

# UNCONSCIOUS BIAS

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# WHAT IS UNCONSCIOUS BIAS?

- Decisions and opinions are affected unconsciously by our own **backgrounds, experiences** and **cultures**.
- It occurs when our brains implicitly make judgements and assessments of people and situations.
- **Implicit bias** ~ unconscious bias: biases remain even when we become somewhat aware of them.

# ASSOCIATION TESTS

- One can take tests on **“implicit associations”**:  
<https://implicit.harvard.edu/implicit/selectatest.html>
- People who consider themselves liberal typically still demonstrate biases around race, gender etc.

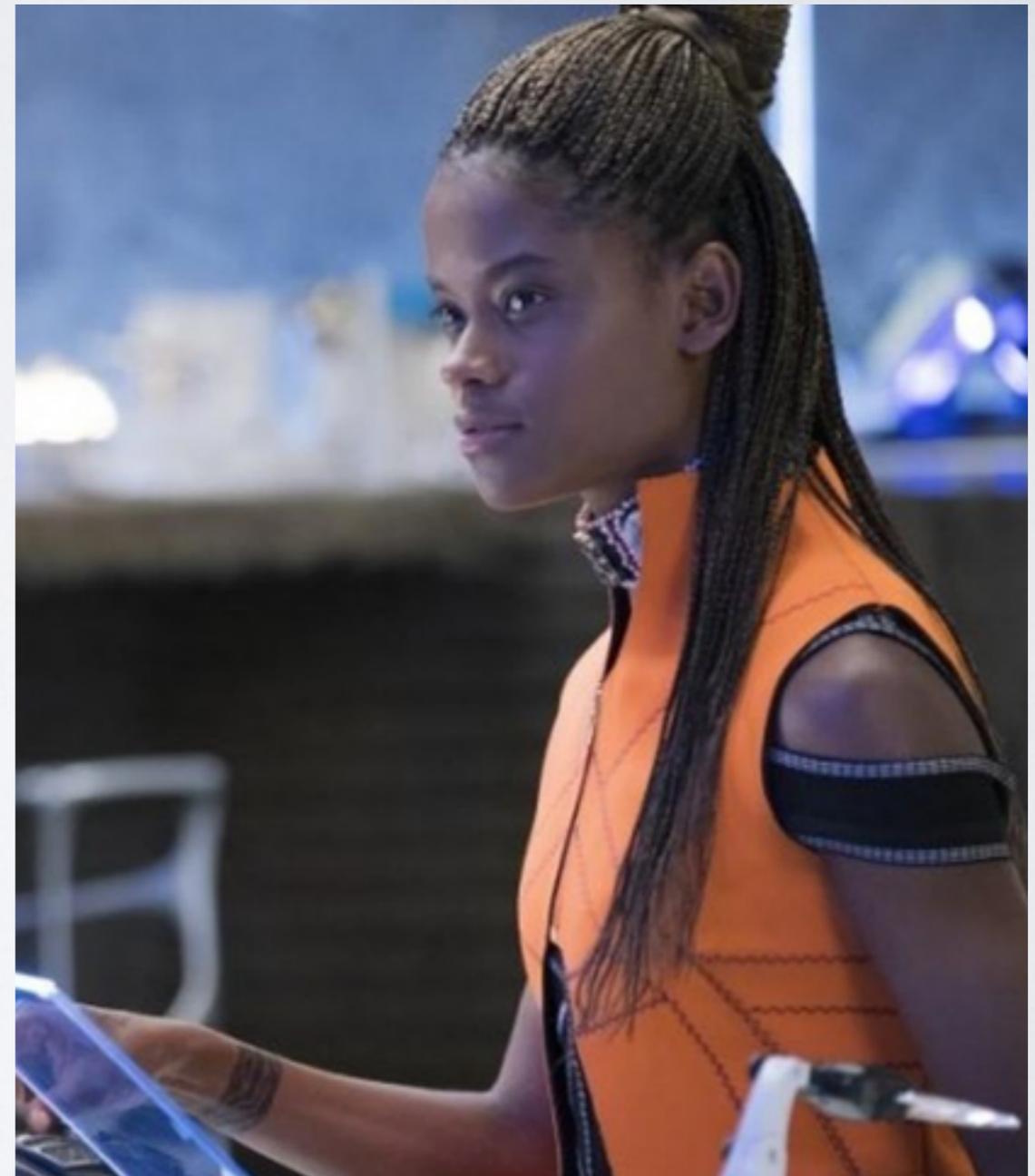


# WHAT IS THE TEST?

- Questionnaires measure associations between images and words, with response times recorded.
- E.g. participants associate science with white men; obesity with under-achievement.
- Does the test really measure biases?

# BIAS/EXPOSURE?

- In the UK there are 25 black female (full) professors (out of ~19,000 professors).
- Black women are ~1-2% of the population.
- Without role models and exposure, people will not associate black women with scientists/professors.



# STUDIES OF UNCONSCIOUS BIAS

- <https://www.ecu.ac.uk/wp-content/uploads/2014/07/unconscious-bias-and-higher-education.pdf>
- **Moss-Racusin et al 2012:** male applicants for senior lab role rated higher than female applicants, offered higher salary.
