Tackling Bias in Peer Review
Guidance for Board/Panel Members

If you have any questions about your role or the information contained in this guide, or if you would like this guide in a different format, then please contact equalitymrc@ukri.org.

Introduction

In preparation for your participation as an MRC board/panel member, this briefing is being provided to introduce you to the topic of bias.[1] It includes background to the topic as well as information about examples of biases you may encounter in peer review, along with some steps you can take to mitigate them.

There is a growing body of research showing that some groups perform less well than others in peer review (e.g. women, individuals from less prestigious institutions etc.).[2] And in some cases, MRC funding data reveal gaps in award rates between women and men, and ethnic minority and white applicants (Annex 1). Bias (both explicit and implicit) in peer review has attracted increased attention in recent years. And MRC strives to minimise its impact to ensure that it is not a contributing factor to these trends.

Reducing and challenging bias in peer review is critically important to ensure the integrity of the process and to help advance equity, diversity, and inclusion in our scientific communities. Part of your role as an individual is to help everyone participating in a board or panel manage these biases so that we can ensure fairness through the best possible decision-making.

The MRC Active Bystander Scheme

This guide was developed as part of the MRC Active Bystander Scheme, which aims to:

1. Help foster a culture of inclusion and active bystander intervention through a programme of awareness raising and training, supporting MRC Head Office staff and board/panel members to challenge biases and safeguard decision-making.

2. Contribute towards further robustness of funding processes and modelling best practice.

3. Ensure our professional meetings continue to be equitable and engaging for all.

4. Create an observable mechanism for reporting issues.

Every individual within the MRC and on our boards/panels has a personal responsibility for implementing and promoting our equality, diversity and inclusion principles in their day-to-day dealings with each other and in ensuring that decision-making is robust, free from bias and fair. By working together, we can create a safe and supportive working environment within our community where individuals are empowered and feel safe to speak up and challenge.

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[1] This briefing has been adapted from "An EPSRC Panel Members' Guide to Managing Unconscious Bias in Peer Review" developed by © Pearn Kandola (2017), a firm of business psychologists who have worked with a range of research funding organisations. In UKRI, this formed part of a portfolio of work looking at safeguarding EPSRC, MRC and other Councils' peer review processes.

[2] Bornmann, L. et.al. (2007); Smith, R. (2006); Haffar, S. et.al. (2019). Peters, D.P. and Ceci, S. (1982); Wenneras, C. and Wold, A. (2008); Politzer-Ahles, S. et.al. (2020); Day, T.E. (2015).
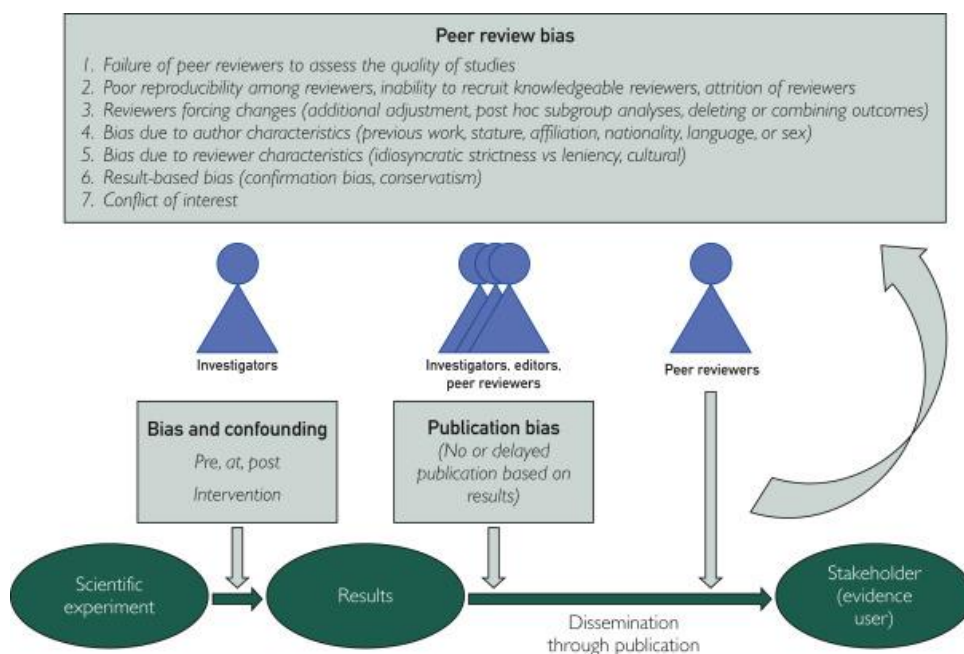
Bias overview

