Equity and Inclusivity in Research Funding

Barriers and Delivering Change

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FOREWORD

At the University of Oxford we recognise that a diverse research community is needed to deliver innovative and rigorous research, and therefore it is vital that we create environments that enable all researchers to achieve their potential.

This report synthesises a detailed review of work across the research higher education sector with local experience and data to understand better the experiences of researchers, and the steps being taken by universities and research funders to improve equitable access to funding opportunities. It concludes that substantial work and change is required to address the exclusion and marginalisation of researchers in certain groups. These improvements are vital because access to research funding opportunities is often important for securing research independence and for facilitating career progression.

The report sets out recommendations for change at multiple levels within universities and at funders. I will lead on applying the findings and recommendations of the report here in Oxford through the identification and implementation of actions that are tailored to the specific improvements needed in our systems and practices. This process will commence immediately. I hope that the insights of the report might also provide inspiration and ideas for others in the sector.

The report findings are at times a challenging read, but it is only with a candid assessment and bold agenda for change that will we make progress to securing an equitable research ecosystem in which all researchers can thrive.

Professor Patrick Grant
Pro-Vice Chancellor for Research,
University of Oxford

Recent data releases from UKRI and other research funders have thrown into stark relief the inequities in our research funding systems, with minoritised researchers (such as women, people of colour, LGBTQ+ people and disabled people) being significantly under-represented amongst those receiving grant funding. This inequity has long been a grim reality in the experience of minoritised researchers.

The data show that minoritised researchers apply for funding at lower rates than their non-minoritised counterparts and their applications are less likely to result in funding awards. This inequity has been either ignored or addressed via schemes that aim to correct some perceived deficit in the minoritised researchers, overlooking the impacts of systems that are designed and structured to advantage a dominant straight, white, male, non-disabled demographic. Where systematic issues are acknowledged, there has been a tendency to pass the buck, with funders blaming institutional practices, and institutions blaming funder policies.

This report addresses minoritised researchers' experiences and understanding of the barriers they face in applying for and being awarded funding. It is time to listen to these minoritised voices. It is time to recognise systematic discrimination. It is time for funders and institutions to accept responsibility and take action.

This report provides recommendations for such actions to both funders and universities, and could provide a foundation for meaningful change, opening up our research funding systems to a more diverse range of researchers, thinkers and innovators. This will not only be fairer, but also increase the originality and impact of our research.

Professor Rachel Oliver FREng FIMMM,
Founder member of TigerInSTEMM,
The Inclusion Group for Equity in Research in STEMM

A NOTE ON LANGUAGE

When discussing diversity, choice of language is particularly important to avoid creating or contributing to negative perceptions and othering (ie treating a person as though they are different from, and do not belong to, a group). The terminology used in this report has emerged from consultation within the University of Oxford including with the Race Equality Task Force[1] and with external expert reviewers.

The following language is therefore used throughout this report:

- Women researchers
- Disabled researchers
- Racially minoritised researchers
- LGBTQIA+ researchers[2]

Conflicting views were expressed around language used to describe racially minoritised researchers, including some expressing preference for "global majority", or "researchers of colour, racialised as BME[3]", as more affirming and less othering, while others preferred "racially minoritised" to acknowledge that minoritisation occurs through social processes of power and oppression. The phrase "racially minoritised" is used throughout this report in order to (a) include all researchers who are racially minoritised, including Gypsy, Roma and Traveller communities, and (b) ensure clarity to those in positions of influence over change.

Many of the barriers observed throughout this study apply to several or all the groups above. Where this is the case, the term 'marginalised researcher' is used to include people with any, some or all of the above characteristics. This terminology is often used in EDI[4] literature to reflect intersectionality[5] and to acknowledge the processes that actively lead to exclusion and marginalisation.

The authors appreciate that this language remains imperfect as it groups a diverse range of people and risks obscuring differences in experience between individuals with different identities. The approach taken in this report aims to identify where external factors operate in similar ways to exclude individuals with different characteristics, even though the ways in which an individual experiences those factors may be different. Where evidence arose in the analysis of clear differences in the nature of the barriers or experiences these are set out by characteristic.

The words and phrases 'equality', 'equity', 'equality of opportunity', and 'equality of treatment' are used throughout this report. 'Equality' is often used broadly in EDI literature to refer to all people having equal access to opportunities to fulfil their potential. However, it is sometimes interpreted as meaning to treat everybody in the same way. This interpretation does not take into account differing access needs or the differential impact of systemic and personal biases, inequalities arising from systemic and societal structures, and imbalances of power. The authors therefore use the term 'equity' to refer to an environment in which all people are treated fairly, accounting for their needs and positionality, to enable them to reach equal outcomes. This environment is considered to offer 'equality of opportunity'.

1 (Race Equality Task Force, University of Oxford, 2021)
2 An acronym that means lesbian, gay, bisexual, transgender, queer, intersex, and asexual/
   aromantic, with the "+" indicating inclusion of other identities related to sexual orientation
   and gender
3 BME is usually used to mean Black and minority ethnic people
4 EDI means equality, or equity, diversity, and inclusion or inclusivity
5 (Crenshaw, 1991; Collins & Bilge, 2020)

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1. EXECUTIVE SUMMARY

1.1 Background

A successful career in UK academic research currently depends on several key elements, including securing a post, publishing research, and securing research funding. These elements are interdependent, with success in one facilitating success in another. A growing body of data has exposed inequalities in the research funding awarded to different groups of researchers: women, racially minoritised, and/or disabled researchers[6], and, despite more limited data, researchers who are LGBTQIA+[7]. For example, the success rate for Black, Asian and Minority Ethnic applicants to Wellcome Trust is 6% lower than that for White applicants[8], with UKRI data showing that aggregated ethnicity data masks deeper problems for researchers racialised to certain ethnic groups (particularly Black applicants)[9]. For UKRI, the success rate by value for disabled applicants is 7% lower than that for non-disabled applicants[10].

This study explores the barriers to securing research funding that these groups experience, and proposes practical actions for change. The findings and recommendations are based on a detailed analysis of a sample of UK funding schemes, a review of international literature on equality and business practice, supported by sector-wide discussions with colleagues with expertise in EDI, and focus groups and interviews with individuals from the target groups within the University of Oxford.

Achieving an equitable and inclusive funding system requires coordination across all parts of the sector, including universities, academic departments, funders, academic societies, academic publishers, and individuals. Although some inputs of the study are domain-specific or career-specific, the recommendations represent good practice that can be applied to organisations globally.

1.2 Findings

Researchers in marginalised groups face systemic barriers to securing research funding that are created and controlled by funders and universities. The following specific barriers were identified:

- Barriers to access, including inaccessibility of documentation and systems, and requirements (eg around deadlines and eligibility) that exclude researchers in marginalised groups;

- Disparities in the availability of information, eg about opportunities and selection criteria, due to conversations being held in closed groups, access to which is typically based on existing relationships;

- Vulnerability to bias of both schemes and decision-making;

- Failure to account for structural inequality in decision-making;

- Assessment against a career trajectory and characteristics unrelated to research quality;

- The scale, importance, and low availability of support at all stages of the funding cycle;

- Limited understanding of EDI issues by decision-makers; and

- Increased burdens on researchers in marginalised groups.

Researchers experience these themes as cycles of inequality, both within the research funding system and more widely in the research ecosystem, leading to ever-increasing impacts on individual careers, and contributing to the lack of diversity evident at senior levels of academia.

6 UKRI, 2021; UKRI, 2021; Wellcome Trust, 2021
7 (Boustani & Taylor, 2020)
8 (Wellcome Trust, 2021)
9 (UKRI, 2021)
10 (UKRI, 2021)

1.3 Recommendations

The systemic nature of the lack of equity requires a systematic, coordinated approach from universities and funders, and the support and engagement of individual participants in the system. The recommendations in this report are intended as a prompt to enable universities, funders, and other organisations to reflect on how they may redress disparities and improve equity. Stakeholder feedback has highlighted the importance of review and accountability, and, critically, of co-production with researchers in marginalised groups. Recommendations are summarised in the table below, and stratified into those that may be readily implemented, those that require targeted effort, and those that may require higher levels of effort, providing opportunity for sector-wide collaboration.

Many universities operate internal funding schemes, and the recommendations for funders apply equally to these schemes as to external funders.

FOUNDATIONAL, OR LEGALLY REQUIRED

Universities	Funders
■ Collect data on any disparity in the characteristics of research funding applicants; ■ Provide adjustments and support, where required, for applying for research funding and carrying out research; ■ Ensure transparency, inclusivity, and accessibility of all opportunities, and events, and policies (eg on eligibility); and ■ Ensure that academic leaders, including PIs, are equipped and supported to deliver the highest standards of inclusive leadership.	■ Adapt documentation, systems, processes, requirements, and events to ensure that they are fully accessible and inclusive; ■ Adapt research funding information to ensure universal availability and access, and that they are sufficient for all applicants; ■ Ensure that community consultations are fully accessible, inclusive, and transparent, so that the outcomes benefit from a diverse range of voices; and ■ Use open recruitment for selecting reviewers and/or members of Peer Review Colleges.

REQUIRES TARGETED EFFORT

Universities	Funders
■ Support researchers to develop effective networks, including mentoring and sponsorship; ■ Provide research funding guidance and support targeted to the needs of researchers in marginalised groups; ■ Ensure that criteria and processes for internal selection are inclusive and fair, and are as simple and flexible as possible; ■ In decision-making at all stages, take steps to prevent bias and to account for the impact of structural inequality; and ■ Create research funding opportunities targeted at researchers in marginalised groups.	■ Minimise complexity (including the amount of support required) and increase flexibility of selection processes; ■ Rebalance assessment from past achievement towards potential to deliver the project, valuing a broader set of contributions to research; ■ Take steps to prevent bias from impacting decision-making, including minimising ambiguity in scoring systems, and checks to ensure that judgments adhere closely to assessment criteria; ■ Incorporate accounting for structural inequality into review and assessment; ■ Review policies that prevent submissions to address disproportionate impact on marginalised researchers; ■ Fund a broad range of accessibility project costs; and ■ Create research funding opportunities targeted at researchers in marginalised groups.

HIGHER EFFORT, PROVIDING OPPORTUNITY FOR SECTOR-WIDE COLLABORATION

| Universities	Funders
■ Incorporate considerations around structural inequality in career development reviews for researchers in marginalised groups;	■ Develop a range of inclusive and accessible tools and events to support researchers with networking, including both online and in-person, text and oral;
■ Establish and implement Universal Design principles specific to application processes and requirements for research funding schemes;	■ Establish and implement Universal Design principles specific to application processes and requirements for research funding schemes;
■ Ensure that staff, including researchers, are empowered to recognise their own biases, to understand the impact of diverse circumstances and the impact of structural inequality, and to implement this within their role(s); and	■ Ensure that those involved in the decision-making process are empowered to recognise their own biases, to understand the impact of diverse circumstances, to understand the impact of structural inequality, and to implement this within their role(s); and
■ Provide support for researchers who suffer mental and emotional consequences from discrimination.	■ Trial novel mechanisms for funding, such as hybrid lottery systems and anonymisation.

1.4 Conclusion

Change will take time and commitment from all organisations, but should deliver a more equitable and inclusive research funding system, as exhibited in a vignette in section 7.

The authors' hope is that this study will prompt senior managers at relevant organisations to examine their policies and processes and commit to collaborative actions appropriate for their context and transparent accountability for progress.

Shutterstock.com/gordenkoff
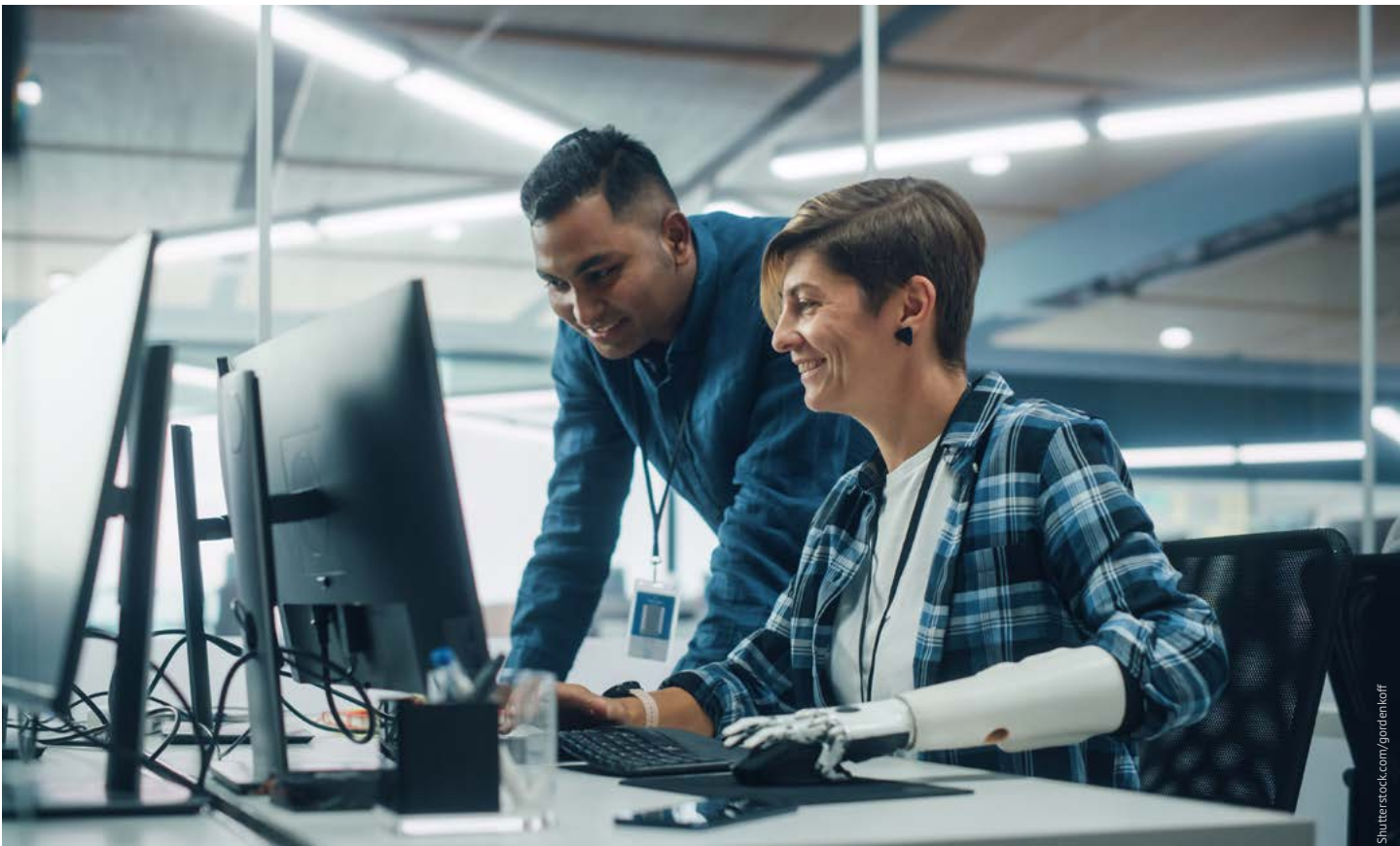
2. INTRODUCTION

2.1 About this report

In most disciplines, one of the central building blocks of an academic career is success in acquiring research funding as requisite for obtaining the resources necessary to carry out research. Despite this, data is clear that women are awarded less research funding, racially minoritised and disabled researchers suffer lower success rates, and LGBTQIA+ researchers face discrimination[11].

A growing body of evidence underscores that academia is not a meritocracy[12]. In academia, as in the rest of society, systemic barriers remain to limit the success of researchers in many marginalised groups[13].

As much research in the UK is funded at least in part by the taxpayer, it is vital that research and corresponding knowledge production serves the diverse community[14]. Who is funded to conduct research affects the design, framing, and topic of research, and consequently the outputs and impact on society[15]. As a result, lack of diversity in the research community harms people in marginalised groups in wider society.

This report analyses the results of a study into the barriers faced by marginalised researchers in accessing research funding and proposes a cross-sector approach to improvement. A high proportion of the research on bias, discrimination and inequity in academia has centred on STEM subjects, and within that on gender[16], with gradually increasing discussion of ethnicity. However, as evidence shows that multiple groups face disadvantage, this study considers all disciplines and the barriers faced by researchers who are women, racially minoritised, disabled, and/or LGBTQIA+.

Research consisted of:

- A scheme analysis in which all of the accessible documentation associated with a sample of 11 funding schemes was analysed, including both internal University of Oxford and external public and charitable funders;

- A review of international literature on equality theory and practice within academia and in wider business;

- Discussions with EDI experts across the sector; and

- Focus groups and interviews with self-nominating researchers and individuals who are no longer researchers (total 19), all in marginalised groups from the University of Oxford.

Factors forming the basis of analysis and interpretation were identified through a series of targeted discussions with researchers in marginalised groups, from across the UK, including University of Oxford EDI networks and Advisory Groups, and supported by the literature. Many of the findings in this report are generally applicable across career stages and disciplines, as the in-depth scheme analysis covered a wide range of schemes and funders. However, researchers self-nominated to participate in focus groups, leading to a cohort that was primarily early and mid-career researchers and did not include participants from the humanities (although they were eligible and invited to participate). The methodology used in the study, and list of schemes sampled, is set out in Appendix A.

Acronyms and specific terminology used in this report are defined in the Glossary in section 8, and the rationale for the choice of language is set out above.

The findings in this report are relevant both within and beyond the UK, and will inform the efforts of people within the sector including funders, academic societies, academic leaders, university managers, research support professionals, and academic publishers in improving equity, diversity and inclusion. It is not the intention of this report to be critical of any particular organisation or scheme, rather to explain where certain practices create barriers, and to highlight how good practice can be used to create a consistently equitable research funding ecosystem.

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11 (UKRI, 2021; Wellcome Trust, 2021; Murugesu, 2019; Swenor, Munoz, & Meeks, 2020; Boustani & Taylor, 2020)
12 (Zivony, 2019; Nafade, Sen, & Pai, 2019; Roper, 2019)
13 (Blackstock, 2020; Boustani & Taylor, 2020; Yerbury & Yerbury, 2021)
14 (Edge, Alson, & Ochu, 2021)
15 (Edge, Alson, & Ochu, 2021; Li, Bretscher, Oliver, & Ochu, 2020; Hoppe, et al., 2019; Botha, 2021)
16 (Bhopal & Henderson, Competing inequalities: gender versus race in higher education institutions in the UK, 2021)

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3. CONTEXT

Diversity data

Data and literature over the past 8 years show that in the UK:

- Women have broadly similar success rates to men, but receive awards of substantially lower financial value;

- Racially minoritised applicants experience persistently lower success rates and award values than white applicants;

- Success rates for disabled applicants are lower than for non-disabled applicants and the proportion of applicants who declare a disability is low; and

- Data in relation to LGBTQIA+ identities is typically not gathered and therefore disparities cannot be identified, however, literature provides evidence of discrimination within the sector.

Several funders now publish diversity data, which show persistent disparities in application rates and award/success rates between researchers with different characteristics. *The Diversity results for UKRI funding data 2014–15 to 2019–20*[17] shows that white Principal Investigators (PI), Co-Investigators (Co-I), and Fellowship applicants have had higher award rates than ethnic minority applicants in similar roles, with the difference for PIs in 2019–20 being 7 percentage points across all councils. Whilst in 2019–20 female and male applicants showed parity in award rate across the whole of UKRI, variations between Research Councils are significant. In particular, the EPSRC report *Understanding our portfolio: A gender perspective*[18] highlights significant differences in award rates for high financial value awards, with the award rate by value in 2018 being 35% for men and 26% for women[19], stating that "Award rates by value become increasingly divergent as grant value increases".

The UKRI data also highlights substantial differences in award values. Average award values are lower for ethnic minority PIs than for white PIs (median differs by 11%), and are lower for female PIs than for male PIs (median differs by 43%)[20]. These differences are replicated within research councils, and are therefore not due to disciplinary differences in research costs.

This ethnicity data groups a broad range of different ethnicities into a single category, and thus masks the largest disparities. Disaggregated ethnicity data shows that Black and Bangladeshi researchers fare significantly worse than other ethnic groups with lower awardee share than the population of academic staff [21]. The UKRI analysis does not examine the award rates of the disaggregated data "due to small numbers of awardees from ethnic groups comprising ethnic minorities, which limits the validity of comparisons amongst groups." However, data for the cumulative five-year award rate (2015–16 to 2019–20) shows that for PIs identifying as Black & Black British-African the award rate is 13%, in contrast to 30% for White – British PIs[22].

In 2020, EPSRC provided a comprehensive *Detailed Ethnicity Analysis*[23] that provides detailed information on applications, awards and award rates, disaggregating both by ethnic group and within each ethnic group. This report shows that, for most years, the award rate for Black PIs is 0% in contrast to the award rate for Asian (excluding Chinese) researchers that ranges from 33% to 19% across the reporting period.