- Identical CVs (apart from male/female names); women scientists also rated male applicants higher.

# RESEARCH STUDIES

- **Racial bias:** Many European studies showing that people with European names are more likely to be shortlisted for jobs (in academia and elsewhere).
- **Bias in peer review:** Blind review/separate review of proposal and PI significantly increases success rate of women (Hubble, Ireland, Canada).
- [https://academic.ubc.ca/sites/vpa.ubc.ca/files/documents/Unconscious\\_Bias\\_Studies-and-Resources.pdf](https://academic.ubc.ca/sites/vpa.ubc.ca/files/documents/Unconscious_Bias_Studies-and-Resources.pdf)

# TEACHING EVALUATIONS

- Strong evidence that evaluations of courses by students are biased (March and Roche, review).
- E-course - no instructor contact - evaluated higher if given instructor name is male.
- Non-native speakers; race; LGBT+; disability; age; religion;.....

# BIASES IN PHYSICS

- **Presentation v Content:**  
advantages of native English speakers; orators
- *“His talk was really inspiring.....but I can't really remember what it was about.”*
- How much do job talks influence faculty hiring?



# BIASES IN PHYSICS

- **Scientific style:** intuitive “big picture”; computationally intensive e.g. NNLO, supergravity, string amplitudes.
- Do we implicitly prefer people with similar styles to our own?
- Is this actually a bias, when hiring postdocs on our grants c.f. when assessing fellowship applications?