1. Types of bias

There are two main types of bias identified in the literature, both of which shape the judgments and decisions we make.[3]

Type of bias	Details
Explicit/ Conscious	• Person is very clear about their feelings, attitudes and preferences and can identify and communicate these to others. • Related behaviours are conducted with intent.
Implicit/ Unconscious	• Preference for or against other people or groups of people; operates outside of a person's awareness and can be in direct contradiction to their espoused beliefs and values. • These biases can affect our ability to be objective when making decisions without us ever knowing that they are having an impact.

2. Where bias is introduced

Bias could occur in many different stages of the peer review process, highlighted in Figure 1 below.

Figure 1: How the peer review process can introduce various types of bias[4]

Peer review bias
1. Failure of peer reviewers to assess the quality of studies
2. Poor reproducibility among reviewers, inability to recruit knowledgeable reviewers, attrition of reviewers
3. Reviewers forcing changes (additional adjustment, post hoc subgroup analyses, deleting or combining outcomes)
4. Bias due to author characteristics (previous work, stature, affiliation, nationality, language, or sex)
5. Bias due to reviewer characteristics (idiosyncratic strictness vs leniency, cultural)
6. Result-based bias (confirmation bias, conservatism)
7. Conflict of interest

Investigators

Investigators, editors, peer reviewers

Peer reviewers

Bias and confounding
Pre, at, post
Intervention

Publication bias
(No or delayed publication based on results)

Scientific experiment

Results

Dissemination through publication

Stakeholder (evidence user)

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[3] Daumeyer, M. et.al. (2019); Nosek, B.A. et.al. (2007); Rooth, DO. (2010); Green, A.R. et al. (2007).
[4] Image source: Haffar et.al. (2019)

3. Who is biased

Everyone is in some way bias. Some biases are more common than others, for example gender bias and ethnicity bias. But not everyone has the same biases.

4. Where do biases come from

These biases come from our:

- **Neurological programming** – Parts of the prefrontal cortex most strongly associated with recognising difference, processing threat, risk and fear, emotional associations, judgement, and decision-making.

- **Social programming** – Influence of past experiences with individuals and groups of people, as well as wider social influences; could include family, friends, and the media.

5. Examples of bias

Pearn Kandola have worked with several funding bodies, both in the UK and overseas. From their work with these organisations, they have identified a number of sources of bias that can impact peer review. Almost all of these examples are from UKRI.

Sources of Bias	Example
Anchoring Bias – relying too heavily on your first impression.	She interviewed superbly. It will be hard not to award her project funding.
Attribution errors – explaining away someone's positive or negative performance on external factors.	He may have some excellent publications, but he is lucky enough to be working with some very talented scientists.
Cognitive Load – Trying to process too much information in too short a time period.	A good example of this would be attending to emails during the panel meeting.
Confirmation Bias – The tendency to search for or interpret information in a way that confirms one's preconceptions.	I've always thought she was very sharp, is that other people's experience as well.
Contrast Effect – where proposals are directly compared against each other in order to arrive at an overall rating.	They've done quite well but difficult to score at the moment until we have heard about the others.
Groupthink – a social pressure for consensus.	Often identifiable by decisions for some proposals being taken very quickly and without challenge.
Halo/Horns Effect – Where only positive or negative evidence is discussed for each person or application.	Some discussions take on an overly positive or negative tone.

5.1. Groupthink

Groupthink occurs when the desire for harmony, conformity or closure within a group results in an irrational or sub-optimal decision-making outcome. It is characterised by group members seeking to minimise conflict and/or effort and reach a consensus decision without critical evaluation of alternative viewpoints. It is important that there is not a 'rush to consensus' or attempts to influence/cajole others into following the consensus.