Similar data is observed in *Wellcome Trust's Diversity, equity and inclusion strategy*[24], which shows that the success rate for Black, Asian and Minority Ethnic applicants is 6 percentage points lower than that for white applicants (8% compared with 14%). In particular, the strategy states that "in 2019/20, no awards were made to UK-based applicants reporting their ethnicity as Black or Black British."

17 (UKRI, 2021) – Diversity results for UKRI funding data 2014–15 to 2019–20 (EPSRC, 2020)
18 (EPSRC, 2020)
19 (Edge, Alson, & Ochu, 2021; Li, Bretscher, Oliver, & Ochu, 2020; Hoppe, et al., 2019; Botha, 2021)

20 Gender categories based on applicants' selection in Je-S with options of male, female, or not disclosed.
21 (UKRI, 2021) – Detailed ethnicity analysis of funding applicants and awardees 2015–16 to 2019–20
22 (UKRI, 2021) – Detailed data on the ethnicity category of UKRI funding applicants and recipients 2014–15 to 2019–20
23 (EPSRC, 2020)
24 (Wellcome Trust, 2021) – Diversity, equity and inclusion strategy

Data on applications, awards and award rates for disabled researchers is limited due to suspected low rates of disclosure, with 1–3% of applicants to research councils declaring a disability compared with HESA data of around 5% of academics being disabled[25]. Award rates for applicants disclosing a disability are lower than those for non-disabled applicants in most years from 2014–15 to 2019–20. Median award values for non-disabled PIs are higher than those for disabled PIs and in 2019–20 the difference in award rate by value was 7 percentage points[13]. For Wellcome Trust, the success rate for disabled applicants (10.7%) was lower than that for non-disabled applicants (13.4%) across the period 2016–17 to 2019–20[15] with only 3.8% of applicants in 2019–20 declaring disability[26]. For comparison, 20% of the working-age population have a disability[27]. There is evidence that non-disclosure contributes to the small size of the percentage of applicants who declare a disability due to fears that disclosure will result in negative experiences[28].

Very little data is available on LGBTQIA+ applicants and awardees as this is typically not gathered. Nonetheless, LGBTQIA+ researchers participating in this project have identified barriers that they experience in relation to their identity, and this is supported by wider data sets and research.[29] Intersectional data does not appear to be available from any funder. Whilst this would be extremely useful in highlighting intersectional inequalities, associated publications would be likely to be heavily redacted to avoid identifying individuals.

Prior work identifying barriers to research funding

Our study builds on, and extends, a substantial body of work examining the barriers to academic career progression faced by researchers in marginalised groups. Several of the subject-specific professional bodies and funders have carried out survey and interview-based studies[30]. The corresponding reports highlight unequal access to research funding as a key theme driving inequity in academic careers and set out barriers faced such as insecurity through short-term funding, narrow definitions of excellence, inadequate funding of leave, narrow and inflexible career paths, and, critically, the need for proactive measures.

TigerInSTEMM, The Inclusion Group for Equity in Research in STEMM, has published articles providing insights into the biases and barriers that affect women[31], racially minoritised[32], LGBTQIA+[33], and disabled researchers in securing research funding[34]. These reports provide considerable detail on the barriers faced by each specific group and support the findings in this report.

Building on the prior work, this study provides further evidence through a mixed-methods approach incorporating all disciplines[35], and bringing together the barriers and needs of four marginalised groups to propose actions to be implemented at each key stage of the funding cycle.

Current efforts

There is an increasing focus on the importance of equity, diversity and inclusivity (EDI) across multiple stakeholders including funders, government, and universities. UKRI recently closed a consultation on their first EDI strategy, which is expected to be published in summer 2023[36]. In 2021, the UK Government published its *Research and development (R&D) people and culture strategy*[37] and the UK Parliament Science and Technology Committee is holding an inquiry into *Diversity and inclusion in STEM*[38]. EDI features in the objectives and principles of the UKRI Research Council Delivery Plans[39] and in the strategies and plans for other public and charitable funders[40]. UKRI have recently published a call for applications for £4.5m funding to create an *Equality, diversity and inclusion caucus*[41]. Wellcome Trust recently published an evaluation of its Anti-Racism Programme and corresponding actions, concluding that Wellcome has failed to meet its commitments, "perpetuating and exacerbating systemic racism within the wider research sector which it operates"[42].

The Equality, Diversity and Inclusion in Science and Health (EDIS) group involves a range of public, private and charitable member organisations collaborating to improve EDI within science and health, and was established in 2017 by the Francis Crick Institute, Wellcome Trust, and GlaxoSmithKline[43].

25 (UKRI, 2021; HESA, 2022)
26 (Wellcome Trust, 2021) – Grant funding data report 2019/20
27 (Department for Work & Pensions, 2022)
28 (Solis, 2006; Mellifont, et al., 2019; Yerbury & Yerbury, 2021; UKRI, 2021)
29 (University of Oxford, 2021; Boustani & Taylor, 2020)
30 (Institute of Physics, Royal Astronomical Society, Royal Society of Chemistry, 2019; Royal Society of Chemistry, 2018; Royal Society of Chemistry, 2022)
31 (Jebsen, et al., 2019)
32 (Li, Bretscher, Oliver, & Ochu, 2020)
33 (The Inclusion Group for Equity in Research in STEMM (TigerInSTEMM), 2019)
34 (Boland, 2019)
35 The focus groups did not include humanities scholars, as none came forward to participate; however, humanities is represented in the scheme analysis.
36 www.ukri.org/what-we-offer/supporting-healthy-research-and-innovation-culture/equality-diversity-and-inclusion/edi-strategy/
37 (Department for Business, Energy & Industrial Strategy, 2021)
38 (UK Parliament Science and Technology Committee, 2022)
39 (AHRC, 2022 ; BBSRC, 2022 ; EPSRC, 2022 ; ESRC, 2022 ; Innovate UK, 2022 ; MRC, 2022 ; NERC, 2022 ; STFC, 2022)
40 (ERC, 2021; Wellcome Trust, 2020; British Academy, 2018; British Heart Foundation, 2022; Leverhulme Trust, 2022)
41 (UKRI, 2022)
42 The Social Investment Consultancy and The Better Org with Ngozi Cole, Lyn Cole, 2022
43 (Equality, Diversity and Inclusion in Science and Health (EDIS) group, n.d.)

UKRI commissioned an external consultancy to produce a guide to safeguarding peer review for the Future Leaders Fellowships scheme, to reduce the risk of bias in assessment. The size of funder does not seem to affect the level of commitment to improving inclusivity, although it does affect the resources available for EDI and the ease with which novel approaches can be implemented. The source of funding on which the funder relies seems to affect the appetite for risk taking in piloting interventions, with publicly funded organisations requiring a more robust evidence base before taking action.

UK universities are subscribed to a range of accredited schemes aimed at improving EDI, such as Athena Swan Charter, the Race Equality Charter, the Stonewall Workplace Equality Index, and the Disability Confident scheme[44]. Most universities work towards the Athena Swan and Race Equality Charters; however, engagement with the Stonewall and Disability Confident schemes is more variable. Universities' continued participation in these schemes is less certain than previously, with NIHR withdrawing requirements for award holders to participate in Athena Swan[45]; UCL deciding not to re-join Stonewall's Workplace Equality Index (and other universities coming under pressure to withdraw[46]); and the (then) UK Minister of State for Higher and Further Education inviting HE providers to reflect on their continued membership of these schemes, naming the Race Equality Charter in particular[47].

Despite the criticism, universities continue to include EDI objectives in strategic plans, develop and implement Action Plans associated with the various charter schemes[48], and to expand work on research culture. This is, perhaps, in part due to recognition of the value of EDI to research and that, being largely funded by taxpayers, it is important that knowledge produced reflects and serves the totality of the community. Many academics and students continue to volunteer substantial effort to improving EDI across the sector and specifically in research funding; for example, the open letter to UKRI from ten Black women scholars in 2020[49], the extensive work of the TigerInSTEMM group[50] Leading Routes' support for Black academics[51], and EDI advocacy at university, sector, and government levels[52].

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44 (Advance HE, 2022; Advance HE, 2022; Stonewall, 2022; UK Government, 2022)
45 (NIHR, 2020; UK Government Department for Business, Energy & Industrial Strategy; Department for Education, 2020)
46 (UCL, 2021; Prosser & al, 2021; BBC, 2021)
47 (Donelan, 2022)
48 (Forster, 2021; Advance HE, 2022; Advance HE, 2022)
49 (Adelaine, et al., 2020; Leyser, 2021)
50 www.tigerinstemm.org
51 Leadingroutes.org
52 (Wilks & al, 2021; UK Parliament, 2022; UK Parliament, 2022; ARMA, 2021)

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Oxford University Images/David Fischer

4. KEY BARRIERS TO SECURING RESEARCH FUNDING

> "There are many, many layers, and it sort of just adds up"
> *Female researcher*

The study found a range of ways in which marginalised researchers face barriers when seeking research funding. None of these barriers functions in isolation, with many applying to the same funding scheme, or affecting the same individual researcher throughout their actions to seek research funding. Each barrier should therefore be considered as acting in concert with, and at times exacerbated by, others. In section 7, a hypothetical example is provided of what an ideal experience might be, if the barriers are addressed.

In addition to funders such as research councils and charities, many universities provide competitive research funding schemes to their employees and, in these cases, are acting as funders with senior researchers carrying out evaluations. In many cases, universities carry out different forms of internal selection prior to applications being submitted to funders. A typical funding process, visualising critical points in the pathway and intervention points, is shown in Figure 1.

Themes identified through the study are used to set out the barriers experienced by marginalised researchers in seeking to secure research funding. Corresponding recommendations are presented in four Action Areas, derived from grouping key stages of the research funding process.

| 1 | University intervention |
| 2 | Funder intervention |

Call developed and published 2

Mentoring, sponsorship, training, networks, career development 1 2

Researcher hears of call 1 2

Encouraged to apply 1

Researcher decides to apply

Application review, advice, assistance, collaborators 1

Researcher prepares application

Assessment processes, transparency, sponsorship 1 2

Internal university sift/approvals 1

Application approved and submitted 1

Funder carried out compliance checks 2 → Reject and resubmit

Nominated reviewers 1 2

External peer review

Review, advice, assistance 1

Applicant responds to reviewers comments ← Sift 2 → Reject

Review, practice interview 1

Panel review (interview) 2 → Reject

Award

Feedback 2

Mentoring, sponsorship, training, networks, career development 1 2
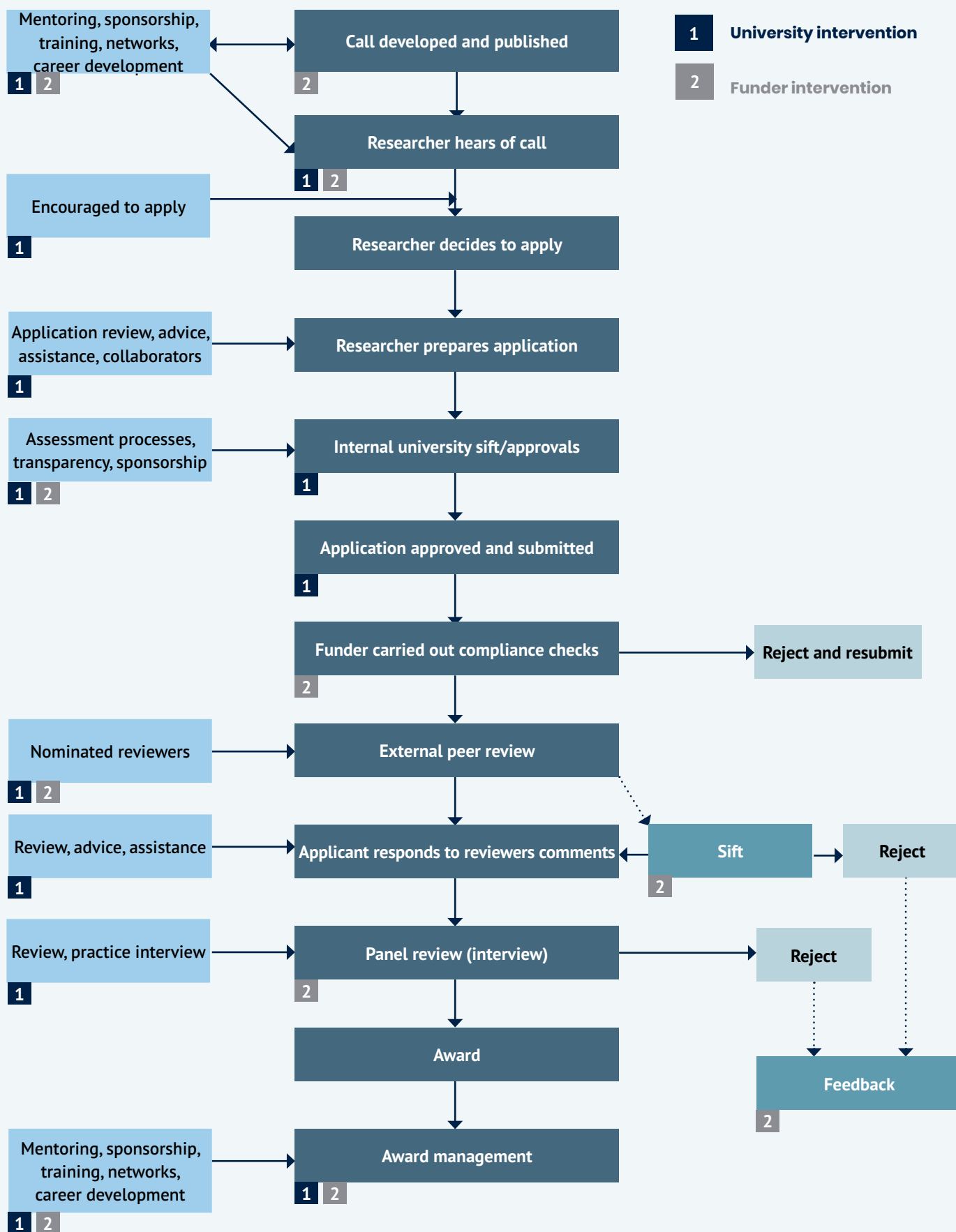
Award management 1 2

Figure 1: Visualisation of a funding scheme, with external support and opportunities to intervene to improve EDI shown

4.1 Inaccessibility

> "I'll get comments back on papers and grants that say such enlightened things as 'This is an excellent quality of work. However, if [their] attention to detail in writing is the same as [theirs] for science this would cause significant concerns'. And [comments] like … 'this is a well thought out proposal and it's justified, it's needed. However, it's poorly written.' And thus it's not funded and I get that consistently because it's really nobody's job."
>
> *Dyslexic researcher*

All funding schemes considered in the analysis were less accessible for multiple groups of marginalised researchers with accessibility issues disadvantaging disabled researchers, those with caring responsibilities, and researchers whose first language is not English. The study identified multiple examples of guidance documents and application forms/systems failing to comply with web accessibility standards[53]; many funders require disabled people to undertake additional work in order to acquire accessible materials, and include requirements that create barriers to disabled people. A minority of funders specifically invite disabled researchers to contact them to discuss reasonable adjustments to application processes. Public sector funders are subject to legal obligations to make reasonable adjustments to ensure that services are accessible to disabled people; this duty is anticipatory, meaning that funders are obliged to consider what

may be needed in advance of a request being made[54]. Despite this, many barriers to access were observed.

Throughout scheme documentation there is a range of language that excludes. From the widely used "people with disabilities" or "researchers with disabilities" ('person-first language' in contrast to 'identity-first language' which is usually preferred by disabled people in the UK[55] to uses of "spouse" and gender presumptions. Exclusion is also likely to be inferred by the omission of considerations in documentation, for example, references to disabled students without any reference to disabled staff researchers.

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53 Web Content Accessibility Guidelines (WCAG) 2.1 Level AA (World Wide Web Consortium (W3C), 2018)

54 (Public Health England, 2020)
55 Although person-first language was preferred for some time, with the rationale that it enables recognition of the individual as a person rather than a condition, the current prevailing preference amongst disabled people in the UK appears to be for identity-first language, that is, "disabled people". This is based on the view that person-first language perpetuates stigma against disability, suggests that the person can be separated from their disability, and implies that disability has no role in the identity of the person.

Oxford University Images/Ian Wallman

Specific examples of inaccessibility include:

Documents and forms not complying with web accessibility standards	Prevents some disabled researchers from being able to apply at all
Unclear and/or contradictory documents, often text-heavy	Makes rules and requirements harder to understand, disproportionately so for some disabled researchers and people whose first language is not English
Complex, difficult to understand processes and requirements	Compounded by lack of clarity above and variations between schemes and funders, the complexity could make requirements difficult to understand, particularly for some disabled researchers, those without support, and those who are relatively new to the UK
Deadlines shortly after school holidays or religious festivals, coupled with short lead times	Reduces the time available to prepare an application for those with caring responsibilities (disproportionately women), and those with some religious beliefs, and negatively affects quality of life outside of work
Requirements to disclose sensitive personal information to access allowances	Requires additional work of researchers who have taken career breaks/flexible working, disproportionately women and disabled researchers; can take a mental toll and feel invasive; entails disclosure of information that may result in discrimination (eg motherhood, disability)
Interviews as part of selection processes, sometimes with large panels	Marginalised researchers may be less able to perform to their potential due to disability, including neurodivergence, or because they feel excluded in an interview setting due to their characteristics

Inflexibility within schemes compound some of these accessibility issues, as well as presenting barriers to researchers who have alternative career paths or personal circumstances:

Eligibility based on number of years since PhD	Excludes researchers whose circumstances lead to longer career progression pathways, disproportionately marginalised researchers due to maternity, illness, moving countries, surgery, overcoming other barriers
Express limitations on activities eligible as career breaks; permitting only journal articles in publication lists	Disadvantages researchers who have non-traditional career paths which may be disproportionately marginalised researchers given increased barriers to an academic career
Very short turnaround times for returning peer review responses	Presumes availability and capacity, disadvantaging some disabled people and those with other responsibilities including caring responsibilities
Requirements to move institution	Excludes researchers who are unable to move institution e.g. due to caring responsibilities or importance of continuity of healthcare
Strict 'office reject' policies for formatting	It is more difficult for some researchers to understand and comply with these rules
Policies disallowing resubmission for poor presentation	Some disabled researchers, those whose first language is not English, and those with less access to support face particular difficulties in ensuring high quality presentation

Importantly, some of these rules and processes may be read by researchers as specifically excluding them, even if they are qualified by exceptions (such as, extensions to eligibility durations). As well as the additional effort required to secure an exception, this may be in part because it reduces a sense of belonging and increases othering. For example, if a funder sets eligibility rules based on years since PhD, then anyone who is an exception may feel othered; if a funder includes details on how disabled students may apply but not for disabled staff, this could lead to disabled staff feeling that they do not belong.

> "As someone with small children…the date of [discipline] grant calls is an absolute nightmare, and always has been. Normally the deadlines are the first week of January, the first week after Easter, and the first week of September. That's taking out Christmas, Easter, and the summer holiday. …I belong to a large network of a lot of more senior older male people, and they just get to write the grant the week after Christmas because they had so much spare time, and I don't have any spare time after Christmas at all. …If they could just make it the end of January, May, October, I would be much more tempted. I mean, I'm getting myself to apply for a fellowship this Christmas and already [June] I'm making lists of Christmas presents for the children."
>
> *Mother of young children discussing the timing of funding deadlines*

Except for Wellcome Trust, to whom disabled applicants may apply separately for funding for additional support necessary for them to prepare an application or to carry out the research, all funders appear to expect the institution to provide any support associated with reasonable adjustments required both for application and for award. In some cases, this expectation is explicitly set out in funder Equality Impact Assessments. Whilst this approach may be consistent with the expectations in law[56] as researchers are typically employed by institutions, this study suggests that disabled researchers at universities are not receiving this institutional support, and that there is lack of clarity over the source of funding for adjustments where they form part of the costs of funded research. This situation may be further complicated for fellowship applicants, as most are not employed by the eventual host institution while preparing the application and it may therefore be more challenging for them to secure reasonable adjustments both for application and award stages.

Some funders and schemes provide funding for specific costs to facilitate accessibility in carrying out the project, such as costs of additional childcare, parental leave, and sick leave, provision is variable and, where it does exist, is often incomplete.

Participants reported similar expectations, rules, and inflexibility within internal university selection processes as universities replicate patterns both from the external funding call and existing research cultural expectations. Many disabled researchers avoid disclosing their disability due to concerns that prejudice within academia and lack of understanding might harm their reputation.