# BIASES IN PHYSICS

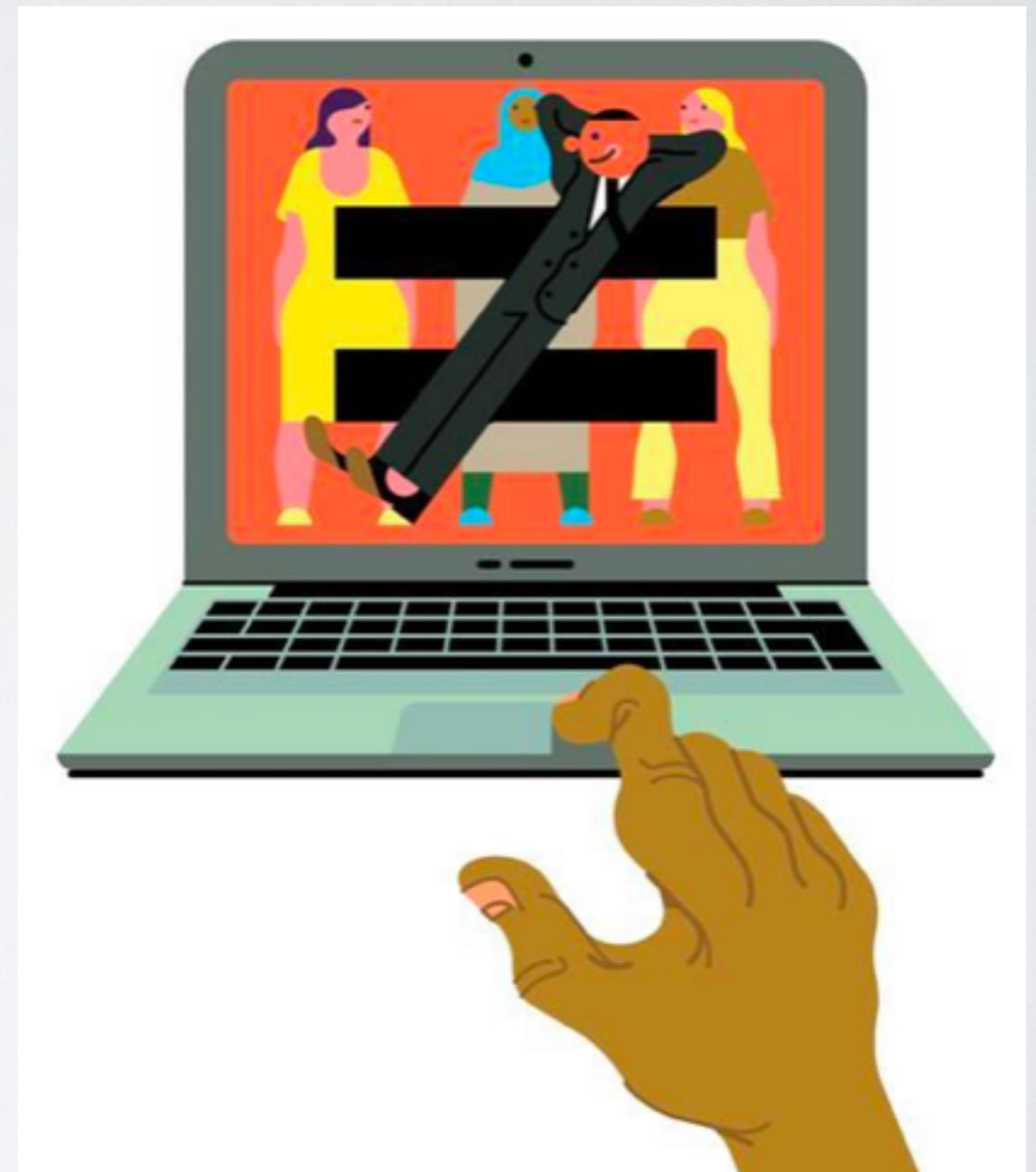
- **Networking and location:** students in top groups have more networking opportunities; their work is more likely to be known by senior leaders.
- Need to put achievements into context, to judge which postdoc candidates have the most potential.
- Researchers from Europe/US manifestly advantaged!

# ADDRESSING BIAS

- **1. Recognition of biases**
- 2. Actions to address biases (good practice, procedures)

# RECOGNISING BIAS: WHY?

- Being aware of biases helps makes **optimal decisions and judgements**.
- Common academic contexts: ranked shortlists for positions and grants; creating balanced conference programmes.



# MANIFEST BIASES

- [https://www.youtube.com/watch?v=O8UIW\\_Pi5wU](https://www.youtube.com/watch?v=O8UIW_Pi5wU)
- While female scientists do sometimes experience such manifest biases, many implicit biases would be much more subtle.

# IMPLICIT BIAS TRAINING: AWARENESS

- Reena Pau did a PhD in computer science with Wendy Hall.
- Worked on diversity in web science and AI.
- She now delivers implicit bias training to computer science departments and businesses.



# EXPLORING BIASES

- “Write down the names of your five closest colleagues/collaborators.”
- “Who are the ten colleagues/collaborators that you trust the most?”
- “What do these people have in common? How are they similar to you? As you increase the numbers, does the group become more diverse?”