Key approaches to avoiding groupthink are:

- **Shared airtime:** Every board**/**panel member having equal time to share their views.

- **Psychological safety:** Every board/panel member feeling able to share a different analysis without fear of harsh criticism.

- **Search for breadth rather than cohesion:** It is natural to search for a cohesive narrative ("The application/applicant is like this…") although this increases the risk of groupthink. Instead, it is more constructive to search for a full breadth of information ("What have we missed in this area? Are there any other insights?").

- **Willingness to constructively challenge:** Groupthink occurs when there is an artificial level of consensus because different opinions are hidden or shut down. Being prepared to openly share your own views, and to constructively challenge colleagues when there is a lack of evidence to support assertions, is important in minimising groupthink.

5.2. Authority bias

Authority bias has been observed in several Councils where the panel has defaulted to the view of the Chair without questioning or querying the decision.

The experience of the Chair is valuable for providing structure and shaping an efficient discussion. However, there were occasions where the Chair's guidance was overplayed, and had a direct influence on the scoring and decisions of the board/panel. The Chair, or in some instances highly experienced panel member, had a disproportionate influence on the group's decision. It is important to be mindful of this.

5.3. Reputation of reviewer

Within a disciplinary community, reviewers may be well known to board/panel members. This has led to some panel members using the reviewer's reputation as a guide and placing greater weight on this and should be avoided.

Whilst the reviewer may have a good reputation, this results in their reputation having a disproportionate influence for some applications and not others (i.e. where someone with a good reputation read one application, that application may benefit, but others with lesser known reviewers may be overlooked).

> **Example 1:**
>
> "(External Reviewer) is a really friendly guy – they would never say anything negative."
>
> **Example 2:**
>
> "(External Reviewer) looked at this proposal and another in the list. They did mark this one lower than another one in the list. Although the words were supportive for those…but that also gave me a steer I was on the right lines…"

5.4. Overreliance on memory

For some Councils, ranking decisions are sometimes based on memory and 'gut feeling' rather than evidence presented when initially discussing and scoring proposals.

For instance, when limited notes are captured from interviews and meetings, scores are based on memory of the interview and discussion and are therefore highly subjective. Decades of psychological research has shown that we can be very confident in our ability to recall what we hear but, in reality, we remember very little (e.g. one study found from a one-hour interview, just 7% of the detailed behavioural evidence was recalled). The gaps are filled in by our unconscious, based on our personal experience of the world and our overall impression of candidates etc.

'Recalibration' of scoring once interviews or meetings have been completed introduces the influence of subjective memory, personal biases, and social biases. This results in scores being changed later due to comments by others, rather than objective evidence collected. Memory is highly subjective, and the information we encode and later recall is shaped by our subjective lens of the world. Cognitive thinking errors, or biases such as Confirmation Bias, can lead us to encode information, and later recall information that fits with our expectations, or subjective view of the world, rather than what is actually said.

Therefore, revisiting scores later should be avoided as it introduces additional opportunities for bias to influence our thinking. Also make sure to take detailed notes where necessary to relate your scoring to the criteria if you are asked to recall.

5.5. Time pressure and need to reach closure

It is important to ensure sufficient time to complete assessments, as when under time pressure we default to quicker and more superficial thinking, rather than working through the criteria carefully. When we are placed under pressure to provide a decision, this also reduces our time to make it properly.

> **Examples:**
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> - Lunch and coffee breaks have been significantly pushed back or skipped due to time constraints, and some board/panel members have felt unable to comment on this.
>
>   **Tip:** Emphasise the importance of these breaks to recharge and remind the Chair if needed.
>
> - Board/panel members did not always adhere to the allocated timings for discussions, which impacted significantly on the agenda running to time, creating time pressure towards the end of the meeting.
>
>   **Tip:** Identify a timekeeper to assist with keeping to the agenda if needed and remind the Chair.

5.6. Overall impressions

Research has shown that when asked to provide overall impressions, the information shared is often highly subjective. Objectivity is increased when the individual is asked to discuss specific aspects of the application and/or candidate's performance.

> **Example:** After scoring, the lead interviewer is invited to share their overall impression of the candidate.