KEY POINTS:

1. All funding schemes considered in this study were less accessible for marginalised researchers;

2. Accessibility barriers take several forms, including inaccessible documents and application systems, deadlines during or soon after key holidays, high complexity, and exclusionary language;

3. Inflexibility compounds these accessibility barriers and limits opportunities for researchers with alternative career paths or personal circumstances;

4. Both universities (as employers) and public funders are subject to legal duties to make reasonable adjustments for disabled researchers; and

5. Study participants had not received the adjustments and support that they need leading to evidenced disadvantages in securing research funding.

Shutterstock.com/ground picture

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56 (UK Government, 2010)

4.2 Vulnerability to bias

Whilst many funders in this study are making clear efforts to reduce unconscious bias in decision-making and to minimise vulnerability of processes to bias, practice varies. Despite these efforts, features of decision-making processes that leave schemes particularly vulnerable to bias were observed, including panel composition, scoring systems and their use, and guidance to reviewers and panellists.

Universities engage in internal pre-submission selection, arising, variously, due to funder demand management requirements and to internal policies. Approaches to internal selection vary widely, with some being particularly vulnerable to bias. As the function of these selection activities is to prevent some submissions, the impact of any bias arising in this area will be particularly high.

Scoring systems

The scoring systems both at peer review and panel stages are, for most of the schemes analysed, particularly vulnerable to bias in the fundable range[57]. Panels are typically asked to rank applications, with the top applications funded until either a budget limit (for most research councils) or a score limit is reached (for some charities). Demand is high, meaning that even very highly scoring proposals routinely fall below budget limits and are unfunded. This means that the impact of very slight biases can be very large.

Most funders provide guidance to reviewers giving definitions for scores that reviewers and panellists are expected to use in assigning scores for each assessment criterion for each application. These scores are then combined to obtain an overall score for each reviewer. For many schemes, these definitions vary by only one word between scores, particularly for the top three or four marks. This requires reviewers to rely much more heavily on their subjective opinion and makes it more likely that bias will play a role.

Scores are often the point of decision on whether an application proceeds; many schemes employ sift processes following peer review, meaning that panels will not even see applications that score below a pre-defined threshold, and others only ask panels to discuss applications that have received top scores. In contrast, some funders, for example in MRC's panel scoring

matrix, have addressed this by providing more comprehensive definitions of the scores enabling greater differentiation between the scores and greater clarity over how they should be used. Others, such as UKRI for the Future Leaders Fellowships scheme, ask the sift panel to review all applications and to rely on reviewers' comments and PI responses instead of the scores.

The scheme analysis identified one funder that uses a decimal point scoring system to rank proposals at panel stage. When scores attributed to proposals differ by so narrow a margin, it may become increasingly difficult to exclude subjectivity, risking the introduction of unconscious bias.

Guidance to reviewers

Most funders include guidance or requirements for reviewers to avoid unconscious bias; however, this study found little guidance from funders on how to avoid bias or what they consider bias to be in the context of a review. Several funders provide training to reviewers and panellists and this area may be covered in the training, which has not been reviewed as part of this study.

In some cases, the scheme analysis observed that reviewers are invited to comment on aspects of proposals that are more likely to give rise to bias. This guidance was couched in terms that attempt to mitigate the risk, but the apparent tension between inclusivity and other concerns leads to issues remaining unresolved, leaving reviewers potentially unclear on their obligations and without the resources to make equitable decisions.

Study participants gave varying views on the transparency and accountability of the peer review process with some feeling that peer review is highly transparent and others disagreeing. Most funders publish comprehensive details online of assessment processes as well as requirements on and guidance to peer reviewers and panellists. Processes for accountability of reviewers are less clear, though this is unsurprising as the work is largely uncompensated and public accountability could deter reviewers on whom the system relies. Some funders state that they benchmark reviewers' scores and provide reviewers with comparative feedback.

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57 Scores typically run from 1–6, with applications obtaining scores in the range 1–3 being considered unfundable and rejected prior to panel, and applications with scores in the range 4–6 being considered fundable and proceeding to panel

Panel composition

Every individual develops biases through complex influences that affect decision-making [58]. Despite efforts to reduce the impact of bias, structures, systems and cultures continue to contribute to the propagation of bias, and it is likely that this influences decision-making. For example, reviewers are typically requested to assess applicants' track records against subjective criteria such as "outstanding", "excellent", "high quality", and their expectations for each level are likely to be associated with their own circumstances, and their judgements influenced by stereotypes they hold. Therefore, if the composition of panels and reviewer groups is not diverse, applicants in marginalised groups may be disadvantaged[59].

Many funders state targets as a means to drive diversity on funding panels and amongst peer reviewers, although these are predominantly focussed on gender, with other characteristics largely unmentioned. Selection methods and criteria for membership of peer review colleges (PRCs) and, consequently, panels, vary widely, with some funders drawing on all award recipients while others only appoint those who are nominated by existing members of the PRC. The latter approach is likely to reinforce the status quo in the absence of any guidance to drive diversity, due to affinity bias. Where award making is affected by inequity, even expanding the membership to all award recipients will lead to a distorted cohort.

Recent evidence given to the UK Government Science and Technology Committee by Professor Narender Ramnani presents data and analysis of the ethnicity of panels and strategic advisory committees across six UKRI Research Councils[60]. This evidence shows widespread under-representation of individuals in ethnic minority groups in decision-making committees, including examples of one research council which had "no committee members who disclosed their ethnicity as Black over a five-year period", and that "a large fraction of committee meetings contained no committee members who disclosed their membership of an ethnic minority". Similar data or analysis could not be found for other marginalised groups, and is required in order to assure the diversity, and consequently the rigour, of decision-making.

Bias in university pre-submission selection

"Being told that, well actually it's been set aside for… someone else; 'you shouldn't apply this year, maybe next year…when it's your turn. Except… I'm never quite sure when this turn is supposed to be."
Female researcher from overseas

"Probably you are failed more at the internal stage, because maybe the head of the department, your boss, is not convinced by you."
Male researcher of colour

Institutional processes, prior to application submission, are also vulnerable to bias. Participants observed that various forms of formal and informal internal selection heavily influence who is permitted to submit applications. This finding is particularly relevant to researchers on fixed-term contracts who often find themselves ineligible to apply for funding as the Principal Investigator[61], and who are therefore heavily affected by disparities in decision-making. However, the observation is broadly applicable to other career stages, as decision-making is not limited to eligibility, but extends, for example, to opportunities to build track record, availability of critical resources, the design and implementation of policies (and deciding on exceptions), and decisions around whether to support and/or permit an application to proceed. In universities where these decisions are largely devolved to departments and faculties (or equivalent) approaches are likely to vary widely across the institution.

"This internal review is sometimes quite a big stumbling block because if…the university decides… which PIs, which projects are good enough to go through to funding there's this element of bias that gets introduced."
Disabled LGBT+ researcher

Study participants shared both experiences in which these decisions were made by committees and in which they were made by single individuals. Decisions made by individuals acting alone are unable to benefit from the checks that may be applied within committee decision-making to avoid bias. This study has not examined committee papers or university policies to ascertain the level of attention given to the risk of bias within internal committees; however, as the resulting decisions may prevent applicants from submitting an application, it is clear that the impact of any bias would be extremely high.

61 In order to be eligible to apply for research funding, schemes typically require applicants either to have a contract assuring employment for the intended duration of the award or to have a commitment from a department at an eligible institution that it will support the applicant throughout. This is primarily to ensure that applicants will have the resources necessary to complete the research.

58 (Greenwald & Banaji, 1995)
59 (Li, Bretscher, Oliver, & Ochu, 2020)
60 (Ramnani, 2022)

Panel composition is likely to play a role here, as for external funders, perhaps even more so, as participation in the process is typically limited to a smaller group of senior staff. Therefore, increasing diversity in university leadership will be a crucial factor in developing more equitable decision-making.

KEY POINTS:

1. Decisions in research funding rely on a large number of individuals, all of whom will have developed their own biases;

2. Many funders make significant efforts to minimise the effect of bias on decision-making, primarily through training and guidance for reviewers and diversity targets on panels;

3. Schemes continue to be vulnerable to bias due to decision-making processes and, for some funders, closed selection methods for reviewers;

4. Narrowly differentiated scoring systems used by some funders require reviewers to rely more heavily on subjectivity, increasing the likelihood and impact of bias; and

5. Institutional decision-making is also vulnerable to bias, although practice varies widely, with decisions including internal pre-selection, opportunities, and resources.

4.3 Failure to account for structural inequality

Review and assessment

Several examples were observed of funders recognising and accounting for the impact of some forms of structural inequality; that is, inequality that arises through the systems and structures of the wider research and academic ecosystem, and the societal environment in which the academy is situated[62]. All the UKRI research councils, for example, are using the same approach to encourage reviewers to allow for the impacts of COVID-19 related disruption on a researcher's track-record and career:

> "When undertaking your assessment of the research project, you should consider the unequal impacts of the impact that COVID-19 related disruption might have had on the track record and career development of those individuals included in the proposal, and you should focus on the capability of the applicant and their wider team to deliver the research they are proposing."
>
> *Research Council guidance to reviewers*

Some of the UKRI research councils go further, recognising the impact that career breaks and flexible working can have, and providing advice on how to account for these disadvantages. For example, MRC provides specific guidance to reviewers and panellists "to make appropriate adjustments when assessing an individual's track record, productivity and career progression", including a list of the areas that might be affected and that this impact can continue beyond the return to work.

While several funders encourage reviewers to account for the differential impacts of COVID-19 and/or career breaks, **none of the funding schemes analysed contain measures to allow for the impact of any other forms of structural inequality**. Conversely, funders expressly require reviewers and panellists to consider applications on equal terms. This means that reviewers and panellists are not permitted to consider the impact of structural inequality in their decisions.

62 (Advance HE, 2021)

There is considerable evidence that all the marginalised groups covered in this report are disadvantaged by structural inequality. Structural inequality leads to researchers in marginalised groups facing more challenges and having fewer opportunities to develop a track-record and their career throughout their lives. For example, societal attitudes towards LGBTQIA+ people lead to suppression or nondisclosure of gender identity or sexual orientation, which is associated with reduced publication rates[63]. Racially minoritised researchers experience progression, recognition and reward differently from white colleagues[64]. Disabled researchers may be unable to access reasonable adjustments that they need to work[65]. Examples of areas that this may affect are:

- Career development, employment and other track record;
- Publication record, presentation record and other outputs;
- Development of networks and collaborators;
- Availability of effective mentoring and sponsorship;
- Presentation and planning;
- Availability of training opportunities;
- Institutional contributions; and
- Resources requested.

Where this substantial disadvantage exists, assessing applications on equal terms does not lead to equality of opportunity, a goal to which most funders aspire. In order to deliver equality of opportunity for researchers in marginalised groups it is essential that funders develop approaches to recognise and account for the unequal impacts of structural inequality on track record and career development.

This study has not been able to identify whether internal, pre-submission, selection processes consider the impact of structural inequality when making decisions. Participants pointed to a range of internal eligibility rules and requirements that, in their experience, are applied universally, disadvantaging them because other inequalities have led to them being less able to meet the requirements. Incorporating the impact of structural inequality into internal decision-making is therefore likely to increase equality of opportunity.

Policy

Some funder policies can contribute to structural inequality. For example, policies that prohibit repeatedly unsuccessful applicants from applying again for a period or limit the number or frequency of future applications that may be submitted. This study has not identified any evidence to suggest that these policies are not being implemented universally including for researchers in marginalised groups. If these policies are implemented universally without accounting for structural inequality and the lower success rates for specific groups, they will disproportionately disadvantage researchers in marginalised groups and potentially amplify the impact of earlier inequalities.

KEY POINTS:

1. A number of funders guide reviewers to consider the "unequal impacts" of factors such as COVID-19 disruption, career breaks, and flexible working on a researcher's track record and career development;

2. These are examples of funders accounting for the impact of structural inequality, that is, accounting for the increased challenges faced by, and the reduced opportunities afforded to, researchers in marginalised groups;

3. In the schemes analysed, no other form of structural inequality is accounted for;

4. Funders typically commit to equality of *opportunity* in their equality statements while instead requiring reviewers to operate equality of *treatment*;

5. Policies around limiting resubmissions and repeatedly unsuccessful applicants could, if applied universally, disadvantage researchers in marginalised groups; and

6. Delivering equality of opportunity requires funders and institutions to develop approaches to recognise and account for the impact of structural inequality.

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63 (Nelson, Mattheis, & Yoder, 2022; Boustani & Taylor, 2020)
64 (Advance HE, 2021; Bhopal, 2014)
65 (Mellifont, et al., 2019; Yerbury & Yerbury, 2021; Boland, 2019)

4.4 Reliance on third party support

"…they [funder] were hosting [this event] to inform [the applicants and reviewers] about that particular call. They knew each other, most of them. And it somehow makes you feel like 'then should I even not apply', because it feels like they have some sort of a secret club."
Researcher of colour

Scheme analysis shows that successful applications for many schemes require substantial third party support in a variety of forms, a finding that is supported by the *Crossing Paths* report by the British Academy[59].

The types of support necessary fall into three categories: support from fellow academics, institutional support in the form of time or financial commitments, and administrative support as shown in the following figure.
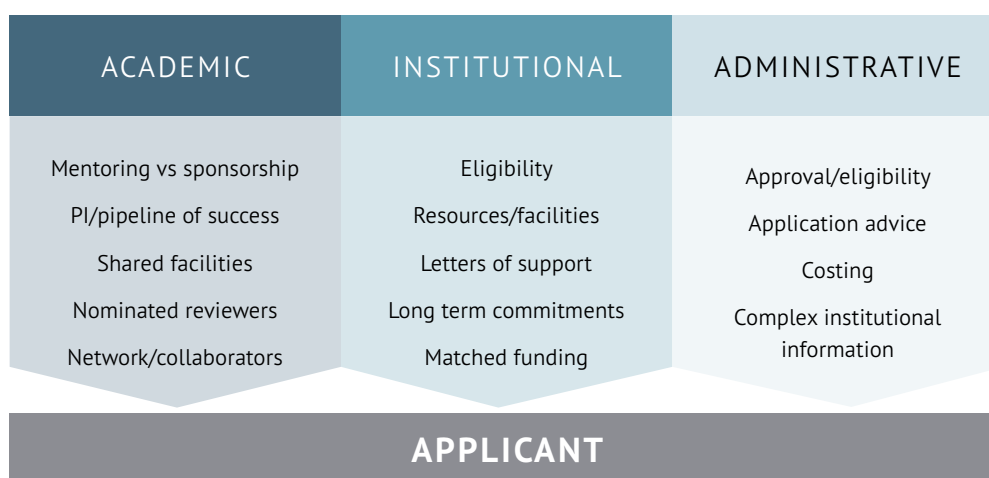
ACADEMIC	INSTITUTIONAL	ADMINISTRATIVE
Mentoring vs sponsorship	Eligibility	Approval/eligibility
PI/pipeline of success	Resources/facilities	Application advice
Shared facilities	Letters of support	Costing
Nominated reviewers	Long term commitments	Complex institutional information
Network/collaborators	Matched funding	
APPLICANT		

Figure 2 Third-party support required by applicant for a successful application.

The volume and variety of support required means that contributions of many people are required for a funding application to be successful. As more people are required, so the likelihood of bias increases, reducing the support available to the researcher. Where a researcher is not provided with multiple areas of these supports, or has to work harder to receive them, their chances of securing funding are likely to decrease.

In this study, researchers in marginalised groups observed that this support is often unavailable to them, or is particularly challenging to secure. Accessing support is dependent on individuals seeking it, and it is not offered equitably. This requirement to seek out and ask for support naturally favours more confident researchers and particularly disadvantages those whose cultural background discourages approaching senior colleagues, or asking for help (whether through gender, ethnicity, nationality, disability).

It is possible that unconscious bias, particularly affinity bias, plays a role in making third-party support less available to people in marginalised groups, as people are inclined to support those they perceive as being similar to them.

People carrying out the same actions are also perceived differently based on their characteristics. For example, research shows that women who suggest they should receive support may be perceived as arrogant and consequently penalised[67]; Black women can be limited in advocating for themselves due to stereotypes of them as angry and threatening[68]. This means that when they do ask for support they are more likely to be perceived negatively and not receive the level of support available to colleagues.

Many of the categories of support shown in figure 2 will be known to those familiar with the research funding system. Others are explained in more detail here.

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66 (British Academy, 2016)

67 (Mitchell, 2014; Bowles, Babcock, & Lai, 2007)
68 (Allers, 2018; Motro, Evans, Ellis, & Benson, 2022)

Mentoring vs Sponsorship

Study participants emphasised the difference in nature, value and availability of mentoring in comparison with sponsorship. The following quote articulates this view well:

> "I think there's a gap widening between mentorship and sponsorship … I have been mentored to death. All sorts of people want to tell me how to do it. And they all have different ideas about how to do it … At this stage I'm confident in my voice as a writer I'm confident in my grantsmanship … "What I need is sponsorship, someone to say, 'You should go for this, and I'm going to make sure that you get the chance to do so'. Not '**You should go for this and hey, good luck**'. But actually '**Come with me to a conference … let me introduce you to so and so**', because all of these white men have this really robust network where they sponsor each other for opportunities. And while they're more than willing to mentor … anyone who comes along … sponsorship is withheld, and that to me is where the barrier actually really exists for the rest of us."
>
> *White, female researcher at mid-career level*

This finding is supported by the recent Royal Society of Chemistry report *Missing Elements: Racial and ethnic inequalities in the chemical sciences*[69] which highlighted that "Black chemists and those from other marginalised ethnic backgrounds are less likely than their White peers to benefit from the mentorship and sponsorship that is so crucial to success". The report further stated that "this is partly due to the underrepresentation of these groups at senior levels" and that "many people intuitively nurture people who seem more "like them"".

Typically, an experienced mentor will advise, guide and support a junior mentee. In comparison, a sponsor uses their networks, authority and influence to advocate for a researcher's advancement and provide them with practical help. This is especially valuable in a system such as research funding where there appear to be unwritten rules, closed conversations (see section 4.7), and in which so much third party support is required.

> "I come from a minority background so when I was doing my undergrad, out of 80 students, there were only two other students who are of my ethnic group…and we also don't have faculty members of my ethnic group so I don't have…a role model that I could look up to. That's not saying that other faculty members are not role models, it's just that, there's some level of affinity if you have someone of your ethnic group to know especially if you're coming from an underprivileged minority 'oh so this faculty member has made it' so maybe they can share something."
>
> *Researcher of colour*

Participants further observed the importance of a researcher's mentor or sponsor understanding their individual circumstances, particularly so that mentors can appreciate the barriers that the researcher has already overcome and can give advice that suits their needs as well as serving as role models. Literature suggests that, in the early stages of a mentoring relationship, demographic similarity increases the effectiveness of the mentoring. However, later, once the mentor and mentee know each other better, frequency of contact and other similarities such as attitudes, beliefs and values, become more important[70]. A common understanding of circumstances could be one element of these similarities. This nuance could provide one means of developing successful mentoring relationships without overly demanding the time of a smaller number of marginalised senior researchers with similar demographics.

PI/Pipeline of success

Early-career researchers are dependent on group leaders for their development, including of the skills, networks and system knowledge to be successful in research funding. Participants spoke of a significant element of luck in the level of training that they receive, as it is dependent on whether group leaders build development of these skills into their approach to leadership. The Concordat for the Career Development of Researchers should address this inconsistency for junior researchers by embedding expectations and support to assist PIs in facilitating the career development of researchers on fixed-term contracts. However, this issue is likely to affect researchers in marginalised groups more, as they tend to have less choice about where they work, and, once they are there, have to work harder to have the same opportunities as their peers[71].

There is a risk, however, in reinforcing a model in which researchers rely on mentoring and sponsorship for access to support, as it exposes researchers to dependency on an individual-based source of support. The dependency on a patronage style of support[72] leaves junior researchers vulnerable to harassment and abuse[73], as highlighted by study participants, and unable to speak out for fear of losing the support on which their future relies. Any mentoring and sponsorship scheme should therefore include appropriate safeguards and procedures to assure researchers that complaints against inappropriate behaviour will not prevent them from receiving support. One approach that could address several of the issues

69 (Royal Society of Chemistry, 2022)

70 (Eby, et al., 2013; Turban, Dougherty, & Lee, 2002)
71 (Bhopal, 2014; Royal Society of Chemistry, 2018; Royal Society of Chemistry, 2022; Institute of Physics, Royal Astronomical Society, Royal Society of Chemistry, 2019; Yerbury & Yerbury, 2021)
72 (Davies, et al., 2021)
73 (National Academies of Sciences, Engineering, and Medicine, 2018)

raised in this section is facilitated network/web styles of mentoring[74]. , described further in recommendation AU5 in section 6.1.