# SUBTLE BIASES

- Discussion of McKinsey movie brings out related biases that are rather more subtle.
- **Family:** academics with family commitments may be implicitly discounted from nomination to leadership roles, not encouraged to apply for promotion.
- **Teams:** people from some groups find themselves implicitly put into certain roles e.g. administrative rather than decisive.

# ACADEMIC BIASES: EXAMPLES

- **1. Teamwork.** Professor works collaboratively with his students. One contributes most to writing papers; a second does most of the data analysis. He has implicitly pigeonholed them into these roles.
- **2. Plagiarism.** Professor realises he is less sympathetic when judging plagiarism cases involving certain groups of international students.

# ACADEMIC BIASES: EXAMPLES

- 3. **Religion.** Academic feels he may have lower opinions of work done by scientists who have strong religious beliefs.
- 4. **LGBT+.** Professor admits that he is uncomfortable and awkward interacting with openly gay students.

# ACADEMIC BIASES: EXAMPLES

- **5. Scientific style.** Academic whose work is very technical acknowledges that he may not fully appreciate more intuitive work when peer reviewing.
- In all of these examples, the biases are no longer unconscious....

# EXPERIENCES OF BIAS

- **1. Pastoral roles.** Academics implicitly steered into pastoral roles (student welfare etc) due to family circumstances e.g. father of four.
- **2. Part-time.** Academics who work part-time feel they are overlooked for leadership roles, and considered to be not serious about their careers.

# EXPERIENCES OF BIAS

- **3. Committees.** Minority groups do not feel their voices are heard on committees; senior men dominate the agenda and the conversation.
- **4. Mentoring and support.** Minority groups feel that senior academics champion staff who are like them.

# MICROAGGRESSIONS

- *“Indirect, subtle or unintentional discrimination against a marginalised group.”*
- Often difficult for marginalised groups to raise.
- My department has three Chinese professors - they are often confused by (European) students.....



# MICROAGGRESSION: EXAMPLES

- **Racial:** “So, what country are you really from?”
- **Gender:** Comments on appearance (even positive) in teaching evaluations; assuming that women are not academics, but administrators.
- May be individually minor but cumulatively significant.

# ACTIONS

- 1. Recognition of biases
- 2. **Actions to address biases** (good practice, procedures)

# STUDIES AND REPORTS

- League of European Research Universities  
<https://www.leru.org/files/implicit-bias-in-academia-full-paper.pdf>
- Strategies for addressing bias in workplaces  
<https://www.cookcross.com/docs/UnconsciousBias.pdf>

# POLICIES AND PROCEDURES

- Review recruitment and promotion procedures, from advertisements, to shortlisting, to interviewing.
- Monitor applications/shortlists/job offers/promotions by gender, race etc and explore significant discrepancies.

# BIASED LANGUAGE

## Gender Decoder for Job Ads

Without realising it, we all use language that is subtly 'gender-coded'. Society has certain expectations of what men and women are like, and how they differ, and this seeps into the language we use. Think about "bossy" and "feisty": we almost never use these words to describe men.

This linguistic gender-coding shows up in job adverts as well, and research has shown that it puts women off applying for jobs that are advertised with masculine-coded language.\*

This site is a quick way to check whether a job advert has the kind of subtle linguistic gender-coding that has this discouraging effect. [Find out more about how this works.](#)

<http://gender-decoder.katmatfield.com>

# ACADEMIC JOBS?

- Probably not so relevant for postdoc/junior faculty jobs in particle theory. (Mantra is apply for everything...)
- Changing language for advertisements has diversified applicant pool for senior academic jobs in the UK.

# INTERVIEWS - AFFINITY BIAS

- Jules and Jim are being interviewed for a position.
- Jules reminds you of yourself; you feel familiar with him; maybe he works on similar topics to you.
- He stumbles in the interview, but you intervene and put him at ease, and the rest of the interview goes well.