It is recommended that board/panel members are asked to discuss the evidence they collected against each criterion in turn, rather than speaking more generally. This will ultimately save time (by only focusing on the evidence that matters) and lead to a more focused discussion.

5.7. Priming

> **Examples:**
>
> - Lead interviewer shares their expectation for the interview, prior to the candidate entering the room: "He is a very highly regarded applicant. Top of everyone's list in the sifting panel… Very high reviews from external reviewers. This should be very strong."
>
> - Board member discusses the overall perceived quality of a funding application and knowledge of the applicant prior to it being formally introduced.

The above examples are a form of 'priming', which research has found can influence the subsequent thoughts and behaviour of others. For example, it can influence how the panel approach the interview (confirming the candidate's excellence or confirming their limitations) or funding application discussion. This leads to evidence being treated differently depending on the initial framing of the candidate/application/applicant (known

as Congruence Bias). Similarly, biases such as Confirmation Bias (looking for evidence that confirms an expectation) are likely to influence scoring.

This could also affect discussions and decisions in relation to funding applications within board/panel meetings so keep an eye out for it and challenge when it occurs.

5.8. Linguistic bias

Biases may also arise and be noted in written reviewer comments. In one example, a review received included the following:

> "It is a pity that the application is absolutely riddled with grammatical and spelling errors and while the surname of the PI suggests that English is not their first language it is a sure sign that the co-applicants are not engaged sufficiently to revise the application as required."

This is suggestive of what has been termed 'linguistic bias' whereby there is a chance the proposal could have been judged more harshly, regardless of content, due to the writing not meeting expectations for international academic English. There is a range of published research on this subject and in relation to non-native speakers facing disadvantage in academic publishing, for instance.[5]

5.8.1 Disability

In addition to this, certain disabilities or learning difficulties such as dyslexia could impact on a person's spelling, grammar, or ability to write in a coherent order. According to the NHS, approximately 10% of the British population has dyslexia to some extent and we need to ensure that this does not negatively impact on their chances for success.

An applicant shared with MRC staff that they have previously received comments on the quality of their written application from peer reviewers. The comments were unhelpful and distressing, impacted the applicant's confidence in the peer review process and put them at risk of being disadvantaged in the overall assessment of their application. The applicant had declared their disability within their CV, to ensure reviewers took it into consideration when assessing the application.

It is very important not to let elements related to written English detract from the content and quality of a proposal. Discrimination or unfair treatment on the basis of disability is also against the law under the UK Equality Act 2010.

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[5] See, for instance, Politzer-Ahles, S. et al. (2020)

5.9. Interview examples

Stereotypes – confidence and capability

Presentation styles should not influence scores. However, there have been several occasions where panels appeared to be influenced by the confidence of the candidate and assessed their capability more positively because of this.

> "He was very confident…"
>
> "I was impressed. He just owned it. You could throw anything at him and he could respond"
>
> "Yes, I wrote very engaging" [not linked to the criteria]

This is a form of stereotype – confident people are often seen as more capable than others, even though this is not a guarantee.

Stereotypes – years of experience

> "I had him down as very talented but at the moment too immature."

References have been made to some candidates being 'immature'. It is important that the age of the applicant or number of years post-doc is not used as a guide for 'research experience', as this is a stereotype. Instead, the focus should be on the evidence of the researcher's experience.

Stereotypes – accent bias

The Accent Bias Britain project has found that accent bias is pervasive in the UK. A long history of class-based social hierarchy has led to a hierarchy of accents, with some considered to be more prestigious and desirable than others. This becomes a problem when it impacts on a person's opportunities and life outcomes. For instance, if candidates are favoured for reasons of prestige rather than merit, this could lead to a vicious circle, whereby non-traditional candidates are discriminated against, reducing their visibility in high prestige contexts, and further stigmatising their accent.

In addition, as accent is not protected by the Equality Act 2010, it can function as a proxy for other forms of discrimination, for example against ethnic, class, or regional groups and act as a barrier to social mobility.

It's perfectly normal to have stereotypical reactions to accents. But if left unchecked, these can lead to discriminatory behaviour. It is important not to allow this to influence our decisions about whether someone is suitable for a Fellowship or performed well in an interview, for example. These should be based on objective criteria and deliberative thinking about their strengths and weaknesses.