Networks/collaborators

Effective personal research networks benefit funding applicants in various ways, including:

a) Offering alternative PIs if the key applicant is ineligible for funding (e.g. if their contract does not extend for the duration of the award);

a) Providing development and community visibility through being a co-investigator on an award led by a more experienced colleague; and

a) Enabling the creation of applicant teams with a range of skillsets necessary to the project.

This study suggests that these networks are less available to marginalised researchers and, where they are available, often seem to involve weaker and less reciprocal relationships. For example, many researchers consider it to be courtesy that, if a researcher has invited a colleague to be co-investigator on a funding application they are leading, then that colleague will reciprocate the invitation when they are leading a funding application. However, study participants who are racially minoritised highlighted their recurrent experience that this courtesy does not appear to extend to them.

Researchers who are marginalised, or who are excluded due to disability, cultural, or language-related differences, find it more difficult to establish the relationships necessary to form these networks. This is likely to be due to the factors set out in section 4.8 and to bias.

Nominated reviewers

Most schemes invite applicants to nominate potential reviewers, at least some of whom will normally be used alongside other reviewers appointed by the funder. For some schemes, all of the reviewers are drawn from those nominated by the applicant. This is likely to give an advantage to applicants with strong networks who are able to nominate reviewers with whom they have a pre-existing association. Setting aside whether reviewers exhibit bias, it is reasonable to suppose there is some benefit in having reviews from people (a) who are already aware of an individual's research, and (b) with whom the applicant already has some form of affinity. Researchers in marginalised groups who find it harder to develop academic networks will have a smaller pool of colleagues who they can nominate.

Constraints

A recurrent theme with participants was how thinly stretched and overworked both academics and administrators are, leading administration to prioritise application types that are deemed strategically important (primarily larger, longer bids). This leads to many forms of support above being less widely available. Whilst these constraints will affect all researchers, they are likely to disproportionately affect marginalised people who, due to other factors raised in this report, require additional support.

Study participants highlighted occasions in which they received less support for funding applications for research associated with marginalisation (e.g. climate change and racism[75]), and their perception that this was because it was not considered mainstream or strategically important. This not only affects marginalised researchers, but also marginalised people within the wider community that the research and knowledge-production ecosystem serves.

KEY POINTS:

1. Substantial third party support is required to prepare and submit a successful research funding application, including support from other academics, from the host university, and from university administration;

2. Accessing support is dependent on individuals seeking it, and it is not offered equitably;

3. Support is often unavailable to researchers in marginalised groups, or is more challenging to secure;

4. Researchers in some groups can be perceived negatively for seeking support or advocating for themselves solely because of their protected characteristics;

5. Academic networks appear to be less available to marginalised researchers and seem to involve weaker relationships with less reciprocity;

6. Participants emphasised the added-value of sponsorship over mentoring, but also highlighted that sponsorship is less available to them;

7. Group leaders can be critical to a researchers' development, leaving some vulnerable to harassment; and

8. Facilitated mentor networks that include sponsorship elements could address a number of these points.

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74 (Davies, et al., 2021; Rockquemore, 2013; Montgomery, 2017)

75 This is a hypothetical example; specific examples cannot be published due to risk of identifying participants

4.5 Assessing against irrelevant characteristics

> "If you are good with your work, but you are shy, don't want to socialise or advertise yourself, probably your chance is limited."
>
> *Disabled female researcher*

Study participants universally considered that having had a traditional academic career trajectory is beneficial when seeking research funding. This view is supported by the scheme analysis. Although funders are making efforts to move away from this through guidance to applicants and reviewers, there is scope for improvement. For example, limitations remain on what is permissible as a career break, and there is little guidance on how to include and how to assess skills and experience obtained outside of academia. This study does not provide evidence on the extent to which peer reviewers and panellists consider a traditional academic career trajectory to be important and this would be an important factor in assessing its impact on marginalised researchers.

> "Other people who would be equally successful will be overlooked because they do not have the correct look, or they haven't given a really good talk because they are nervous or because they have extra responsibilities."
>
> *Female researcher of colour*

Participants identified a range of personal characteristics that they associated as advantageous for success in research funding. Whilst some characteristics were associated with research quality, most were unlikely to contribute to a researcher's ability to deliver the proposed project, but are likely to enhance their ability to secure funding or associated support. Processes and requirements were observed in the scheme analysis that could benefit the characteristics identified.

Characteristics	Process
Confident	Interviews as part of selection process
	Securing third party support required
Self-promotional	Prose sections of applications inviting applicants to sell themselves
	Securing third party support required
	Value and time-cost of additional activities/services work not recognised
Persuasive	Securing third party support required
	Reviewers may be swayed by persuasive tone
Competitive	Preponderance of individual fellowship-style scheme and few team-based schemes at junior level
	All schemes require a single PI
Prior success	Requirements to list prizes, current salary, previous funding
	Assessment of individual largely based on past achievements
	Lack of flexibility

These characteristics may be displayed less often by researchers in marginalised groups, or arise or be perceived in different ways. It is established that people in some groups, particularly black women, are perceived negatively if they display confidence or are self-promotional[76], due to the impact of internally held stereotypes on perceptions of people in certain groups. People in these groups often therefore restrain themselves from displaying these characteristics to avoid harmful perceptions. Recent research also suggests that women are competitive in different circumstances from men[77]. Furthermore, as researchers in marginalised groups secure less research funding, they will have less prior funding to rely on in support of future funding applications.

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76 (Allers, 2018; Bowles, Babcock, & Lai, 2007; Mitchell, 2014; Motro, Evans, Ellis, & Benson, 2022)
77 (Cassar & Rigdon, 2021)

The importance of these characteristics may provide a partial explanation for how the Matthew effect, that is, early success increases the likelihood of future success, operates in research funding. Research funding success early in a researcher's career has been shown to lead to rapidly increasing funding success. Literature suggests that this widening gap is enabled by the early funding itself rather than resulting achievements, and shows that this partly arises due to applicants with prior success applying for subsequent grants more often[78]. A researcher who obtains early success is likely to grow in confidence, whilst the existing funding provides them with evidence of prior success, and greater evidence for self-promotion. Existing funding may lead, in itself, to support being more forthcoming. In contrast, early rejections are likely to deplete confidence and make it more difficult to be persuasive and self-promotional.

Narrative CV

UKRI and other funders in the UK and worldwide are developing or implementing a new, narrative CV, format that is intended to enable applicants to set out a broader range of activities and contributions than a traditional CV. This format which, in the case of UKRI, is knowns as the Resume for Research and Innovation (R4RI)[79] has enormous potential for valuing and rewarding a broader range of contributions to research and innovation, and for driving more responsible practices in research assessment. Whilst with appropriate guidance for reviewers this new format should redress the benefit of a traditional career trajectory, applicants exhibiting more of the characteristics above will be better placed to write convincing narrative. In addition, without additional support, a narrative format could disadvantage some disabled researchers and researchers whose first language is not English. Therefore, if not implemented correctly, the narrative CV initiative could entrench the biases in this section. Funders are aware of these pitfalls and are developing and sharing good-practice templates and guidance[80].

Impact of feedback

Participants expressed how valuable they have found feedback to be on proposals, practice interviews, and publications. However, the nature of that feedback influences applicants' individual confidence levels and consequently their decision and capacity to apply to future opportunities. Participants highlighted the following examples as having been harmful to them:

- Inappropriate personal comments in peer reviews, including for funders who state that they remove such comments;

- Negative reviews directly citing issues arising due to a researcher's protected characteristics (eg insufficient publications following childbirth, poor writing due to disability, lack of collaborators, mentors or other support due to marginalisation);

- Destructive, even brutal, feedback (typically internal, though not exclusively);

- No feedback provided on unsuccessful applications for some funders; and

- Unclear feedback.

Most participants were very self-deprecating at the same time as raising these problems, suggesting that it is "probably [their] fault" or that they "could have done better". Whilst their framing of these problems partially acknowledged that this type of feedback is inappropriate, they predominantly cast the blame onto themselves and it was clear that, even while recognising the inappropriateness of the feedback they had received and its impact on their confidence, they had internalised the negative messages.

Some participants felt that they are more likely to receive feedback that is "brutal" or not constructive than their peers in more privileged groups, and that this is due to both bias and the reduced availability of third party support (see section 4.4).

With confidence being identified in section 4.5 as one of the characteristics favouring success this loss of confidence arising from unhelpful feedback may contribute to diminishing chances of success for marginalised researchers.

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78 ((Bol, Vaan, & Rijt, 2018)
79 (UKRI, 2021)
80 www.ukri.org/what-we-offer/supporting-healthy-research-and-innovation-culture/research-and-innovation-culture/joint-funders-group/

KEY POINTS:

1. An ideal, unwritten, traditional, academic career trajectory appears to continue to be beneficial in securing research funding, despite the efforts of many funders to avoid this;

2. A range of personal traits unrelated to research quality are seen as being advantageous in securing research funding; these traits are often repressed or perceived negatively in researchers in marginalised groups due to stereotypes;

3. These traits are self-reinforcing, with strengths or successes in one area contributing to strengths and successes in another;

4. This combination of ideal career trajectory and ideal traits makes research funding schemes less accessible to marginalised researchers; and

5. The nature of feedback influences applicants' confidence levels and their decisions and capacity to apply to future opportunities.

4.6 Limited experience of EDI issues

> "A lot of men in my field think that women are not in the field because they're just not good enough … they will say that, you know, they will say… 'the market speaks, right?'"
> *White female researcher*

> "It's amazing how many people, as well, have this real very strong belief that they're the reason that they have got somewhere, not that they are the culmination of a series of events that happened around them. Not that they didn't work hard, but a part of that was also the pathway that they happen to fall into, or are supported through a little bit."
> *White female researcher*

The volume of third party support required for a successful funding application, and the number of individuals on whose decisions and opinions success relies, means that the level of understanding of EDI issues, their impact on individuals, and each individual's role in perpetuating them has a particularly high impact. Study participants highlighted a range of occurrences that demonstrated individuals in positions of influence over applicants' chances of success acting without consideration for equity and inclusivity issues. Assuming that this behaviour is unintentional, it is likely to be due to lack of understanding of equity and inclusivity, how people with different characteristics and circumstances are impacted and how their behaviour within their role may create, perpetuate or amplify inequity.

> "Where I did get feedback, it was very clear that everyone liked my project, none of them thought that what I want to do is not valuable, or not great research that shouldn't be done. What they said is, 'she hasn't published enough since 2017', and that is the year my son was born."
> *Female researcher*

Feedback such as that above is given despite efforts from funders to train reviewers and to highlight the importance of unconscious bias, and undertakings that personal or discriminatory comments will be removed. This suggests that:

- Funders' training both for staff, reviewers and panellists needs to be reviewed for its depth and potentially commissioned from EDI training experts; and

- Bias continues to affect decision-making and resolving the vulnerability of schemes to bias is critical to improving equity.

However, reviewers and panellists are predominantly drawn from the academic community, who may either support or be biased against marginalised researchers more broadly, eg by choosing whether to provide sponsorship, determining eligibility, allocating facilities, etc. Given pressures on academic time, it would seem more effective for institutions to provide in-depth, mandatory training on EDI, with funders providing additional training where necessary to tailor this to review processes. It may be preferable for the institutional EDI training to have national common elements that can be tailored to suit specific circumstances so that funders can rely on reviewers and panellists having a common base of knowledge and understanding.

KEY POINTS:

1. The large number of individuals on whose support or decisions success relies means that the level of understanding of EDI within the academic community has high impact;

2. Study participants highlighted examples in which individuals in positions of influence over their chances to secure research funding demonstrated limited understanding and experience of EDI;

3. The majority of funders provide guidance and/or training to reviewers and panellists on avoiding bias however, personal or discriminatory comments persist in feedback documents;

4. Levels of EDI experience within the research community can impact marginalised researchers throughout the entire research funding process, including prior to application submission; and

5. A combined approach from universities and funders towards comprehensively training the academic community on EDI, including how to implement within their role (eg as reviewer, panellist, head of department, collaborator), may be most effective.

4.7 Lack of clear and transparent information

"How do people find out about opportunities, and how to get support for these opportunities, when the networking or the conversations don't seem to be had in an open way." *Researcher of colour*

The availability and timing of availability of some information, and the highlighting of key information from the sheer volume that researchers are expected to apprise themselves of, is contingent on conversations that happen within closed groups such as networks, mentoring, and research groups. Following on from section 4.4, this leads to this information being less available to marginalised researchers.

In some cases, information described as unavailable by participants has been published online and/or circulated by email but this may have been missed. This does not invalidate the challenges set out in this section, rather, in an environment where researchers are receiving such vast quantities of information, it serves both to underline the added-value of the conversations held in these closed groups for emphasizing the critical information, and the importance of institutions recognising and allowing for the disadvantages faced by researchers in marginalised groups.

Various forms of missing information were highlighted by participants as having disadvantaged them, including where they had receive no feedback at all from some funders, making it particularly challenging to improve. This feedback is particularly critical for applicants who are less able to access mentoring or other forms of third party support.

Promotion of call

"I have experienced where, by the time I'm informed of the call, I've been told that an internal selection has been made so like, don't bother applying. …With this particular funding, I waited a year to do it, but I don't have the network…to mentor me on how I can successfully apply. …I feel like I don't have these networks. I don't. By the time I get informed of a call it's too late, or even if I can apply for it I might not be able to successfully apply for it."
Researcher with intersecting marginalised characteristics

Researchers hear about funding calls from a range of sources including searching funders' websites, automated email alerts, and internal email bulletins. Some researchers also receive notification from

peers, senior colleagues, support staff and networks. These latter routes are more personal and likely to be construed as a form of encouragement to apply, regardless of whether this is intended. As the Royal Society of Chemistry Missing Elements report highlights, some calls are shaped by invitation-only sandpit events[81].

Study participants observed that one of the challenges in deciding which schemes to target for research funding is identifying when they and/or their research are 'ready'. That is, when their track record is sufficiently established, or their area of study sufficiently advanced, for success in the scheme. Factoring in loss of confidence experienced by many, this makes encouragement to apply particularly important, encouragement that is typically available via the more personal routes of communication and requiring the support networks set out in section 4.4.

The majority of funders appear to run consultations online, inviting anyone from the academic community to participate. However, consultations may involve in-person meetings and active participation may be less accessible to researchers in marginalised groups. Furthermore, some funders use closed groups such as the Peer Review College for consultation with the academic community. Issues around this are exacerbated where admission to the Peer Review College relies on nomination from existing members.

It appears that some researchers' networks include representatives from business, funders and government, who are responsible for setting the agenda for research funding priorities. These are a form of closed conversation which could give these researchers influence over the direction and shape of future one-off funding calls, however, evidence for this would require interviews/focus groups with the people in those groups and is therefore outside of the scope of this study.

Many of the funders publish a vast quantity of information for each scheme on their websites. This transparency is positive; however, it may also contribute to problems. The volume of information available could make the key information less accessible, particularly to applicants without access to the mentoring and networks that could highlight the most critical information. The analysis also identified a range of inconsistent information between different documents for the same funder, suggesting that maintenance of the volume of information is challenging.

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81 (Royal Society of Chemistry, 2022) – these events bring together a select group of researchers and sometimes policymakers and funders within the field to determine research priorities and agenda for a specific area of research; the outcome of these events is typically developed into a research funding call

"Also maybe more easily accessible success rates, because for example for the [redacted] fellowship I applied to, only in hindsight did I find out that you literally have hundreds and hundreds of applications for a handful of positions. Had I known this I wouldn't have applied, I would have spent my time writing papers, with such a low funding rate.
Female researcher of colour

Whilst funders typically publish success rates at overall funder level and/or for specific schemes, participants highlighted that they were not aware of the low level of success rates for schemes that they had applied for, and that they would have made different decisions around the balance of time spent on grant applications versus publications had they been aware. Participants suggested that they would find it helpful if funders published scheme success rates and the typical time taken to prepare an application alongside scheme guidance.

Internal pre-selection

Any internal pre-selection, whether arising due to mandate from the funder, request from the funder to manage application quality/quantity, or internal policy, must conclude sufficiently far in advance to give the selected applicant(s) adequate time to prepare a good quality application. Participants spoke of varying forms of internal selection, from formal selection via committee to informal decisions. The informal selection decisions are as limiting as the formal decisions because any application requires the approval of the host department/faculty in order to progress. Whilst formal selection processes are typically advertised, lead times are often necessarily short and those with access to prior closed conversations are likely to benefit from additional time to prepare applications as well as advice on how to present a persuasive case. The informal decisions raised by participants were unadvertised and appear not to be based on policy or committee but instead on private discussions within departments. Decisions taking place in this way would lead to the exclusion of applicants who are not 'in the know' or in the right circles to be promoted by senior colleagues. This is likely to affect researchers in marginalised groups disproportionately. These informal decisions are less likely than committee or panel discussions to include proactive consideration of the risk of bias.

A further issue observed in the focus groups is a lack of understanding amongst some researchers as to why a department's consent is required prior to submitting an application for funding. Difficulties faced with obtaining this support damage morale and confidence, whereas

transparency around how agreements is granted might help to mitigate the disadvantage marginalised researchers experience due to the disparities in information availability set out in section 4.7.

Participants observed a general lack of feedback received following internal selection processes, making those without mentor networks less well positioned to improve and therefore to be permitted to submit a future application.

Support services

"I found the Research Design Service [NIHR] incredibly helpful, but it's another one of those things that you don't know they exist…unless you literally search Google for "Research Design Service" which you have to know what they are first. So it's another feeling like you can only access support if you're in the club that you know that, but yet the Research Design Service were incredibly helpful." *LGBT+ researcher*

Whilst many of the researchers interviewed expressed concerns around the availability to them of administrative and facilitation support, as covered further in section 4.4, many others were, in addition, unaware of the various support services that are available to them. This applied to support that is available at departmental/faculty level, divisional level, and central university. Although nearly all of this information is available on the university websites in some form, it appears not to be reaching the cohort for this study.

If acquiring this information is enabled by networks or chance interactions then the likelihood for disproportionate exclusion of marginalised groups who, as this report sets out, are also more in need of service provision, is high.

Unwritten rules

"And if, for the application, they have sort of a set rule, like you have to have published at least one paper a year, something like that. I know that I sometimes felt that they had such rules and in that case it would have been nice to know about this and I wouldn't have had to apply. … So I just feel like if they do have strict rules, it will be nice if they publish them. Make them transparent, and then it would have saved me a lot of time which I could have invested in publishing papers. I could have easily published two papers more in all the time that I wrote grant applications." *Female researcher*

Many participants described experiences in which they felt that their proposals had been rejected on grounds that were outside of the rubric, leading to the sense that there are unwritten rules or criteria that applicants must comply with in order to be successful. This concern arose both at the point of internal pre-selection and external peer review of submitted proposals. These unwritten rules typically centred on publication metrics , both on quality and quantity. Participants based their view on advice they had received on submission to internal committees, and on reviewers' comments.

Funders almost universally include reference to the San Francisco Declaration on Research Assessment (DORA)[82] in their guidance both to applicants and reviewers, and many universities are signatories to DORA, meaning that neither external reviewers nor university committees should be using journal impact factors as a proxy for assessing the quality of publications. However, reviewers are invited to comment on an applicant's track record, which includes a publication list, with little guidance on *how* to carry out this assessment. Therefore, who qualifies as "excellent", "strong", "appropriate" (words from peer reviewers' scoring rubric for one Research Council) is left to the judgement of the reviewer. This creates a gap that reviewers must fill with their own expectations of the features of, say, an "excellent" applicant. These expectations will be based on a range of factors, including their field, their own publication record and that of those around them, but will be situated within their own circumstances. These expectations are likely to form the unwritten rules that participants raised.

KEY POINTS:

1. The majority of funding schemes have a large volume of associated information that is important for success;

2. Whilst a substantial volume of information is published online, conversations within closed groups improve the availability and timing of some information, and the highlighting of key information;

3. As these closed groups are less available to marginalised researchers, this information is less available to them;

4. Information to which this applies includes the development and promotion of funding calls, some funder consultations, research agenda-setting, internal pre-selection opportunities, and awareness of university and external support services; and

5. It appears that decision-making sometimes makes use of unwritten, culturally based, patterns and customs, both at internal pre-selection and external peer review.

82 (DORA (American Society for Cell Biology), 2012)

4.8 Increased burden on marginalised researchers

Researchers in marginalised groups have to do additional work and suffer adverse experiences simply for existing in the academic space with their identities and characteristics. This decreases the time that marginalised researchers have available for preparing grant applications and for building up a track record and reduces their mental and emotional capacity to carry out the activities required for preparing a successful research grant application.