# INTERVIEWS - AFFINITY BIAS

- Jim's interview goes OK, but you don't really feel a connection with him.
- You didn't notice that he was nervous too, and you didn't step in to put him at ease.
- While you asked Jules and Jim the same questions and got very similar responses, you just have an overall feeling that Jules did better.

# GOOD PRACTICE

- Diversity on interview panels - scientific background, nationality, age, gender, race,....
- Standardised questions and format; transcribe summary of responses.
- Faculty positions: invite candidates to stay for several days.

# ROLE MODELS AND STEREOTYPES

- To recruit and retain minority groups, we need to show them role models.
- Images within institution; diversity in seminar series; minority groups visible in major events.
- Visitors can become mentors for students from minorities.



# MONITORING PROCEDURES

- The UK has linked monitoring and action plans for diversity to (some) research funding.
- Departments need to carry out self-assessments of quantitative data, policies, culture:  
[http://www.iop.org/policy/diversity/initiatives/juno/documentation/page\\_42632.html](http://www.iop.org/policy/diversity/initiatives/juno/documentation/page_42632.html)

# PAY GAP

- The UK government now makes all organisations with more than 250 employees report on pay, split by gender.
- Universities produce reports comparing pay, split by gender and career stage (postdoc, assistant professor, associate professor, professor...).
- E.g. Southampton [https://gender-pay-gap.service.gov.uk/  
Employer/4n4dGZjF](https://gender-pay-gap.service.gov.uk/Employer/4n4dGZjF)

# PAY GAP

- Female academics are paid (on average) 20% less.
- Far larger gap for women from racial minorities.
- Female full professors are paid 10-15% less than male full professors of comparable academic age/achievement.
- Complex interpretations: national pay scales for assistant/associate professors, but variations in rate of progress through scales. No national pay scales for professors!

Apart from applying institutional policies and actions.... what can individuals do to address bias?

# BIAS IN RECOMMENDATION LETTERS

- Recommendation letters play a huge role in appointments in high energy theory - postdocs are rarely interviewed!
- Many studies on bias in letters, particularly gender bias.

# 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').

## 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!

## 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').

## 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	successful
compassionate	excellent
hard-working	accomplished
conscientious	outstanding
dependable	skilled
diligent	knowledgeable
dedicated	insightful
tactful	resourceful
interpersonal	confident
warm	ambitious
helpful	independent
	intellectual

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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*



THE UNIVERSITY

Follow us at: [www.facebook.com/uacsw](http://www.facebook.com/uacsw)

For an electronic copy of this graphic, see:  
[www.csw.arizona.edu/LORbias](http://www.csw.arizona.edu/LORbias)

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# DEBIASING LETTERS AND REVIEWS

<b>Adjectives to avoid:</b>	<b>Adjectives to include:</b>
caring	successful
compassionate	excellent
hard-working	accomplished
conscientious	outstanding
dependable	skilled
diligent	knowledgeable
dedicated	insightful
tactful	resourceful
interpersonal	confident
warm	ambitious
helpful	independent
	intellectual

<https://www.tomforth.co.uk/genderbias/>

# UNCONSCIOUS BIAS TRAINING

- Increasingly grant and fellowship panels use unconscious bias training and briefings.
- See e.g. <https://www.youtube.com/watch?v=dVp9Z5k0dEE>
- See also <https://royalsociety.org/~media/policy/publications/2015/unconscious-bias-briefing-2015.pdf>

## Action points

- When preparing for a committee meeting or interview, try to slow down the speed of your decision making.
- Reconsider the reasons for your decision, recognising that they may be post-hoc justifications.
- Question cultural stereotypes that seem truthful. Be open to seeing what is new and unfamiliar and increase your knowledge of other groups.
- Remember you are unlikely to be more fair and less prejudiced than the average person.
- You can detect unconscious bias more easily in others than in yourself so be prepared to call out bias when you see it.