It is best to focus on **what** someone is saying, **not how** they are saying it. If you are involved in the interview component of the funding application assessment process, we request that you complete this additional 15-minute interactive tutorial to raise your awareness of accent bias and help reduce its effects.

Strategies to manage bias

As a board/panel member, you play a pivotal role in managing bias in meetings and creating optimal conditions for fair and objective decision making. We expect everyone to identify and challenge bias in their meetings and throughout the peer review process. We aim to ensure that everyone involved feels they have a safe way to raise issues and that board/panel members work together with staff to create an active bystander culture across all levels.
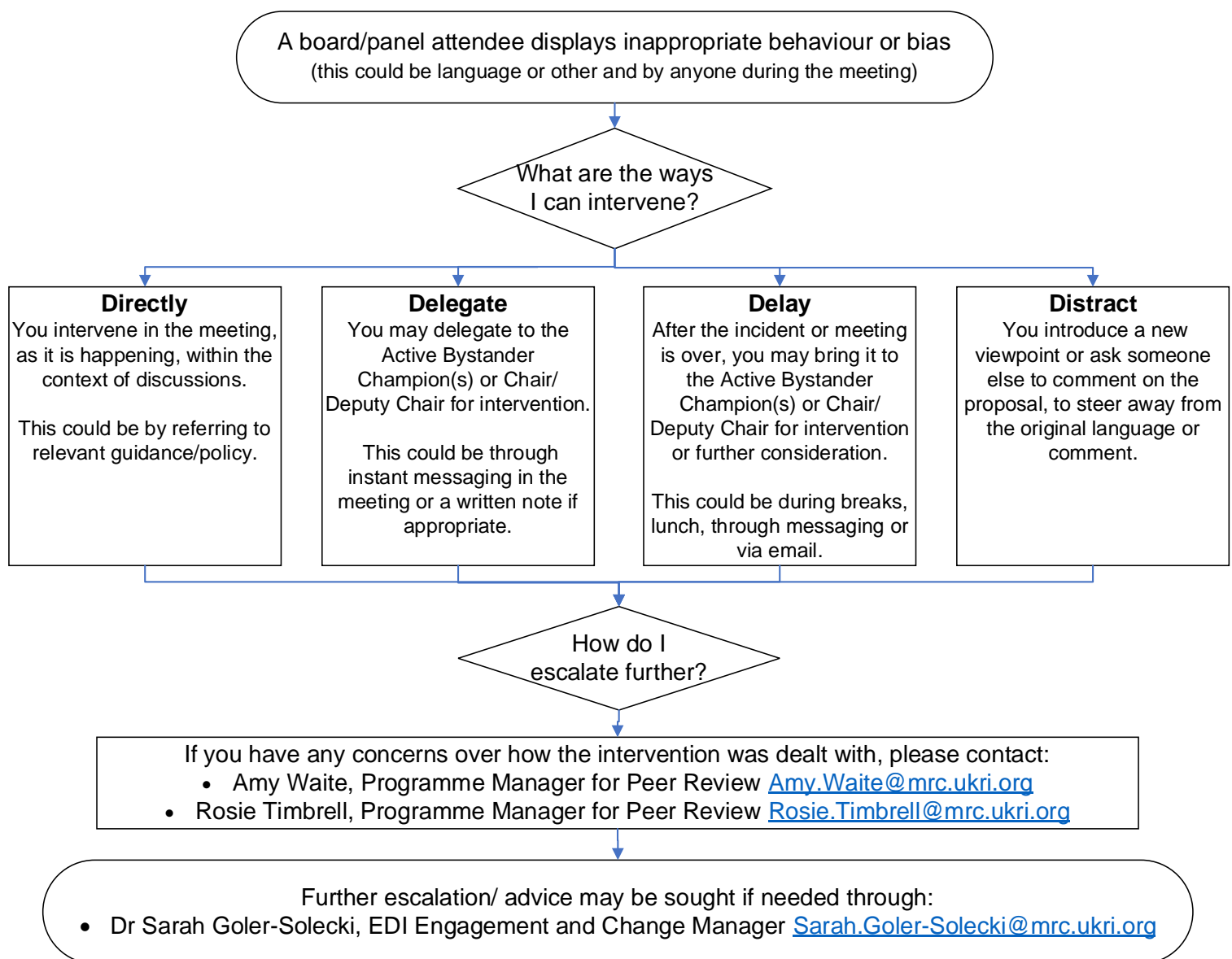
We can manage bias through creating an environment that limits it, and by recognising the fact that it exists and can affect the quality of our decisions. There are several approaches to managing bias in decision-making, the most important of which is awareness that your decisions are vulnerable to bias. We recommend you take the following steps during your board/panel activities:

1. **Consciously reflect.** Do not assume that your decisions will be objective. Reflect on the vulnerability to bias that all humans have. Take time to make decisions, don't feel under pressure to make quick decisions. Focus on fairness.

2. **Be consistent.** Following objective decision-making processes reduces the impact of bias. Ensure you have a clear understanding of the process, competencies and scoring process. Take notes and don't rely on memory, base decisions on evidence. Confirm that a sound rationale is provided for all decisions made. Scores should be justifiable against the provided rating scales.

3. **Challenge yourself, challenge others, and be receptive to being challenged.** It can be easier to spot bias in others than in yourself. You have a responsibility to speak up and be an active bystander if you suspect that it might be occurring. All board and panel members are encouraged to challenge each other respectfully, if needed.

4. **Be aware of bias.** Increase your awareness of bias and if you identify it in yourself or others, ensure you flag it.

5. **Question.** Never be afraid to question a decision, even as an observer.

6. **Practice inclusive meeting etiquette.** Please give everyone the floor and don't talk more than your fair share, don't interrupt others, and ensure that the right people are given credit for their contributions.

Intervention strategies

Up to three staff members have been identified as 'Active Bystander Champions' within each board and panel. A reminder of their contact information will be communicated at the beginning of each meeting. The Active Bystander Champions will undergo additional training and act as points of contact for anyone in the meeting to raise issues in the first instance

Upon witnessing biased language or behaviours, you could choose to intervene in any of the following ways or escalate as needed.

A board/panel attendee displays inappropriate behaviour or bias
(this could be language or other and by anyone during the meeting)

What are the ways I can intervene?

Directly	Delegate	Delay	Distract
You intervene in the meeting, as it is happening, within the context of discussions. This could be by referring to relevant guidance/policy.	You may delegate to the Active Bystander Champion(s) or Chair/ Deputy Chair for intervention. This could be through instant messaging in the meeting or a written note if appropriate.	After the incident or meeting is over, you may bring it to the Active Bystander Champion(s) or Chair/ Deputy Chair for intervention or further consideration. This could be during breaks, lunch, through messaging or via email.	You introduce a new viewpoint or ask someone else to comment on the proposal, to steer away from the original language or comment.

How do I escalate further?

If you have any concerns over how the intervention was dealt with, please contact:
- Amy Waite, Programme Manager for Peer Review Amy.Waite@mrc.ukri.org
- Rosie Timbrell, Programme Manager for Peer Review Rosie.Timbrell@mrc.ukri.org

Further escalation/ advice may be sought if needed through:
- Dr Sarah Goler-Solecki, EDI Engagement and Change Manager Sarah.Goler-Solecki@mrc.ukri.org

Annex 1: MRC board/panel award rates by gender and ethnicity

Data presented highlights averaged award rates by gender and ethnicity from the period 2015-2021.

Award Group	Male	Female
IIB	21%	22%
MCMB	19%	19%
NMHB	18%	15%
PSMB	18%	16%
DPFS	36%	25%
MRP (BMBR)	16%	15%
CARP	19%	15%
Clinical Fellowships	21%	26%
Non-Clinical Fellowships	12%	10%
Experimental Medicine*	40%	33%

Award Group	White	Ethnic Minority
IIB	21%	23%
MCMB	20%	10%
NMHB	18%	11%
PSMB	19%	10%
DPFS	31%	40%
MRP (BMBR)	16%	14%
CARP	19%	14%
Clinical Fellowships	24%	22%
Non-Clinical Fellowships	11%	13%
Experimental Medicine*	40%	13%

*Please note: Sample size in Experimental Medicine is very small as this is a newly established panel.

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