Additional workload

"The problem is that a lot of how you're deemed to succeed depends on your meeting these milestones. If you've had these kind of periods in your career where you haven't been as productive because you've actually been doing a very large administrative burden, there's no way to formally acknowledge that." *White female researcher*

Participants highlighted their experiences, as reflected widely in the literature[83], that they are expected to carry an additional non-academic workload directly due to their characteristics (often called 'cultural taxation' or 'identity taxation'). Organisations' efforts to ensure diversity amongst the membership of committees and panels , and visibility of diverse staff for outreach and engagement, place disproportionate demands on the time of researchers in marginalised groups. For example, one funder's approach to improving EDI in its application review and assessment process is:

"We will take steps to improve the assessment process by utilising the talent and resources offered by assessors from underrepresented groups such as women, early career researchers, and members of all ethnicities."

Participants spoke of carrying out this work out of a genuine desire to contribute to the academic community, or to improve academia for future researchers in marginalised groups. However, only after having taken on this work realised that it is often not formally recognised and that, while it takes time away from research work, there is nowhere in funding applications to list this and no apparent recognition in the application assessment process.

Some participants also spoke of having been badly advised or coerced into taking on substantial responsibilities without reward or recognition, and that their characteristics left them particularly vulnerable to

83 (Ahmed, 2018; Gewin, 2020; Merchant, Read, D'Evelyn, Miles, & Williams, 2020; Padilla, 1994; Hirshfield & Joseph, 2012)

this, partly because they have fewer other advisers, and partly due to social conditioning.

The Mental Toll

"As someone who has a name that people can't pronounce … just entering a room people aren't even sure if I speak English; well I'm a native speaker and have three Oxford degrees. And constantly being asked where did I do my training, [told] I don't really know how things work in this country or … being constantly questioned, on a psychological level is exhausting… That's why support to people with characteristics that might put them in such a position is necessary." *Female researcher of colour*

Participants discussed a range of experiences that exact a mental, psychological, emotional, and, in turn, physical toll on them. This toll reduces marginalised researchers' capacity to apply for research funding and their resilience, required for dealing with rejection and negative feedback. Amongst the focus group cohort, whilst this issue affected researchers in all of the target groups, it was found to be particularly prevalent for racially minoritised researchers.

Specific areas highlighted are shown in the table below, including areas in which participants observed these issues to arise in the funding process itself.

Experiences

People making **negative assumptions** based on, e.g. name, skin colour, body language, accent, and preconceived ideas that they have about people with those characteristics	■ Displayed through people's behaviour ■ Causes stress and distress in marginalised people ■ Funding process: all stages from building networks and institutional support, to reviews and interviews
People in marginalised groups are often **subjected to questioning** in relation to their perceived characteristics	■ Can be personal and intrusive or highlight negative assumptions ■ Psychologically exhausting for recipients ■ Funding process: all stages from building networks and institutional support, to reviews and interviews
Racially minoritised researchers in particular experience a range of **additional expectations**	■ That they will "be a model citizen, …then be used as the kind of poster girl" to show that success is possible for people with their characteristics ■ That they "should not play the race card", and the corollary that if they object about anything they will be perceived as having done this ■ Additional pressure on marginalised researchers to behave and perform in a way that is perceived as better than their peers
Masking or **code-switching**, the act of altering natural behaviour, body-language, speech etc in order to be accepted within a group, or because it is considered necessary in order to succeed or avoid negative consequences	■ Takes substantial effort and is exhausting, and the feeling that it is necessary has a mental and psychological impact[84] ■ Funding process: this may arise in building networks and securing institutional support, and in interviews
Marginalised researchers face barriers and must carry out additional work in order to **overcome the barriers** that they face	■ EDI work is typically led by and contributed to individuals in marginalised groups ■ Costs time and effort, and exacts a psychological toll ■ Prove it again' bias - always having to work harder for expertise/competence to be believed
Researchers in marginalised groups identified a range of occurrences and majority behaviours that lead them to **feel othered**	■ Leads to marginalised researchers feeling like outsiders or that they don't belong ■ Negatively affects confidence ■ Funding process: may arise in events, building networks, institutional support and interviews

Participants' experiences are reflected throughout the literature on academia more widely, which further explores the adverse mental health consequences[85].

"So I think … with my grants team or with my department head I have to be careful to gently nudge the boat and not really rock it to achieve what I would like to achieve and that's the difficult balancing act." *Female researcher of colour*

77 (McCluney, Robotham, Lee, Smith, & Durkee, 2019; Cage & Troxell-Whitman, 2019)

85 For ethnicity: (Blackstock, 2020; Wilkins-Yel, Hyman, & Zounlome, 2019; Bowden & Buie, 2021; Equality & Human Rights Commission (EHRC), 2019)
For LGBTQIA+: (Hughes, 2018; Gibney, 2019; Boustani & Taylor, 2020; Institute of Physics, Royal Astronomical Society, Royal Society of Chemistry, 2019)
For disability: (Yerbury & Yerbury, 2021; Dali, 2018)
For gender: (National Academies of Sciences, Engineering, and Medicine, 2018; Royal Society of Chemistry, 2018)

> "The event was partially arranged by [funder]. It was an after-hours event, so after five. And it was kind of like drinks and nibbles sort of event … because I just joined at that time it suddenly felt like I am in an unfamiliar territory because if other people drink, it's fine. Also my hands were empty when everyone was holding something and it somehow feels awkward as well. … [At another event] on the first day they didn't have even water to serve … then they realised so they suddenly had to hurry up and make some arrangements … it somehow feels like I'm being singled out, although it is not intentional."
>
> *Researcher of colour*

KEY POINTS:

1. Researchers in marginalised groups do additional non-academic work and suffer adverse experiences within academia;

2. Marginalised researchers are subject to cultural and/or identity taxation, being expected to carry additional work due to their characteristics (for example, through efforts to increase diversity on panels and committees);

3. This work is rarely formally valued, reduces the time that researchers have available for preparing funding applications and building track record, and there appears to be no means of recognising it or the associated skills in funding applications;

4. Marginalised researchers are subject to a range of adverse experiences throughout their time in the academy; these exact a mental and emotional toll, reducing researchers' capacity to prepare a successful funding application; and

5. Expectations should be appropriate and equal, additional work must be valued and recognised, and marginalised researchers must receive support in order for them to have equal opportunity of success.

05

5.INTERACTIONS AND AMPLIFICATIONS

> "And I've been struggling to publish my thesis for almost two years, because you know publishers, they, they don't publish women, and I've done…statistical research into the titles that they publish, and they don't publish women as much as they publish men, and they don't publish people from the Global South. They don't publish people with a name that will sound from the Global South. So that's the problem." *White female researcher*

The claims in this quote are supported by Elsevier's data on gender in research publishing[86] and other literature[87].

Research funding operates within the wider research ecosystem involving a range of interacting features and related actors. Whilst additional aspects are required for some individuals or roles, the majority of researchers must achieve success in three core aspects in order to pursue a research career, employment with an institution, publications and research funding. These features depend on one another in order to be eligible for funding, academic employment is required, and in order to be successful a researcher requires a track record, typically involving publications. In order to publish, a researcher must generate research results, requiring employment to provide the time to carry out research and funding to cover resources. In turn, securing an academic post is dependent on skills, experience and track record, including publications and funding record.

Each of these three features involves a range of systems and actors, both corporate and individual, thus introducing the risk of bias and inequity, and data demonstrates that this inequity exists[88]. In their paper *Racism, equity and inclusion in research funding*, Li et. al. set out how experiencing inequity in one area makes it more difficult for a researcher to fulfil the requirements to succeed in all areas of the system, thus amplifying and compounding the impact of each single inequitable[89] event. For example,

- Researchers in groups with lower success rates must write, on average, more proposals in order to secure funding, reducing the time they have available for research;
- Researchers in groups whose awards are, on average, of lower financial value have fewer resources to carry out research

The result is that the researcher is less productive for the same effort level. This may be amplified by biases within the publishing process, and adversely affect the researcher's capacity to secure future or open-ended academic posts.

The cycle continues, as the researcher now has a less competitive track record as well as less opportunity to develop new ideas, and consequently their chances of success in research funding drop further[82].

Decision-making within a university may also amplify external bias. In some areas, this relates to the interdependencies of obtaining research funding with academic research posts and publishing. Study participants highlighted experiences in which it appeared that internal decision-making was based on metrics that are subject to inequity such as publication rates and previous grant funding. Li et. al. highlight the additional, cyclical, impact within universities of lack of research funding, where universities allocate increased administration and teaching responsibilities to researchers with less research funding, therefore reducing their availability to develop ideas and funding applications.

The picture of the research funding process developed throughout this report is inconsistent with the classical imagery of a leaky pipeline, from which researchers in marginalised groups are passively lost to academia, and supports instead the description of academia as a "hostile obstacle course"[90], in which researchers in marginalised groups face structural barriers to their progress and performance.

> "We need to challenge assumptions… I had an extremely talented postdoc who was turned down for a job because they assumed she wouldn't get funding." *Black male researcher*

86 (Elsevier, 2020) – the data in this report relies on predicted gender based on author name and country, using binary gender categories
87 (Reuters, 2021; Schipper, et al., 2021)
88 (Elsevier, 2020; UKRI, 2021; Wellcome Trust, 2021)
89 (Li, Bretscher, Oliver, & Ochu, 2020)

90 (Berhe, et. al., 2022)

KEY POINTS

1. Interdependent requirements within academia mean that system actors (eg publishers, academic employers, funders) unintentionally amplify and perpetuate inequities that arise outside their area;

2. Cycles of inequality arise both within the research funding system and in the wider research ecosystem, creating a "hostile obstacle course" for marginalised researchers;

3. In order to increase diversity amongst researchers and research it is essential that these cycles are broken; and

4. The inter-dependence of the features means that removing inequities in one feature coupled with accounting for structural inequality could minimise the impact of inequities across the whole system.

Oxford University Images/John Cairns

6. RECOMMENDATIONS

The following recommendations have been developed both to address the barriers identified in this study and to propagate existing good practice.

Recommendations are presented in four action areas: Access, Process, Evaluation, and Policy. They are separated into actions for universities and funders for ease of reference. The specific implementation and relative prioritisation of the recommendations will depend on the individual circumstances of each university and funder. Many universities operate internal funding schemes and it is intended that the actions ascribed to funders also apply to universities when acting as a funder.

Whilst much of this activity can be carried out by individual organisations, departments, and other units, discussions among universities and funders will enable the sharing of good practice and the development of coordinated solutions to the more complex or structural problems. These discussions may be held through a new Funder EDI Forum, and through university collectives such as Universities UK, Russell Group, MillionPlus, and the Association of Research Managers and Administrators[91].

Responses to recommendations should take the form of Action Plans with goals that conform to SMART planning and that are co-designed with people with relevant lived experience. Contributors in these groups should be compensated to avoid exacerbating identity taxation. Universities and funders should ensure joint progress across the system by committing to external, independent accountability, including transparency about their actions, methods, and progress. A tool to support monitoring and accountability is provided in Appendix C.

Many of the recommendations may be readily implemented; others will require additional effort and associated financial resources. Sector-wide collaboration to developing approaches would mitigate the cost of these recommendations.

Overview

UNIVERSITIES

Foundational/legally required

- Use data to identify any disparity in the characteristics of research funding applicants (AU1);
- Provide adjustments and corresponding support where required for applying for research funding and carrying out research (AUF1, AU3, AU9);
- Ensure transparency, inclusivity, and accessibility of all opportunities, and events (AU4, YUF2, PUF4, PUF6), and policies (eg on eligibility) (YU1); and
- Ensure that academic leaders, including PIs, are equipped and supported to deliver the highest standards of inclusive leadership (AU6).

Requires targeted effort

- Provide active support to researchers to develop effective networks, including safe mentoring and sponsorship (AU5);
- Provide research funding guidance and support targeted to the needs of researchers in marginalised groups (AU2, AU8);
- Ensure that criteria and processes for internal selection are inclusive and fair, and are agreed and used transparently (PUF5, PU1, EUF1);
- Minimise complexity and increase flexibility of internal selection processes (PUF2, PUF3, PUF4);
- In decision-making at all stages, take steps to prevent bias and to account for the impact of structural inequality (EUF2, EUF3); and
- Create research funding opportunities targeted at researchers in marginalised groups (YUF3).

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91 www.universitiesuk.ac.uk/, russellgroup.ac.uk/, www.millionplus.ac.uk/, arma.ac.uk/

Higher effort, providing opportunity for sector-wide collaboration

- Incorporate considerations around structural inequality in career development reviews for researchers in marginalised groups (AU7);

- Establish and implement Universal Design principles specific to application processes and requirements for research funding schemes (PUF1);

- Ensure that officers, researchers, and staff are empowered to recognise their own biases, to understand the impact of diverse circumstances and the impact of structural inequality, and to implement this within their role(s) (YUF1); and

- Provide support for researchers who suffer mental and emotional consequences from discrimination (YU2).

FUNDERS

Foundational/legally required

- Review and adapt documentation, systems, processes, requirements, and events to ensure that they are fully accessible and inclusive (AF1, PF2, PUF4, PUF6, PF1, YUF2);

- Review and adapt methods and content of research funding information to ensure universal availability and access, sufficiency, and consistency (YF1);

- Review and adapt recruitment to and mechanisms for community consultation to ensure that they are fully accessible, inclusive, and transparent, and that the outcomes benefit from a diverse range of voices (YF2); and

- Use open recruitment for selecting reviewers and/or members of Peer Review Colleges (EF3).

Requires targeted effort

- Minimise complexity (including the amount of support required) and increase flexibility of selection processes (AF4, PUF2, PUF3, PUF4);

- Rebalance assessment from past achievement towards potential to deliver the project, valuing a broader set of contributions to research (PUF5, EUF1);

- Take steps to prevent bias from impacting decision-making, including minimising ambiguity in scoring systems, and checks to ensure that judgments rely solely on assessment criteria (EUF2, EF1, EF2);

- Incorporate accounting for structural inequality into review and assessment (EUF3);

- Review policies that prevent submissions and their implementation to address disproportionate impact on marginalised researchers (YF3);

- Fund a broad range of accessibility project costs (AUF1); and

- Create research funding opportunities targeted at researchers in marginalised groups (YUF3).

Higher effort, providing opportunity for sector-wide collaboration

- Develop a range of inclusive and accessible tools and events to support researchers with networking, including both online and in-person, text and oral (AF2);

- Establish and implement Universal Design principles specific to application processes and requirements for research funding schemes (PUF1);

- Ensure that all those involved in the decision-making process are empowered to recognise their own biases, to understand the impact of diverse circumstances, to understand the impact of structural inequality, and to implement this within their role(s) (YUF1); and

- Trial and evaluate novel mechanisms for funding such as hybrid lottery systems and anonymisation (YF4).

6.1 Access

Universities and funders should ensure that applying for research funding is equally accessible to all.

UNIVERSITIES AND FUNDERS SHOULD

AUF1. Provide adjustments to ensure that all researchers have equal access to carrying out research

Why: To avoid marginalised researchers from being disadvantaged in carrying out their research, excluded from certain schemes, or from self-funding some costs associated with research. Adjustments enable researchers to develop their careers and track records.

To comply with legal obligations on employers to make reasonable adjustments within the workplace where a disabled person would otherwise be at a substantial disadvantage[92].

How: Specific costs that are required to be covered include costs for reasonable adjustments for disabled researchers, parental leave costs, sick leave costs, differential visa costs associated with international travel, additional childcare costs for travel, additional carer costs for travel (for disabled staff with carers), and costs associated with security when travelling. Funders and universities should resolve the appropriate funding source for these costs where they arise directly from the conduct of funded research. Researchers in marginalised groups should be involved in these discussions to avoid unintended consequences arising, such as discrimination in pre-submission selection, reduced scope for travel due to budget caps, or negative perceptions from reviewers about value for money.

Universities should ensure that the process of securing this additional funding and adjustments is straightforward and functional for researchers regardless of variation in or gaps in funding for these costs by research funders. This is likely to require universities to develop mechanisms for funding these specific costs.

Adjustments for disabled staff will vary according to individual need and should be agreed between a specialist disability advisor and the researcher concerned. Examples include a full time or part time support worker, access technology, proofreading and copy-editing, changes to policy, building design and layout, and BSL translators. Universities should explore options for pool services between departments that could provide some adjustments and dedicate funding to enable individual adjustments to be provided.

UNIVERSITIES SHOULD

AU1. Gather and analyse data to identify any disparities in the characteristics of those who are applying for research funding

Why: To ascertain the scale, nature and areas of any disparities (which may be evident only in some disciplines), and to focus efforts accordingly.

How: Compare data on the protected characteristics of those who are eligible to apply for specific research funding with the characteristics of those submitting applications and with those who are successful in securing research funding. Wherever possible, data should be disaggregated, particularly for ethnicity where aggregation can mask disadvantages experienced by some groups of people.

Data gathering should assure the safety and confidentiality of individuals, with transparent rules in place to ensure that data is not disclosed to those making decisions on submissions or applications, and that it will not form part of decision-making on any individual application. Rules for gathering and management of data should be co-produced with researchers in marginalised groups to ensure safety, and to maximise the likelihood of researchers feeling sufficiently safe to disclose. The DAISY (Diversity and Inclusion Survey) Question Guidance[93] produced by EDIS may be helpful in developing questions for data gathering.

AU2. Provide targeted research funding guidance and support

Why: To assist marginalised researchers in facing and overcoming barriers that they will continue to face in an imperfect system.

How: Guidance and support should be co-designed by marginalised researchers, research facilitators, and EDI facilitators. It may include, for example,

- dedicated sessions of existing training in grant writing to provide safe spaces for discussion of different issues that may be faced;

- guidance documents for applicants on promoting their accomplishments and ideas in the face of possible resulting discrimination;

- training in how to access institutional support; and

- facilitated networking opportunities.

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92 (UK Government, 2010)

93 (Molyneaux, Wellcome trust D&I Team, Hunt, & EDIS, 2022)

AU3. Provide practical, dedicated application support to researchers who are disabled or whose first language is not English

Why: To avoid these groups of researchers from being disadvantaged in preparing all stages of their application and will identify additional sources of support that disabled staff may require.

How: Services should be developed in consultation with the affected researcher groups and EDI specialists, and are likely to include proofreading, copy-editing, support with writing, support with understanding funder requirements, support with liaising with collaborators and funders, support with organisation, and identifying and arranging any disability-related adjustments required for assessment or post-award and associated funding. Universal supports provided should include accessible templates conforming to funders' formatting requirements. Services should be regularly reviewed and monitored to assess whether support is appropriate for, and meets the needs of, marginalised researcher

AU4. Ensure that all internal selection opportunities are published and disseminated to all eligible researchers

Why: To ensure that all researchers are aware of internal opportunities.

How: Internal selection opportunities, including for matched funding where required by funders, selection methods, and criteria should be published and disseminated to all eligible researchers.

AU5. Provide active support to researchers to develop internal and external networks, including safe mentoring and sponsorship

Why: To improve the opportunities for marginalised researchers to acquire the support and networks necessary for success, without leaving them vulnerable to harassment or abuse.

How: Produce toolkits to enable researchers to self-assess their academic network needs and to identify existing gaps that can be resolved with the support of mentors/sponsors, and, where appropriate, research facilitators. Universities should also provide accessible networking spaces and opportunities to enable the development of networks and collaborations. These spaces and opportunities should take a variety of forms in order to maximise effectiveness for people with all different characteristics and personalities, including

in-person, facilitated, online meetings, and text-based technology.

The use of mentor networks or webs, in which a researcher benefits from a range of mentors who fulfil different support needs but is not critically dependent on a single mentor, enable universities to ensure safe and sustainable mentoring for all researchers. At least one member of this mentor network should act as a sponsor; that is, taking an active role in advocating for the researcher. The sufficiency of a researcher's mentor network for fulfilling their support needs should be reviewed in career development reviews, with universities actively supporting researchers to expand their mentor network where required. Including a mentor from outside the researcher's department, faculty, or division may provide an independent source of advice.

Universities should encourage diversity when building teams and consortia for large research initiatives, including in leadership roles. This can be achieved by shifting the focus from traditional track records (an approach supported by research funders) and towards creating diverse teams with diverse backgrounds and skill-sets.

AU6. Ensure that academic leaders and PIs are equipped and supported to deliver the highest standards of inclusive leadership

Why: To maximise equality of opportunity for researchers to be treated equitably, have the resources, support, and opportunities that they need, feel able to be themselves, that they belong, and are valued, and are empowered to perform to their full potential.

How: Require all academic leaders (e.g. Heads of Depar-tment, Faculty, School, Division, etc) and PIs to complete a training programme in inclusive leadership. Universities should develop a set of standards for inclusive leadership that they expect academic leaders and PIs to implement, and provide the support necessary for them to deliver. Based on these standards, universities should develop inclusive leadership self-assessment tools to be used in conjunction with 360 evaluation to enable assessment of inclusive leadership competencies and effectiveness. Rather than each university creating similar tools independently, it may be preferable for the development of these to be led by institutional groupings or agencies, such as Universities UK, Russell Group, Million+, or Advance HE.