# EFFECTIVENESS OF TRAINING

- Unconscious biases are subtle, and hard for us to detect within our opinions and decisions...
- A lot of diversity training in academia has concentrated on unconscious biases - assuming that conscious biases no longer exist.
- MIT professor 1980s: *“It will take black people several generations to catch up [in academia].....”*

# HARASSMENT AND BULLYING IN ACADEMIA

## Bosses at leading UK science institute accused of bullying staff

Scientists allege Wellcome Sanger Institute management pressured workers to quit

**In the science lab, some bullies can thrive unchecked for decades**



▲ The Wellcome Trust Sanger Institute is one of the UK's most prestigious scientific centres. Photograph: PR

IN DEPTH | SCIENTIFIC COMMUNITY

## New case of alleged bullying rocks the Max Planck Society

Kai Kupferschmidt

+ See all authors and affiliations

Science 17 Aug 2018:  
Vol. 361, Issue 6403, pp. 630-631  
DOI: 10.1126/science.361.6403.630

## Less secrecy could help astronomy stop the bullying and harassment within its ranks

November 22, 2016 4:53am GMT

More needs to be done to protect people in astronomy from those who seek to abuse or harass others. Shutterstock/Alexxandar

Email

Twitter

88

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92

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Print

Shocking allegations of bullying, harassment and sexual assault at CSIRO's Astronomy and Space Sciences (CASS) division were revealed on Sunday by the ABC's [Background Briefing](#) program.

In CASS alone, the Radio National broadcast said there have been [16 investigations into professional misconduct](#) since 2008, including a sexual assault allegation that was referred to police.

# BYSTANDER TRAINING

- Increasing recognition that academia needs to address conscious biases and misconduct.
- (Active) bystander training: how to confront misconduct.
- Originally for harassment/sexual misconduct; can be broadened in scope to include (un)conscious biases.

# EXAMPLES

- **Grant panel:** a panel member seems to favour proposal due to affinity with applicant (shared nationality).
- **Conference organisation:** members of the organising committee are suggesting speakers only from their immediate circles.
- What do you do?

# POSSIBLE STRATEGIES

- **Grant panel:** objective criteria, peer reviews, ask panellist to justify their support, if unhappy with ranking try to discuss again.
- Often not easy, particularly if you need to challenge more senior academics!
- For more serious misconduct....

## ▶ Direct action

Directly intervene, for example, by asking the person to stop. Immediately act or call out negative behaviour, explaining why it is not OK.

## ▶ Distraction

Indirectly intervene, for example, de-escalating by interrupting or changing the subject or focus. Useful where the direct approach may be harmful to the target or bystander.

## ▶ Delay

Wait for the situation to pass and check in with individual. Take action at a later stage when you have had time to consider. It's never too late to act.

# Active Bystander Zone

## The 4D's

Strategies for intervention

## ▶ Delegation

Inform a more senior member of staff, for example, your Head of Department, Director or Manager. Use someone with the social power or authority to deal with it.

For further information please contact Su Nandy at [s.nandy@imperial.ac.uk](mailto:s.nandy@imperial.ac.uk) or visit the website [www.imperial.ac.uk/active-bystander](http://www.imperial.ac.uk/active-bystander)

# ACADEMIC TRAINING

- Many academics have low opinions of training courses: irrelevant, full of management speak.
- ACACIA project: scientists work with management coaches, HR teams to design and evaluate useful training for their disciplines.
- Incorporates addressing bias, but more generally it is about good leadership and working together optimally.

# ACACIA TEAM INCLUDES...



Human Resources team



Lynda Brown,  
Chemistry,  
and  
Pauline Leonard,  
Sociology



Mike Rushworth,  
Reveal Coaching,  
and  
Rachel Mills,  
Dean of Faculty  
Environmental and Life  
Sciences



# SUMMARY: NO EASY ANSWERS

- Implicit bias is pervasive; it is distinct but related to explicit bias.
- We all generally favour our own “ingroups”, regardless of our levels of educational attainment.
- By becoming aware of our biases, we can address them - and make better decisions and judgements.