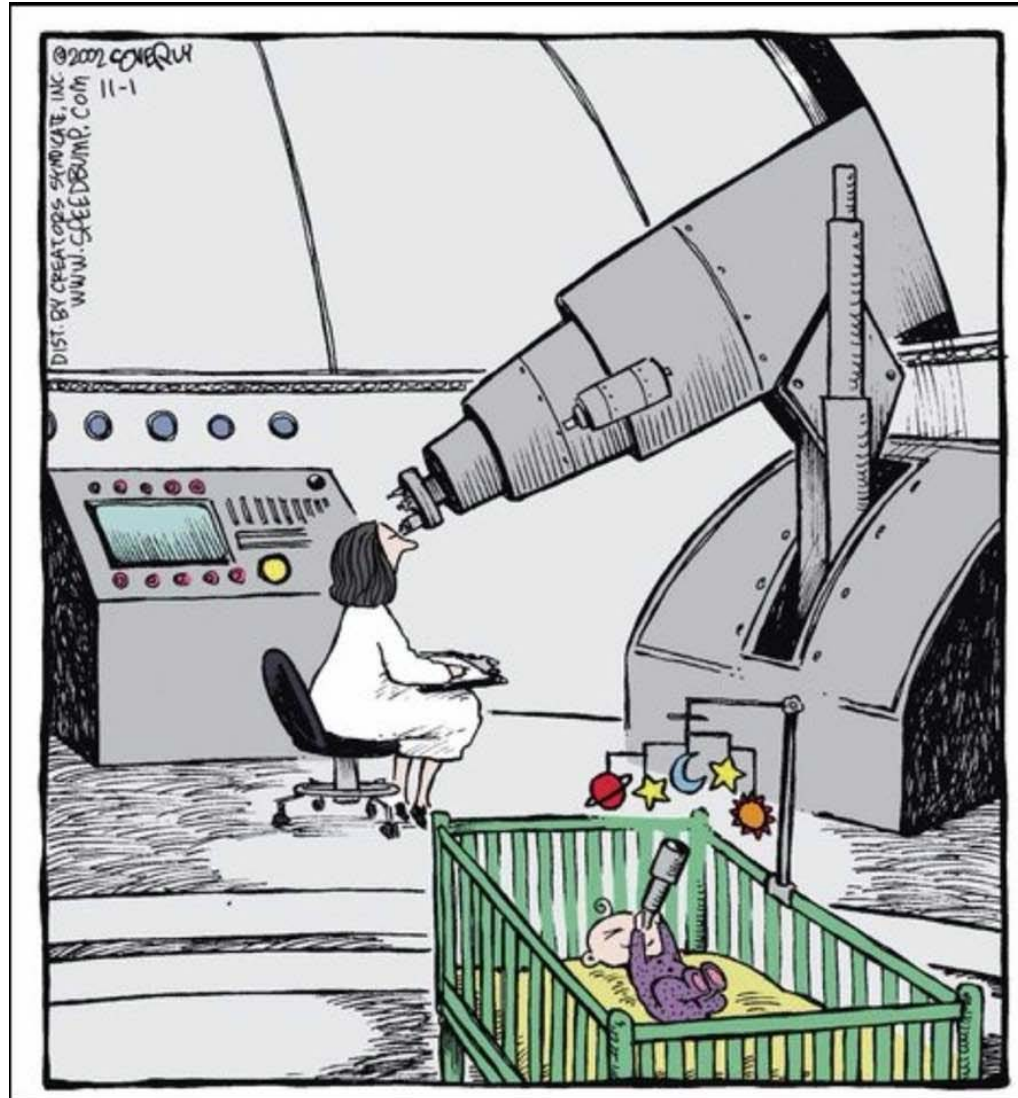


**‘100 things that a boy must know’:
how to fix a bike, how to make magic
ink, how to whistle.**



**‘100 things that a girl must know’:
100 tips around beauty, crafting and
recipes....how to remove chewing gum
from your hair, how to make your own
bathing salts**

We can all be role models



Group work

Scenario #1:

Male doctoral student is introduced to international colleagues at conferences, while female doctoral student is not.

Scenario #2:

Recommendation letter: Are there differences? Is there bias? What are indicators of bias?

Example: Avoiding gender bias in reference writing

Avoiding gender bias in reference writing

Got a great student? Planning to write a super letter of reference?
Don't fall into these common traps based on unconscious gender bias.

Mention research & publications

Letters of reference for men are 4x more likely to mention publications and twice as likely to have multiple references to research. Make sure you put these critical accomplishments in every letter!

Don't stop now!

On average, letters for men are 16% longer than letters for women and letters for women are 2.5x as likely to make a minimal assurance ('she can do the job') rather than a ringing endorsement ('she is the best for the job').

Keep it professional

Letters of reference for women are 7x more likely to mention personal life - something that is almost always irrelevant for the application.

Also make sure you use formal titles and surnames for both men and women.

Stay away from stereotypes

Although they describe positive traits, adjectives like 'caring', 'compassionate', and 'helpful' are used more frequently in letters for women and can evoke gender stereotypes which can hurt a candidate. And be careful not to invoke these stereotypes directly ('she is not emotional').

From: Commission on the
status of women, University
of Arizona

Emphasize accomplishments, not effort

Letters for reference for men are more likely to emphasize accomplishments ('his research', 'his skills', or 'his career') while letters for women are 50% more likely to include 'grind-stone' adjectives that describe effort. 'Hard-working' associates with effort, but not ability.

We all share bias

It is important to remember that unconscious gender bias isn't a male problem. Research shows that women are just as susceptible to these common pitfalls as men.

This is a problem for all of us - let's solve it together!

brought to you by:



THE UNIVERSITY OF ARIZONA

Commission on the
Status of Women

Research from Trix, F & Psenka, C. Exploring the color of glass: Letters of recommendation for female and male medical faculty. Discourse & Society, 2003; and Madera, JM, Hebl, MR, & Martin, RC. Gender and letters of Recommendation for Academia: Agentive and Communal Differences. Journal of Applied Psychology, 2009.



THE UNIVERSITY
OF ARIZONA

Be careful raising doubt

We all want to write honest letters, but negative or irrelevant comments, such as 'challenging personality' or 'I have confidence that she will become better than average' are twice as common in letters for female applicants. Don't add doubt unless it is strictly necessary!

Adjectives to avoid: Adjectives to include:

caring
compassionate
hard-working
conscientious
dependable
diligent
dedicated
tactful
interpersonal
warm
helpful

successful
excellent
accomplished
outstanding
skilled
knowledgeable
insightful
resourceful
confident
ambitious
independent
intellectual

Follow us at: www.facebook.com/uacsw

For an electronic copy of this graphic, see:
www.csw.arizona.edu/LORbias

From: Commission on the
status of women, University
of Arizona

Scenario #3:

During a meeting, the woman's voice or idea is ignored, later the male colleague's same idea is supported. What can she do?

Discussion: group work

- Have you experienced bias towards yourself?
- Have you caught yourself being biased or stereotyping?
- During your career, do you think unconscious bias helped or hindered you?
- Are there stereotypes about the country you live in?