AU7. Ensure that marginalised researchers have opportunity to address the impact of structural inequality in their career development reviews

Why: To enable universities to target individualised support for marginalised researchers most effectively.

How: Career Development Reviews for marginalised researchers should include explicit consideration of how structural inequality has impacted them throughout the preceding year and cumulatively, with templates and pro-formas including space and guidance around this. Where impacts are identified, reviewers should work with reviewees to develop personalised strategies for addressing issues. Although these strategies should be personalised, they should not involve changing the individual which relies on deficit thinking, or blaming the individual[94], but should instead focus on actions that can be taken in the individual's environment or support system to deliver the change that they need.

AU8. Publish information to demystify the research funding process online in an inclusive and accessible way, and include in staff induction

Why: To enable researchers who are new to the UK, new to the university, or without access to support networks to understand the local research funding system and how to navigate it.

How: development of materials should presume a baseline of zero knowledge to ensure that all necessary information is included. Information should include

- how the research funding system works in the UK;

- internal university review and approvals processes (including rationale and key contacts);

- support available and pathways to accessing it training opportunities and how to access;

- key funder and scheme information, including success rates, typical application preparation time, and how to know when in an applicant's career to apply; and

- reasonable expectations (such as to have a Career Development Review) and how to access them if not offered.

AU9. Ensure that pathways to accessing support, including additional targeted support and adjustments are straightforward, accessible, and visible

Why: To minimise barriers to accessing support, and ensure that researchers without effective advice will be able to access support.

How: Pathways to access should be published on university and department websites, with prompts and links provided regularly via internal university newsletters targeted at researchers. Barriers to access should be minimised by providing multiple means of access (eg phone, generic contact email, personal email, drop-in), by minimising information required prior to commencing support and providing multiple means of providing this information. Accessibility should be assured by consulting researchers in marginalised groups.

FUNDERS SHOULD

AF1. Ensure that documentation and systems are fully accessible and inclusive

Why: To ensure that marginalised researchers are not prevented from applying or disadvantaged by documentation and systems that are less accessible to them, or by language that excludes them. It will also enable them to participate fully as reviewers and panellists.

How: Ensure that documentation and systems required for participating in the research funding process can be used fully by disabled people, including those who are blind or have impaired vision, those with motor difficulties, cognitive impairments, learning difficulties or disabilities, those who are neurodivergent, and those who are deaf or hearing impaired. Online documentation and systems should comply with the Web Content Accessibility Guidelines (WCAG) 2.1 level AAA[95]. Whilst some funder web content may necessarily remain at level AA, many of the AAA criteria are required in order for disabled people to be able to access content for use by funding applicants or reviewers. Public sector bodies are required to conform to WCAG 2.1 level AA to meet government accessibility requirements[96],this study suggests that compliance is not universal. Accessibility audit services, such as AbilityNet or Shaw Trust Accessibility Services may be beneficial, and are used by at least one major UK funder.

Funders should also employ sensitivity readers with lived experience to review scheme content and act on their advice. It is important that individuals with lived

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94 (Valencia, 1997)

95 (World Wide Web Consortium (W3C), 2018)
96 (UK Government, 2021)

experience carry out this review because the linguistic preferences and needs of people in marginalised groups often differ from those employed to support them.

AF2. Develop a range of inclusive and accessible tools and events to support researchers with networking, including both online and in-person, text and oral

Why: To reduce the likelihood of marginalised researchers being disadvantaged by the lack of availability of networks.

How: Several approaches to this should be adopted in parallel:

a) Funders already run a range of events, such as sandpits, showcase exhibitions, policy meetings, and workshops. Where possible, these should be further developed to incorporate networking elements. Adding networking to existing events is likely to maximise attendance from and therefore access to a broad range of people.

a) Novel events should be created that may be specific to career stage and are focussed on supporting the development of academic networks for collaboration.

a) To ensure access to networking for researchers with a range of characteristics, technology solutions should be deployed enabling researchers to engage in text-based approaches to networking.

In developing events and tools, funders should use the following principles[97]:

■ Ensure that the planning/organising group is diverse and listens to diverse voices in order to understand how to meet the needs of a diverse user group;

■ Ensure that planned activities, locations and timings do not disproportionately exclude marginalised groups. For example, avoid alcohol-based activities, or those involving significant physical activity, and avoid evening functions and school holidays;

■ Do not make assumptions about what people with certain characteristics will and will not do or want (such as alcohol or food). Instead offer options and invite participants to advise organisers of specific requirements in advance;

■ Facilitate researchers in marginalised groups with making connections by being active and intentional in introducing them to potential collaborators, partners, and research users;

■ Ensure that all aspects are accessible to all, including promotion, communications, registration, participation, and feedback. Online materials should conform to the Web Content Accessibility Guidelines (WCAG) 2.1 level AA[98], level AAA where possible. Additional references are provided in the footnotes that may assist with maximising accessibility[99]; and

■ Regularly seek feedback on activities to identify areas for improvement to increase accessibility and inclusivity. Report attendee diversity, and attendee satisfaction by characteristic.

The actions in this recommendation could be supported or co-delivered by professional bodies. The Royal Society, for example, provides its funded fellows with a range of benefits, including mentoring, networking opportunities, and training and professional development.

AF3. Provide constructive feedback to unsuccessful applicants, at least those who were shortlisted to interview

Why: To enable unsuccessful applicants to improve for future applications, and will avoid marginalised applicants from being disadvantaged by lack of mentoring or other academic support. Many funders provide this already, in the form of peer review comments to which applicants are invited to respond, and/or as comments that are agreed at panel and fed back to applicants. Some funders do not provide feedback on the grounds of constrained administrative resources.

How: As reviewers are accustomed to their reviews being shared with applicants for response, it may be that a policy change could accommodate this or, alternatively, that an addition to the reviewers' form could incorporate a summary comment that is automatically forwarded to the applicant following award decisions.

AF4. Minimise the amount of support required for a successful application and provide dedicated opportunities for support for researchers in marginalised groups

Why: To reduce disadvantage faced by researchers in marginalised groups to whom this support is less available and who may face barriers at pre-submission selection stages within universities.

How: At application stage, remove matched funding requirements, avoid sustainability commitments such as creating new posts, require and/or provide mechanisms for universities to provide complex institutional/

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97 (Tulshyan, 2018)

98 (World Wide Web Consortium (W3C), 2018; Antolini, et al., 2021)
99 (Hardy, n.d.; Leary, 2020; Antolini, et al., 2021)

research environment information directly, and offer support to applicants for requirements such as identifying mentors.

Funders should remove levels of institutional matched contributions from selection processes, including from assessment criteria and reviewers' and panels' scoring and ranking. Guidance should be provided to peer reviewers not to assess the presence or value of matched funding (eg EPSRC's guidance for peer reviewers of Standard Grants[100]), and funders should review and assure the implementation of this guidance.

For schemes where matched funding is necessary, such as large strategic investments or due to the configuration of the funder, discussions around the level of matched funding could be held between the funder and university following a recommendation to fund from the panel, with awards made conditional upon sufficient matched contributions being forthcoming.

Although the Leverhulme Trust's Early Career Fellowship[101] requires a high proportion of matched funding, the associated application process reduces the likelihood of weak institutional support letters, and shifts the balance from the applicant needing to seek support to the institution considering how it will provide the support. Instead of requiring a free text letter of support, the online application system asks heads of departments a series of specific questions directly:

- Why is your department the best place for the applicant to undertake their research project?

- Why would you like the applicant to be hosted by your department and what are the benefits to your institution by acting as their host?

- How will the applicant be mentored by colleagues in your department?

- How might the applicant contribute to teaching and the wider intellectual life of the department?

- What are the facilities and relevant resources that the Fellow will be provided with by the host department?

- What is the source of matching funding?

Positive approaches to providing support should be developed in collaboration with researchers in marginalised groups to ensure that it meets their specific needs. It may include providing mentoring schemes dedicated to researchers in marginalised groups, similar to the Access Mentoring scheme

provided by the Royal Academy of Engineering, in which funding applicants from under-represented groups receive pre-application support.[102]

6.2 Process

Universities and funders should develop and implement processes that maximise flexibility and minimise complexity, and revise processes to enable applicants from non-traditional backgrounds

UNIVERSITIES AND FUNDERS SHOULD

PUF1. Jointly carry out further work to establish and implement Universal Design principles specific to application processes and requirements for research funding schemes

Why: To provide universities and funders with a rigorous foundation for ensuring that processes and requirements present equal opportunities for all applicants, reducing the adjustments and exceptions required for individuals.

How: Universal Design is "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design."[103] Characteristics of any UD product or environment are that it is accessible, usable, and inclusive[104]. The University of Washington Disabilities, Opportunities, Internetworking, and Technology Center provides extensive resources on Universal Design and its application in a range of educational settings that may be useful in this work[105]. Whilst some discussion of UD focusses on disability, the approach here should also include the needs of women, racially minoritised people, and LGBTQIA+ people, and the active participation of researchers in all marginalised groups will be required in order to ensure a universally suitable outcome.

An example of this in practice is in the UKRI Future Leaders Fellowships scheme, in which all applicants are sent a detailed list of example interview questions in advance. In the absence of this, some marginalised researchers may need this as a specific adjustment in order to compete equitably, however, they would need to persuade the funder that it was required in order to access it. Where questions are sent to all applicants, marginalised researchers who require them are able to access them without further barriers, and all applicants are able to prepare and are empowered to perform at their best.

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100 (EPSRC, 2022)
101 (Leverhulme Trust, 2022) – questions taken from the online application system for applications to the February 2022 deadline

102 (Royal Academy of Engineering, 2022)
103 (The Center for Universal Design, 2008)
104 (Burgstahler, 2021)
105 (University of Washington DO-IT, 2022)

PUF2. Minimise complexity of requirements and processes

Why: To make the process more accessible to a diverse range of applicants and reduce associated disadvantages experienced by some marginalised researchers.

How: Examples include, keeping application forms and attachments short and simple, focussing requirements on the key criteria against which assessment will be made, minimising the layers of approvals required for submission. It should be coupled with a flexible approach, enabling adjustments to processes to be made to accommodate individual circumstances. Means of accessing flexibility should be transparent, inclusive and accessible.

PUF3. Increase flexibility of requirements and processes

Why: To make the process more accessible to a diverse range of applicants.

How: Limiting and potentially exclusionary requirements such as specifying eligibility in terms of age or number of years post-doctorate should be avoided. Alternative approaches to stating eligibility observed in the scheme analysis include:

- the broad approach of the NIHR Advanced Fellowship[106], for which any researcher with a PhD but who has not yet been awarded a chair may apply; and

- the nuanced approach of the MRC fellowships and new investigator research grants, that links eligibility for each scheme to a specification of skills and experience by career stage[107].

In addition to ensuring documentation and systems are accessible (AF1), and developing and implementing Universal Design approaches (PUF1), funders should enable adjustments to processes to be made to accommodate disability and other individual circumstances. Means of accessing these adjustments should be transparent, inclusive and accessible.

Rigid adherence to formatting requirements with severe and irrevocable loss for failure to comply should be avoided. Where formatting requirements must be strictly enforced, applicants should be supported to resubmit without loss of opportunity.

Funders should remove restrictions on what form of activity is permissible as a career break, instead inviting applicants to set out the impact of their career, and include reviewing methodologies to account for different forms of break within reviewer guidance.

PUF4. Recognise, avoid, and mitigate for disadvantages created by deadlines that conflict with or come soon after school holidays

Why: To ensure that researchers with increased caring responsibilities over school holidays are not disadvantaged by having significantly less time to prepare applications.

How: When setting deadlines, consideration should be given to whether it is possible to avoid school holidays both for deadlines and review periods (the latter to avoid compromising reviewer diversity). Where it is not possible to avoid school holidays or the periods shortly thereafter, mitigation approaches should be taken.

The following periods are those in which deadlines are likely to disadvantage researchers with caring responsibilities:

- The Winter/Christmas holiday and the two weeks following, typically ~ 19 December to 20 January;

- The Spring/Easter holiday and the two weeks following, dates vary, typically late March to late April;

- The Summer holiday and the six weeks following, in England and Wales typically ~ 20 July to 14 October, in Northern Ireland typically ~ 1 July to 7 October, in Scotland typically ~ 25 June to 30 September; and

- In Scotland, where the Autumn break in October is two weeks long, the duration of the break and the two weeks following.

In cases where deadlines during these periods cannot be avoided due to external deadlines, limitations on the timing of spend or commitment, and/or the time taken for selection processes, mitigation approaches should be adopted such as

- pre-announcement of call with minimum six months' notice prior to submission deadline;

- open submission for recurrent schemes;

- minimising requirements, complexity and length of applications;

- transparently permitting flexibility where justified; and

- guiding selection panels to account for any disadvantage that applicants may experience.

In order to access flexibility or accommodations in assessment, applicants may be invited to share how they have been disadvantaged but should not be asked to divulge sensitive personal details.

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106 (NIHR: National Institute for Health and Care Research, 2022)
107 (MRC, 2022)

PUF5. Ensure that neither requirements nor processes benefit individuals with attributes unrelated to the conduct of the project

Why: To empower researchers with diverse personal attributes to succeed in research funding.

How: In developing approaches to formal and informal selection, universities and funders should consider whether researchers with particular attributes are likely to benefit. Attributes including self-confidence, self-promotional, persuasiveness, and competitiveness should be considered as well as prior success. Examples of factors to consider include:

- Interviews that may benefit confident people;

- Securing institutional or third party support, such as matched funding, mentorship, or strategic commitment, that may benefit confident, self-promotional, competitive, or persuasive people;

- Prose sections setting out the track record or potential of the applicant that may disadvantage people who are not confident, self-promotional, competitive, or persuasive;

- Individual rather than team-based schemes (where the university is acting as the funder), that may benefit competitive people; and

- Requirements to list prizes, current salary, or previous funding, which may benefit people who have prior success.

PUF6. Remove requirements on applicants to disclose sensitive personal information in order to access adjustments or allowances

Why: To remove a barrier to accessing adjustments and allowances, and avoid stigmatising or compromising the wellbeing of applicants requiring adjustments.

How: Invite applicants to set out how a career break has affected their track record and productivity (eg the MRC Career Development Award[108]), and what adjustments they need rather than why (eg the Wellcome Trust Disability-related adjustment support[109]). Some funders and universities may consider that they need some rationale prior to providing adjustments and allowances; in this case information of the level of "medical leave", "caring responsibilities", or "disability" should be sufficient. Universities and funders should not require applicants to disclose detail such as medical information or who they may have been caring for.

UNIVERSITIES SHOULD, FOR BOTH FORMAL AND INFORMAL INTERNAL SELECTION,

PU1 Ensure that inclusive and fair assessment criteria are agreed prior to issuing the call, used throughout evaluation, and made transparent to all applicants

Why: To reduce the opportunity for bias to arise in selection and provide equal opportunities for all applicants to demonstrate how they fulfil criteria.

How: Ensure that assessment criteria are used for all forms of internal selection and are publicised to applicants. Criteria should:

- Be easily understood by candidates from all backgrounds and at all levels within the university, including those who are new to the university, to the UK and who do not have access to mentor support;

- Focus on capabilities and potential rather than non-essential qualifications, career trajectory, or experience;

- Not include attributes that may be more attractive to individuals with particular characteristics, such as 'outstanding', 'world-leading', 'competitive', or 'confident';

- Highlight any flexibility that is available;

- Not rely on information beyond that associated with the call (both internal and external) such as university or department strategy;

- If metric-based, use appropriate metrics that comply with the San Francisco Declaration on Research Assessment[110]; and

- Be published and disseminated to all eligible researchers.

Universities may also find the use of diversity-related criteria appropriate to the career stage, such as ability to work with people from diverse backgrounds, facilitate the achievement of their EDI and research culture goals.

Where funders require matched funding, universities and units within universities should review how decisions around this are currently made against the following criteria, and using the recommendations in sections 6.2, 6.3, and 6.4 to and to make improvements where required:

- Are all eligible researchers aware of pathways to securing matched-funding?

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108   (MRC, 2016)
109   (Wellcome Trust, 2022; Wellcome Trust, 2022)

110   (DORA (American Society for Cell Biology), 2012)

- Are selection methods and criteria established and published?

- Are selection methods and criteria inclusive and fair?

- How many people are involved in decision-making, who are they, and are they fully trained in and accountable for operating inclusively?

- Do selection methods, criteria, or pathways to securing funding/support favour individuals with specific characteristics such as confidence, or those with substantial support?

- Are strategies employed to avoid the risk of bias in decision-making?

FUNDERS SHOULD

PF1. Where demand management is used, pre-announce the scheme and requirements to allow universities to set internal deadlines that do not come soon after school holidays

Why: To ensure that researchers with increased caring responsibilities over school holidays are not disadvantaged by having less time to prepare applications for internal selection.

How: Avoid demand management if possible. Where demand management must be used the risk of disadvantage should be mitigated, for example by:

- Pre-announcing the scheme including the process, requirements, and criteria as early as possible, with a minimum of eight months' notice prior to submission deadline;

- Ensure that deadlines are set so as to allow universities to set internal deadlines that do not occur during or soon after school holidays; and

- Encourage universities to implement inclusive selection processes, and require universities to report on the transparency and inclusivity of internal selection processes.

Round 7 of the UKRI Future Leaders Fellowships scheme provides an example of the use of the third mitigation. In contrast to previous rounds and in response to large demand, UKRI capped the number of applications that could be submitted by each academic organisation. In a letter to universities, the Director of the Future Leaders Fellowships programme highlighted to universities the importance of their role in ensuring that all potential applicants have a fair chance to apply.

Submitting organisations were required to supply a statement setting out the inclusive process used to select their applicants prior to submission of any applications.[111]

PF2. Enable researchers who have changed their names to share their publication history without disclosing prior names or sensitive personal information

Why: To enable researchers who have changed their name, including trans and non-binary researchers, women, and some researchers from overseas, to include all of their outputs within an application without disclosing their protected characteristics and exposing themselves to risk. Whilst several journal publishers have implemented name change policies for trans researchers[112], these policies are not universal.

How: Funders could address this by

- Advocating with publishers for post-publication name change policies; and

- Permitting researchers to summarise publications made prior to their name change, and providing corresponding guidance to reviewers and panellists.

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111 (Meader, 2022; UKRI, 2022) – The process changed between publication of these two documents, from internal selection taking place prior to submission of outline proposals (Meader) to taking place prior to submission of full proposals (UKRI).

112 (PLOS, 2020; Perkins, 2021)

6.3 Assessment

Universities and funders should minimise vulnerability to bias and account for structural inequality in assessing funding applications

Universities, in both formal and informal internal selection, and funders should both

EUF1. Rebalance assessment towards the potential to deliver the project or scheme rather than on past achievement and value a broader set of contributions to research

Why: To avoid propagating wider disadvantage into research funding by enabling reviewers to assess applicants' potential to deliver. It may also support efforts to improve research culture by focussing on teams rather than individuals.

How: Scheme guidance should identify the skills and experience required in order to carry out the role, similarly to a person specification in a job advert, and invite applicants to set out how they meet these criteria in their application.

Wording of criteria should draw on inclusive practices in recruitment, with phrases such as "Ability to…", "Demonstrate the ability to…", and "Be capable of…" used to distinguish capabilities that candidates need to have but for which they may not yet have extensive experience. Reviewers and panellists should be guided to include in their assessments a broad range of experiences that might demonstrate the skills required, incorporating service and EDI work. References to "track record" in review guidance should be avoided, to refocus on potential rather than on history.

In order to increase the value attributed to a diverse set of contributions to research, the range of possible criteria should be broadened, for example, with groupings of different criteria for leadership, impact, or research culture, and not all criteria in each grouping required. Applicants should be encouraged to include, and reviewers to consider, skills acquired through research-related service activities, such as interviewing, committee service, and responsibilities within research groups.

Wording that may exclude or discourage some groups such as "continuous experience", "drive", "competitive", or "persuasive", should be avoided. Reliance on past successes that may be influenced by discrimination such as funding track record, prizes, impact-factors, memberships, current salary, and recognition within the field, should be minimised.

It is crucial that reviewers and panellists are guided to use the criteria in the published person specification in their assessment of applicants, including how to do so whilst building in the flexibility required for EUF2 and EUF3 .

For high-volume calls for which a single person specification would not be appropriate, generic criteria might be used such as "Ability to deliver the proposed project", "Ability to deliver impact", and "Skills necessary to engage with relevant end-users".

An example of a similar approach in practice is the UKRI Future Leaders Fellowships Round 7. The scheme guidance[113] provides a person specification against which applicants are advised to "assess and justify their suitability for the scheme". This approach could be further improved by reducing the number of criteria, and ensuring that assessment criteria match those in the person specification.

EUF2. Take steps to prevent bias from impacting decisions

Why: To reduce the impact of bias in internal decision-making.

How: Require and ensure that all those involved in formal and informal internal selection complete successfully the training in YUF1, incorporating aspects relevant to internal selection. Develop panel and reviewer diversity to increase the diversity of perspectives and experiences that play a role in decision-making[114].

Universities should ensure through guidance and training that chairs of all selection panels are equipped to prevent bias from impacting decisions, including by highlighting the risk of bias at the outset, reflecting on the composition of the panel and its positionality, and creating an environment in which participants are encouraged and empowered to highlight bias as it arises. Panel chairs and others leading internal selection should be held accountable for preventing bias.

Funders should add information on

a) how bias manifests within the research funding system;

b) the amplification of this impact when very applicants/applications are narrowly ranked; and

c) techniques to protect decision making from bias

to guidance for reviewers and panellists. Several funders provide training for reviewers and/or panellists in this area. This training should further incorporate the features recommended in YUF1.

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113 (UKRI, 2022)
114 (Ramnani, 2022)

An example of this in practice is the AHRC guidance to panel chairs and panellists[115]; in which AHRC provide a list of reminders and techniques to be employed to avoid bias. For panel chairs, this also includes asking "panel members to be aware of the biases that they will unintentionally bring to the process". This final point is vital and could be improved by also asking panellists and panel chairs to reflect on the composition of the panel and its positionality.

EUF3. Ensure that all selection panels and individuals regularly involved in selection account for structural inequality where possible

Why: To ensure that selection accounts for wider disadvantage that has negatively affected a marginalised applicant's track record.

How: Provide guidance to those involved in selection, including, for universities, leaders such as heads of department and division, on how to account for the impacts of structural inequality when carrying out selection. This guidance should be developed by a team incorporating expertise in structural inequality, research funding, peer-review, equality legislation, and university decision-making/panel operation with researchers in marginalised groups.

Enacting this recommendation may be positive action under the Equality Act 2010, so prior legal advice should be obtained, and funders and universities should be able to demonstrate that action is a proportionate means of achieving:

- Enabling or encouraging people who share a protected characteristic to overcome or minimise a disadvantage connected to the characteristic;

- Meeting needs of people who share a protected characteristics that are different from those without that characteristic; or

- Enabling or encouraging people who share a protected characteristic to participate in an activity where participation is disproportionately low.[116]

Universities and funders may find it helpful to link efforts under this recommendation with their diversity data, for example, data showing very poor success rates for Black applicants may demonstrate that participation is disproportionately low. Qualitative data such as this study and the literature referenced may support a case that a disadvantage is connected to a specific characteristic.

In applications to its Advanced Fellowship, NIHR provides applicants with opportunity in its application form to share mitigating factors with the Selection Committee "so that they may take them into consideration during the assessment of your application." A list of possible mitigating factors is given including career breaks, disability, or caring responsibilities, as may be typically expected, but also "reduced opportunities to career support e.g. mentorship, and limited opportunities to undertake prior research and training" and "such impacts as limited opportunities to obtain grant funding, or fewer publications".

In order for this approach to function effectively to account for structural inequality, applicants would need to be made aware that they could claim disadvantage due to their characteristic(s) and of what information is required in order to do so. Reviewers and panellists would require guidance from funders and, where applicable, universities, on how to review applications to which mitigating factors applied.

MRC provide guidance for applicants and reviewers in how to address the impact of career breaks and flexible working[117] that may be useful in developing guidance to address this recommendation. Here, MRC advise that "panels will note the applicant's career trajectory and potential at the beginning of a break, relative to the stage of the applicant's career." Panels receive guidance on the areas that may be affected by a career break, and that the effect may continue beyond the return to work. The list of areas provided by MRC is:

- "Presentation and publication record

- Track record of securing funding, including time to obtain preliminary data

- Maintaining networks of research contacts and research collaborations

- Recruitment of staff

- Time required for training

- The ability to take up opportunities in different geographical locations

- The ability to take up courses, sabbaticals, 'visits', placements and secondments".

All of these areas should be incorporated into guidance for reviewers, panellists, and university decision-makers with the following additions:

- Career trajectory and employment record;

- Development of academic networks and collaborations;

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115 (AHRC, 2022)
116 (UK Government, 2010)

117 (MRC, 2016)

- Availability of effective mentoring and sponsorship, including its impact on the presentation and planning of the bid;

- Availability of training opportunities;

- Availability of institutional contributions;

- Where applicable, increased time commitment to non-research service work; and

- Record of prizes, awards, impact factor, and citations, salary and recognition within the field.

Guidance for reviewers should include how to account for disadvantage, including in any scoring systems. Panel chairs and others leading internal selection should be held accountable for ensuring that decision-making accounts for structural inequality where possible.

FUNDERS SHOULD ALSO

EF1. Ensure that the structure and use of scoring systems minimise ambiguity and the amplification of biases

Why: To reduce schemes' vulnerability to bias.

How: Provide reviewers and panellists with definitions for each score that are clear and comprehensive, that are based on unambiguous assessment criteria, and that do not rely on subjective interpretation. For example, replacing phrases such as "excellent leadership", where what constitutes 'excellent' is for the reviewer to decide, with "ability to lead the project to successful completion through to delivery of impact".

Clear distinction should be made between scores by

a) making the definitions substantially different (if definitions are similar, these scores should be merged to reduce the impact of subjectivity and bias); and

b) using integer scores throughout, including at panel.

Approaches that further minimise the vulnerability to bias of scoring systems include banding rather than ranking applicants, and using a sift panel to tension applications based on peer review comments rather than scores. Both of these approaches are used in the UKRI Future Leaders Fellowships[118].

Ranked lists should be reviewed (either by panels themselves, roving panellists as for the UKRI Future Leaders Fellowships, or the funder), for the impact of bias in the rankings, incorporating the positionality of the reviewers and the panellists in the discussion.

EF2. Introduce checks to ensure that reviewers make judgements solely against assessment criteria

Why: To reduce vulnerability to bias by ensuring that irrelevant matters do not form part of the decision making process.

How: Make assessment as straightforward as possible for reviewers, including tailoring reviewer forms to match closely assessment criteria, and to evaluate reviews for compliance.

Evaluation could take a variety of forms depending on the nature of the funder. Some funders already screen reviews for discriminatory or personal comments, or for quality. Including in this screening a check for adherence to the assessment criteria would enable action to be taken at the level of individual applications leading to immediate impact. However, this study has identified cases in which discriminatory and personal comments are returned to applicants, despite funder screening, therefore, if this approach is used, funders should also review the efficacy of these checks. Funder-level evaluation should form part of independent accountability, with a sample of reviews audited for comments that do not relate to the assessment criteria.

Funders should ensure that researchers are not penalised for perceived poor presentation in order to reduce disadvantage to some disabled researchers and researchers whose first language is not English. Unless it forms part of the person specification from EUF1, reviewers should be explicitly advised that presentation is not to form part of their assessment. Reviewers should be guided that perceived poor presentation highlights potential gaps in support available to the applicant and not any less potential of the applicant to deliver the project.

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118 (UKRI, 2022) – Both approaches were used in Round 6, with evidence in the documents 'Overview of the Assessment Process' and 'Reviewers Guidance', which are no longer available online. The first of the two approaches is used in Round 7, with the Reviewers Guidance for Round 7 not yet available to confirm whether the second approach will also be used.

EF3. Use open recruitment for selecting reviewers and/ or members of Peer Review Colleges

Why: To increase diversity of reviewers by avoiding approaches that maintain the status-quo.

How: Provide transparent, inclusive and accessible opportunities for researchers to apply to be included on lists of potential reviewers. These should include publicised opportunities for self-nomination such as for EPSRC[119], and with associated applications to become a peer reviewer conforming to the other recommendations in this report. Funders should review their peer review groups for balance and positionality, where such information is available.

Minimising the use of applicant-nominated reviewers may avoid disadvantaging researchers with less access to research networks but should be balanced with the potential detriment to less popular topics. It is recognised that resource constraints lead some funders to rely solely on such reviewers; where this is the case funders could require universities to support applicants in securing and confirming reviewers.

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119 (EPSRC, 2022)

6.4 Policy

Universities and funders should prioritise EDI in the design and implementation of policies to improve access and flexibility, and to ensure that policies do not amplify structural inequalities.

UNIVERSITIES AND FUNDERS SHOULD

YUF1. Ensure that those involved in the decision-making process are empowered to act equitably in carrying out their role(s)

Why: To provide all those participating in decision-making for research funding with the knowledge and skills required to play their role in improving the equity and inclusivity of the system.

How: Provide and regularly refresh training to all researchers and support staff working with research funding are empowered to

- Recognise their own biases;
- Understand the impact of diverse circumstances;
- Understand the impact of structural inequality;
- Understand the law surrounding equality; and
- Implement this learning within their role(s).

A sector-wide approach across universities, complemented by additional specific elements by funders, may create efficiencies that enable the training to be made mandatory without unduly adding to the academic workload.

YUF2. Ensure that all events are inclusive and accessible

Why: To enable marginalised researchers to participate in events equally, and benefit from associated opportunities.

How: All university- or funder-led events relating to research funding should be inclusive and equally accessible for diverse groups of people. Suggestions for ensuring inclusivity and accessibility of events are covered in recommendations AF1 and AF2.

YUF3. Create research funding opportunities targeted at researchers in marginalised groups

Why: To enable researchers in marginalised groups to compete for funding against applicants with similar positionality, thus creating opportunities that do not entail the disadvantages set out in this report.

How: Create schemes that aim to identify and nurture talent within marginalised groups in a way that is designed to be accessible for them. Enacting this recommendation may be positive action under the Equality Act 2010, so prior legal advice should be

obtained, and funders and universities should be able to demonstrate that the action is a proportionate means of achieving the aim of:

- Enabling or encouraging people who share a protected characteristic to overcome or minimise a disadvantage connected to the characteristic;

- Meeting needs of people who share a protected characteristic that are different from those without that characteristic; or

- Enabling or encouraging people who share a protected characteristic to participate in an activity where participation is disproportionately low[120].

In developing such schemes, organisations may find it helpful to consider their specific diversity data to focus on researchers in groups where participation is particularly low, or to target interventions at the disadvantages identified in qualitative studies such as this report and the literature referenced throughout. For example, funding may be developed that enables racially minoritised researchers to develop collaborations, or that provides buy-out funding for researchers carrying out service work associated with EDI or arising out of their characteristics.

Examples of schemes reserved for researchers in particular groups exist, including the Oxford Academic Futures programme[121], the Sanger Excellence Fellowship[122], and the Dorothy Hodgkin Fellowship[123], however, they are limited in number and are typically restricted to early-career support.

This approach is anticipated in Wellcome Trust's new action on racism, arising from a recent evaluation showing that the Trust has made "insufficient progress' on anti-racism"[124]. Wellcome intends to create a "dedicated funding stream for researchers who are Black and people of colour".

Recipients of awards should be supported to develop the networks and support structures that will be necessary to their future success.

120 (UK Government, 2010)
121 (University of Oxford, 2022)
122 (Wellcome Sanger Institute, 2022)
123 (Royal Society, 2022)
124 (Wellcome Trust, 2022)

UNIVERSITIES SHOULD

YU1. Ensure that rules and policies and their underlying rationale are transparent, inclusive and fair

Why: To both ensure that research funding-related rules and policies (e.g. on eligibility) do not disproportionately disadvantage marginalised researchers. It will also enable all researchers to understand the rules and policies regardless of whether they have access to a support network, empowering them to navigate the system more effectively.

How: Where universities operate central rules and policies related to research funding across the institution, these should be reviewed in conjunction with marginalised researchers. In more devolved universities with multiple rules and policies applying in different departments, central services should audit rules and policies in effect across the university and, collaboratively with marginalised researchers, develop guidance or a toolkit on ensuring that policies are inclusive and fair for use by units across the university.

All research funding-related rules and policies affecting researchers should be published online, either on central university or department webpages as appropriate.

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YU2. Provide support for researchers suffering mental and emotional consequences from discrimination

Why: To reduce environment-based mental illness amongst marginalised researchers, and thus to ensure that they have the mental and emotional resources to prepare high quality funding applications.

How: Given the personal nature of this intervention, it is vital that these services are co-designed throughout with researchers from all affected groups to avoid any risk of creating harm. Universities should provide ring-fenced funding sufficient for the establishment and maintenance of these services.

FUNDERS SHOULD

YF1. Ensure that all funder information related to funding is published universally and accessibly, including all basic information, and is consistent

Why: To ensure equal access to information required by applicants to apply successfully for funding, without disadvantage for those who are new to the UK, or without access to support networks to understand the local research funding system and how to navigate it.

How: Development of materials should presume a baseline of zero knowledge to ensure that all necessary information is included. Information should include:

- how the research funding system works in the UK;

- key funder and scheme information, including success rates, and typical application preparation time, (participants indicated that this combination would enable them to make informed decisions on where to devote their time) and advice on when in their career applicants should apply for funding;

- accessing training opportunities;

- how to interact with the funder and other stakeholders, including for preparing and submitting applications and for influencing; and

- how to serve as a reviewer or panellist.

Information provided directly from funding officers to individual applicants should be replicated in regularly maintained FAQ documents.

Key information for both applicants and reviewers should be highlighted, for example through short, 1 – 2 page documents for quick reference. This will increase accessibility for both groups and enable funders to remind reviewers of key messages at the point of each review. Examples include MRC's Quick reference guide – Guidance for peer reviewers[125] and AHRC's Checklist for an effective review[126] (although the latter does not explicitly refer to bias).

YF2. Hold all community consultations openly, accessibly, and transparently including using consultation methods that enable a diverse range of voices to be heard equitably

Why: To ensure that the whole research community has opportunity to influence decision-making.

How: Consultations should be open to all researchers to participate, and not limited to any group whose membership may be limited by wider inequity (such as Peer Review Colleges, existing award-holders, or by employment status). Methodologies should ensure full accessibility for all groups, including disability accessibility, and addressing factors that limit access for other marginalised groups. Detailed requirements and suggestions for achieving accessibility are contained within AF1 and AF2. Offering multiple mechanisms for engagement will further increase accessibility. Consultations should be reviewed and monitored to assure that the perspectives of a diverse range of participants are sought, secured, and valued.

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125 (MRC, 2018)
126 (AHRC, 2022)

YF3. Review policies that prevent submissions and their implementation to address disproportionate impact on marginalised researchers and amplification of wider inequity

Why: To ensure that funder policies do not disadvantage marginalised researchers.

How: Review policies in the context of funder-specific diversity award data to assess likely disproportionate impact on researchers in marginalised groups. Examples of policies that may disproportionately impact marginalised researchers include

- Eligibility limitations based on years since doctorate, employment status;

- Preventing or limiting resubmissions, including for aspects that may arise due to characteristics or circumstances, such as presentation, deadline timing, or lack of support;

- Submission restrictions on repeatedly unsuccessful applicants for people whose characteristics put them in a group that experiences lower success rates; and

- Demand management/institutional limits on numbers of bids permitted, introducing additional, internal levels of selection that may be more vulnerable to bias.

YF4. Trial and evaluate novel review mechanisms for funding

Why: To explore whether, how, and to what extent novel mechanisms may improve equity for all researchers.

How: Various suggestions posited throughout this study, the literature, and in funder practice should be considered, trialled, and evaluated by funders, with results published to maximise developments across the sector. Examples include:

- Universal basic research grant[127];

- Full or hybrid lottery systems[128]; and

- Institution- or name-anonymised review[129].

Leverhulme Trust is currently trialling an institution-anonymised approach to assessing its Research Project Grants, with the trial due to complete in 2023.

NERC trialled a hybrid lottery system in its Exploring the Frontiers of Environmental Science scheme[130] following a report from the Research on Research Institute[131]. Panellists scored and banded proposals, with funding allocated to proposals in the highest bands using a randomised approach. The success of the process will be reviewed as part of the wider scheme evaluation. Publication of this review may assist funders outside of UKRI to assess the value of the approach in their own schemes. The British Academy is trialling a partial randomisation process for the 2022–23 round of the BA/Leverhulme Small Research Grants scheme[132].

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127 (Payne, 2019)
128 (Adam, 2019; NERC, 2022)
129 (Women in STEM Ambassador, n.d.; The Association for Clinical Biochemistry & Laboratory Medicine, 2021)
130 (NERC, 2022)
131 (Woods & Wilsdon, 2021)
132 (The British Academy, 2022)

7. REIMAGINING RESEARCH FUNDING

The following case study of a hypothetical researcher, Dr Isioma Ejiofor, demonstrates how the actions in section could be experienced by, and make a difference to, marginalised researchers.

Dr Ejiofor is a sociologist who completed her doctorate twelve years ago, and who, after a long period of moving between short fixed-term contracts at different institutions, was appointed to her first permanent academic post four years ago. She carries a busy workload including research and teaching, as well as serving on her School's EDI Committee and Athena Swan Steering Group, providing the School's training in ethics in overseas fieldwork, and regularly serving on recruitment panels.

In her second postdoctoral appointment, she obtained small amounts of university funding for travel for fieldwork. Her third appointment was the result of a funded research fellowship and this enabled her to focus on her research and produce a substantial body of publications. The quality of her research, as well as strong references, meant that she was well placed to secure a permanent academic post at a new institution, her fourth since her doctorate.

Since joining her new institution, she has been unable to secure any external research funding despite submitting a number of applications, but has been successful in securing a small internal award for a pilot study. The quality of her publications has also reduced, as a substantial portion of her time is spent on teaching and university service work, and her lack of external funding means that she has no research assistants or postgraduate students. She regrets spending such considerable periods in preparing funding applications, and she feels she would have been better to devote the time to research and better publications instead.

The University

Over the last two years, Dr Ejiofor's university has been implementing a range of strategies to assure both equality of opportunity for researchers in marginalised groups, and career development support for researchers. As a result, Dr Ejiofor has developed a network of mentors, including two who act as sponsors for her in various ways, a strong network of collaborators, and has received constructive feedback on her previous unsuccessful funding applications from senior colleagues with appropriate understanding of the barriers she has faced. She also has the assistance of an administrator pool who provide support to marginalised researchers carrying out service work. This has freed up her time in the last few months to re-focus on her research, teaching and career development.

The Funder

The Funder in this example has also taken steps to improve inclusivity, including policy changes, improved training and guidance for reviewers and panellists, amending peer review scoring methodologies, and amending application forms. As a result, the profile of award recipients is gradually becoming more diverse.

The opportunity

In March 2024, Dr Ejiofor receives an email from her primary mentor informing her that Funder's biannual Mid-Career Investigator Award will be opening in April and suggesting that she would be well placed to apply given her recent progress. Dr Ejiofor has previously discounted this scheme, as it required applicants to be three years or less into their first permanent academic appointment making her ineligible. However, the encouragement from her mentor led her to check the scheme information again, and realise that the eligibility criteria had recently changed.

> "Applicants should be able to demonstrate that their skills and experience match those relevant to their career stage as outlined below…
> A list of criteria followed, for each career stage replacing the previous criteria on number of years. Criteria were detailed enabling potential candidates to assess the level of scheme appropriate for them, and covered productivity, research vision, research experience and potential, personal development, leadership, communication and engagement skills, and profile and influence.
>
> *MRC Career Development Award*

Dr Ejiofor knew that large amounts of support were required to fulfil the requirements for this scheme, and that it would take time to get this in place and prepare a high quality application. Fortunately, her mentor's email had arrived early in the scheme's cycle, and the deadlines were far enough from school holidays that she would be able to focus on preparing her application without compromising either the care of her son or the quality of her application.

Call Timeline:

Call opens	April 2024
Deadline for submitting Expressions of Interest	October 2024
Deadline for submitting full proposals	March 2025
Interviews	early July 2025
Award starts	September–November 2025

adapted from ESRC Centre Grants

Securing support

In order to be successful, applications for this scheme required a high-quality, individual letter of support from the applicant's institution, including confirmation of access to a comprehensive suite of resources and facilities and high levels of professional and career development support for the candidate. Having received detailed training in inclusive leadership, Dr Ejiofor's head of department has implemented an inclusive process for internal selection that was well publicised to departmental research staff. All candidates selected to proceed are then provided with a range of support, including the contributions required by the funder as well as administrative and facilitation support to ensure that they have the tools they need to prepare a strong application.

Dr Ejiofor therefore knows that her first step is to prepare a two-page expression of interest (EOI) for the internal selection panel. As Dr Ejiofor is dyslexic, it is more challenging for her to prepare prose than for her colleagues. The EOI has been designed to be accessible and includes suggestions that applicants should approach senior colleagues for advice and support, removing some of the barriers she would otherwise have faced in completing the form. After preparing a draft, she sends it to her sponsor-mentor and to the Research Access and Support Team. This central university team has expertise in the research funding system and in the range of additional

access needs of marginalised researchers. One aspect of their work is to provide pool support to meet some of the university's obligations to provide reasonable adjustments to disabled staff. They regularly support Dr Ejiofor in preparing written materials, and they review and revise her draft EOI to improve the presentation.

Dr Ejiofor's sponsor also provides feedback on the EOI, and supports her in mapping out the support that she will require in order to prepare a strong application. Dr Ejiofor identifies a gap in expertise in her team that will be required to deliver the project. Her sponsor introduces her to a colleague at another institution as a potential collaborator, recommending her and her work.

At the internal selection panel meeting, Dr Ejiofor's head of department opens with a briefing on unconscious bias, how structural inequality may have hindered some applicants' track record and support levels, and setting out the assessment criteria.

> "The Chair is responsible for ensuring funding decisions are credible. Chairs should brief the Board or Panel about the importance of fairness and mitigating bias, create an environment where conditions for bias are mitigated and whereby all members feel able to contribute to and challenge discussion, and ensure that all members' views are taken into account in decision making."
>
> *MRC Information for Panel Members or October 2021 Fellowship Interviews*

During the discussion of Dr Ejiofor's application, one panellist raises concerns about Dr Ejiofor's publication record since joining the university, suggesting that the number of articles and low impact-factor journals in which they have been published are poor. The panellist concludes that perhaps this is due to Dr Ejiofor's "dreadful writing". Another panellist, empowered by the environment established by the Chair, highlights that the comment on Dr Ejiofor's writing style is personal and inappropriate and that use of impact-factor in decision making is contrary to DORA obligations, and therefore these should be ignored by the panel. He rebuts the criticisms by observing that Dr Ejiofor joined the university prior to the changes made to address inequity, and that her publication rate dropped at that time, likely due to lack of funding, which may in turn be due to lack of support then available within the university. He further notes the volume of service work undertaken by Dr Ejiofor and how this will have impacted the time she has available for publications and funding applications. The panel continues to discuss Dr Ejiofor's EOI, assessing it against the assessment criteria, and decide to support her application.

Although the letter of support must be signed by the Head of Department, they rarely have time to prepare these letters themselves. Per departmental practice, and in order to ensure similar quality of letters for all applicants, the Research Facilitator asks Dr Ejiofor's sponsor to prepare a draft letter of support for the Head of Department to review and sign. The Research Facilitator provides a paragraph to the sponsor to include in the letter that specifies the package of institutional contributions to be made. This package is developed for all applicants by the Research Facilitator in consultation with the department Head of Administration, and balances the needs of all applicants with available resources.

Preparing the application

Dr Ejiofor receives an email from her department Research Facilitator informing her that she has been selected to proceed to apply for the Mid-Career Investigator Award, and scheduling a meeting with her and the Research Access and Support Team. At this meeting, the group discuss Dr Ejiofor's needs, how to address gaps identified by the internal selection panel, support required and how best to provide this as a team.

The Research Facilitator highlights to Dr Ejiofor the Quick Reference Guide provided by the funder, summarising the scheme requirements, and provides her with a document giving a range of institutional and departmental information that may be required for the environment section of the application. The Research Access and Support Team send to Dr Ejiofor a series of template documents provided by Research Services that set-up all of the funder's formatting requirements for each attachment.

The funder has a webpage dedicated to the support and adjustments offered to disabled applicants. As a result, Dr Ejiofor obtains an audio version of the application form and all funder information and guidance documents.

> "If you are disabled or have a long-term health condition, we offer support to help you with the grant application process…
> When you're applying for funding, we offer different types of support. For example, we can – provide application forms and funding information in accessible formats, for example large print, braille and audio.
> *Wellcome Trust*

Dr Ejiofor prepares an initial draft of her application using the Quick Reference Guide and the template attachment documents. As agreed, she then sends the draft to both the Research Facilitator and Research Access and Support Team for review. Their feedback enables her to identify areas where she has missed or misunderstood requirements, and to edit her application to ensure that all questions and assessment criteria are addressed. At this stage, the Research Access and Support Team revise Dr Ejiofor's application to correct presentation and writing issues, with specialist subject support from the Research Facilitator where required.

The Research Access and Support Team also support Dr Ejiofor in her discussions with the department Finance Officer who is preparing the costing for her application, and in written communications with her new collaborator.

Dr Ejiofor's sponsor then reviews the application, making further suggestions for improvements. The Research Access and Support Team carry out a final review, focussing on the changes made since their earlier review.

Submitting the application

Dr Ejiofor has previously found the submission process confusing and opaque; however, the Research Access and Support Team have pointed her to Research Services' webpage setting out the process. One of her mentors with prior experience with this funding scheme has shared his experience with her, enabling her to understand the relevant processes within the funder. The funder has also produced a flowchart showing the assessment process and setting out what happens at each stage.

> For the Future Leaders Fellowships, UKRI publish a flowchart in an easy access format setting out an overview of the assessment and award process giving details on what happens at each stage, what funders and panellists do, and how they make decisions.
> *UKRI Future Leaders Fellowships*

After Dr Ejiofor has submitted her application for approval, her department Head of Administration notices that one of the project partner's letters is incomplete – unsigned and not on headed paper. She knows that this will lead to the funder discarding the letter and therefore contacts the Research Facilitator. The close working relationship between Dr Ejiofor, the Facilitator, and the Research Access and Support Team throughout the preparation of the application mean that the Facilitator knows that an updated version of the letter is available, and, with Dr Ejiofor's consent, is able to upload this new version to the application.

Following submission, the funder carries out compliance checks against basic eligibility and formatting requirements. The template attachment documents provided by Research Services have enabled Dr Ejiofor to ensure that her application complies with formatting requirements, though in copying and pasting one section from another document, there are two paragraphs in a slightly lower font size than that permitted. Given the small amount of text this applied to, the funder concludes that no advantage was obtained and permits the application to proceed.

The scheme previously included an eligibility requirement on applicants to change institution. This would be prohibitive for Dr Ejiofor who relies on continuity of healthcare for effective management of a chronic health condition. However, the funder has recently introduced flexibility to this requirement:

"You should choose a research environment that provides you with the appropriate training, resources and experience to deliver your project and develop your research skills and identity. We encourage you to move away from your current research environment. This may mean moving from your group or department, but it is not essential to move organisations."

Wellcome Trust Early-Career Awards

This enabled Dr Ejiofor to arrange a creative solution that achieves the novel environment that the funder considers important without compromising her healthcare.

External peer review

The funder forwarded Dr Ejiofor's application to four members of their Peer Review College (PRC), which includes academics across a range of career stages and who become members either by submitting an application to the funder or through securing research funding from them. On joining the Peer Review College, members are trained in the funders' expectations around peer review, including comprehensive details of their scoring methodology. This training is refreshed annually and expands on that provided on bias and structural inequality by university employers, to understanding of how these issues manifest within peer review.

The reviewers find the Quick Reference Guide for Reviewers that the funder provides extremely useful for reminding them of issues of key importance to the funder. This covers assessment criteria, avoiding bias, and how to account for different individual circumstances and trajectories. The funder has provided specific guidance on how to account for structural inequality.

"In assessing applicants, panels will recognise that the effects on productivity of a career break, or a period of flexible working, may continue beyond the return to work. The following areas may be affected:
- Presentation and publication record
- Track record of securing funding, including time to obtain preliminary data
- Maintaining networks of research contacts and research collaborations
- Recruitment of staff
- Time required for training
- The ability to take up opportunities in different geographical locations
- The ability to take up courses, sabbaticals, 'visits', placements and secondments."

MRC Career Breaks and flexible working: Guidance for reviewers

This guidance enables reviewers to understand the reasons for Dr Ejiofor's recent lower publication rate, and establishes a structure for them to use to assess Dr Ejiofor's potential to deliver the proposed research programme and to develop her career, based on her skills and experience, and research excellence without allowing prior disadvantage to further disadvantage her in this process.

Reviewers are not invited to score applications as further panels rely on their comments instead.

On receipt of the reviews, the funder notices that one of the reviewers has suggested that investment in Dr Ejiofor should only continue if she commits to remain in the UK after the award. The funder considers this to be a discriminatory comment based on her name and determines that the review does not comply with its standards on equity and respect. It therefore discards this review and only forwards the remaining three reviews to Dr Ejiofor for response.
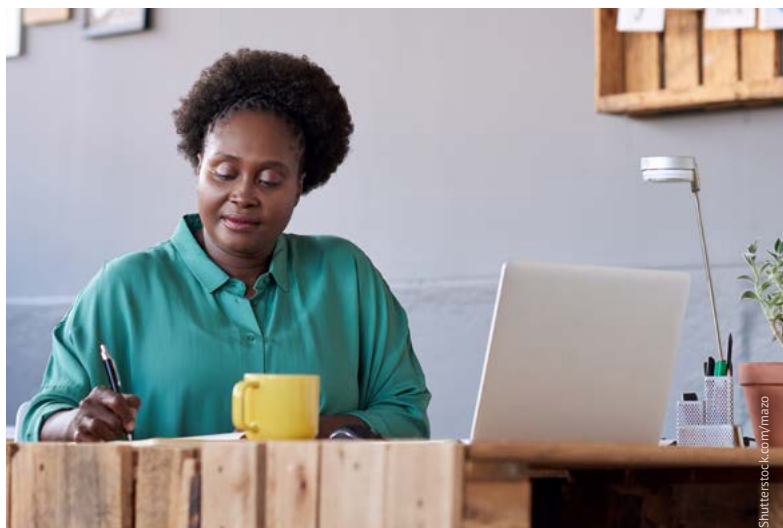
Responding to reviewers' comments

Dr Ejiofor is reasonably satisfied with the peer reviewers' comments, as all those that she has received are constructive and fair. Along with the comments, the funder sent a "PI (applicant) response guidance" document to her setting out the purpose and process of the PI response, and guidance on how to prepare a good PI response.

In preparing her response, Dr Ejiofor starts with the Research Services template document so that the formatting requirements are pre-established. The Research Access and Support Team review and revise the text of her first draft. Dr Ejiofor forwards this amended version to one of her mentors for review from an academic perspective. They highlight that aspects of her review could be interpreted as overly defensive and critical of the reviewer. They also point out that the response does not fill the space allowed and remind Dr Ejiofor that she is permitted to use this space to provide further evidence in support of her proposal. Dr Ejiofor works with the Research Access and Support Team to revise and finalise her PI response before returning it to the funder.

Interview

Dr Ejiofor's application, reviewers' comments, and her response are reviewed by a Sift Panel alongside those for other applicants. Panellists have received the same training as that for peer reviewers, and chairs receive further support to empower them to ensure that the funder's principles with respect to equality of opportunity are observed. Rather than scoring applicants and applying a cut-off line, the panel places applicants into priority groups.

> "Applications are banded into a possible four groups, where panels will make a recommendation of those applicants to prioritise to invite for interview. Roving panel members input into a tensioning process to agree, based on the banding of the multiple panels, which applicants should be prioritised for interview."
> *UKRI Future Leadership Fellowships Assessment Process Overview*

At the culmination of this process, Dr Ejiofor is invited for interview. The invitation includes a document setting out the interview process and the primary questions that will be asked. This is particularly useful for Dr Ejiofor as her dyslexia sometimes means that she gets confused when given several questions at once or if there are distractions. She is now able to discuss the questions with the Research Access and Support Team to ensure that her understanding of the questions is correct.

> "Introducing Member 2: Leadership focus: questions regarding leadership and how applicants will develop their potential
>
> i. Tell us about the wider research/innovation field you work in, and its strengths and weaknesses? Why is your proposed programme important in this context?
>
> ii. Describe how you have demonstrated leadership so far and how have you developed your leadership attributes?
>
> iii. What actions will you take to further develop and establish your leadership potential?
>
> iv. Why will your work have a major impact on the field or sector, and what can you yourself do to maximise its impact?"
> *UKRI Future Leadership Fellowships – excerpt from: Example Interview Process and Questions for Candidates*

Dr Ejiofor has concerns about how accessible she will find the interview process, particularly in terms of accessing the building as a wheelchair user and in ensuring that she understands any follow up questions that the panel may ask. She is reassured to an extent by a statement in the funder's interview guidance and emails her contact at the funder for advice.

> "Accessibility requirements will be accommodated."
> *Wellcome Trust Early Career Awards*

The funder reassures Dr Ejiofor that the interview venue is fully wheelchair accessible including all facilities. Having discussed with Dr Ejiofor to identify her needs, the funder arranges for Dr Ejiofor to be allowed additional time for her interview to enable her to clarify any questions that are unclear, and for an access officer to sit on the panel and intervene in the event of misunderstandings.

The Research Facilitator schedules practice interviews for all of the candidates invited to interview by the funder. The panellists for the practice interviews have received training from their university to expand their knowledge and experience of EDI issues, helping them to ensure that the feedback that they provide is constructive and supportive.

Dr Ejiofor's journey to the real interview is difficult and emotionally taxing. She had booked train journey assistance in the form of ramps and wheelchair spaces well in advance. However, when her train arrived, the assistance was not provided and she was forced to advocate for ramps to be deployed so that she could board. She experienced similar at her destination and had to wait on the train for an hour when a ramp was provided after she phoned the station

customer service desk. Her tube journey was similarly frustrating with elevators being unexpectedly out of service, forcing her to find another route. Once she arrived at the interview venue she was stressed, upset, and late. She was welcomed by an officer of the funder who, noticing her stress, showed her to a private area to settle, reassured her that the funder understood her reasons for being late and that it would not count against her. The officer also offered to book a taxi back to the station for Dr Ejiofor after the interview, confirming that the funder would pay for this. The officer's understanding and flexibility, and the accessibility of the venue, meant that Dr Ejiofor was able to prepare herself for the interview.

Dr Ejiofor's interview went smoothly. Her interviewers had received training enabling them to understand their internal biases and to ensure that these did not compromise interviews or disadvantage any candidates. The panel were aware of the adjustments that the funder had agreed with Dr Ejiofor and implemented these appropriately and seamlessly as advised by the funder's officer. Dr Ejiofor, therefore, did not face any barriers in the interview itself and was able to perform to her full potential.

Post-award

The interview panel were impressed with Dr Ejiofor's research and career development plans, with her broad range of skills and experience, and with her research excellence. Dr Ejiofor's application was therefore ranked highly and the panel recommended that she be offered an award. The funder had some concerns, however, that the career development support that she would receive, as set out in her department letter of support, was somewhat formulaic. They therefore contacted her department, informing them that she would be offered the award provided that the university developed and committed to a personalised career development plan. The department asked the university Career Development Unit to support them in working with Dr Ejiofor to develop this to the satisfaction of the funder, and Dr Ejiofor was offered the award.

Dr Ejiofor's university, as her employer, provided her with reasonable adjustments to enable her to carry out her research, as arranged by the Research Access and Support Team. However, part of her work involved presenting at an overseas conference, and support for this was not covered by her regular adjustments. When travelling overnight, Dr Ejiofor requires a carer to travel with her for support with personal care. The funder offers disability-related support that can be applied for at any time during the award.

> "If you or a member of staff employed on your grant is disabled or has a long-term health condition, we offer different types of support during your grant. This includes help to carry out your project, report on grant progress, and attend events such as researcher meetings…
>
> We will supplement your grant for costs if any of the following people working on your grant is disabled or has a long-term health condition:
>
> - grantholder
> - coapplicants and coinvestigators
> - staff employed on your grant
> - students who are fully funded by a Wellcome grant"
>
> *Wellcome Trust*

Dr Ejiofor fills in a short and light-touch Adjustment Support form to request funding for the support that she needs. She is relieved that the form does not require her disclose personal and sensitive details of her disability and only asks for information on how the funding will support her funded work.

The funding substantially increases the resources that Dr Ejiofor uses in her research and, consequently, she is able to return her publication record and impact to the levels of excellence and volume that she attained in the earlier stages of her career. The career development plan enables her to plan and work towards the next steps of her career leaving her well placed to continue to progress beyond the end of the award. The postdoctoral researcher and student funded under the grant find Dr Ejiofor's varied career experiences and commitment invaluable to their own career development, and she goes on to provide them with mentoring and sponsorship throughout their careers.

08

8. GLOSSARY

ACRONYM	Meaning
AHRC	Arts and Humanities Research Council
ARMA	Association of Research Managers and Administrators
BBSRC	Biotechnology and Biological Sciences Research Council
BME	Black and Minority Ethnic
CO-I	Co-Investigator, typically a co-applicant on a research funding proposal which is led by a Principal Investigator
CV	Curriculum Vitae, or Resumé
DORA	The Declaration on Research Assessment
EDI	Equality (or equity, depending on the context), diversity and inclusivity
EOI	Expression of Interest, used by funders variously to gauge interest in a scheme or to sift applications to determine who to invite to submit a full application
EPSRC	Engineering and Physical Sciences Research Council
ERC	European Research Council
ESRC	Economic and Social Research Council
FAQ	Frequently asked questions
HE	Higher education
HESA	Higher Education Statistics Agency (for UK only)
LGBTQIA+	Lesbian, gay, bisexual, transgender, queer, intersex, asexual, and aromantic
MRC	Medical Research Council
NERC	Natural Environment Research Council
NIHR	National Institute for Health and Care Research
OUTLINE	An early stage application, used by funders to sift applications to determine who to invite to submit a full application
PI	Principal Investigator, the lead applicant on a research funding proposal
PRC	Peer Review College
SMART	Used to indicate objectives that are: Specific, Measurable, Attainable, Relevant, and Time-Bound
STEM	Science, Technology, Engineering, and Mathematics
STEMM	Science, Technology, Engineering, Mathematics, and Medicine
STFC	Science and Technology Facilities Council
UCL	University College London
UD	Universal Design
UK	United Kingdom
UKRI	UK Research and Innovation, a non-departmental public body, sponsored by the UK government, bringing together the nine UK public research councils
WCAG	Web Content Accessibility Guidelines

APPENDIX A – METHODOLOGY

A mixed-methods approach was taken to identifying the barriers faced by researchers, involving

a) A detailed analysis of a sample of research funding schemes;

b) An international literature review; and

c) A series of focus groups and interviews.

Scheme analysis

A sample of funders were selected from the largest external research funders by discipline (ie, ~3 key funders for each of humanities, mathematical and physical sciences, medical and life sciences, and social sciences). A sample of schemes from these funders was selected to ensure that, across all funders, a range of different types of funding (ie project grant, fellowship, centre grants) and different career stages were covered. In addition to this, two internal University of Oxford schemes were selected to ensure that (a) differences between external and internal schemes could be captured, and (b) the University of Oxford's own performance was assessed. Schemes were selected solely on these criteria, without use of prior knowledge or hearsay in relation to funders or schemes. The following schemes were analysed:

Funder	Scheme	Funding and standard durations[133]
AHRC	Standard Research Grant (including Early Career route)	£50k - £1m for up to 5 years
EPSRC	Standard/Responsive Mode	No limits in value or duration
ESRC	Centre Grants	£2.5m - £10m for up to 5 years
Leverhulme Trust	Early Career Fellowships	Up to £118k for 3 years
MRC	Career Development Awards	No limit, specific costs funded, up to 5 years
NIHR	Advanced Fellowship	No limit, specific costs funded, 2–5 years
Royal Society	University Research Fellowships	Up to £276,500 + estates and indirects, 5 years + possible renewal
UKRI	Future Leaders Fellowships	No limits in value, 4 years + possible renewal
Wellcome Trust	Early Career Awards	Salary + up to £400k, usually 5 years
Internal Oxford	John Fell Fund	Small awards up to £10k, Main awards over £10k with no upper limit
Internal Oxford	Strategic Research Fund	No limits in value or duration

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133 Information correct at time of analysis and subject to change, durations for some schemes can be extended for part time researchers, parental leave or sick leave

Documentation for each scheme was gathered from information publicly available on the funder's website. Where relevant documentation was unavailable, funders were approached to provide information directly. This additional information was generally provided where available. The following types of documents were gathered:

- Scheme webpage, information documents, FAQ, assessment criteria statements

- Scheme guidance for applicants

- Guidance/requirements for reviewers, including both scheme-specific and general

- Guidance/requirements for panellists, including both scheme-specific and general

- Funder policies that affect applicants in applying to the scheme

- Funder policies that affect the review/ assessment of applications to the scheme, including reviewer recruitment methods

Factors against which schemes could be analysed were identified through the literature as referenced throughout this report, discussions with representatives from Oxford EDU Advisory Groups and Staff Networks, and with both internal and external researchers from marginalised groups. The outputs from the focus groups/interviews were used to build on these discussions and produce the final set of factors.

Each scheme's set of documents was analysed for the scheme's relationship to and effect on these factors, both positive and negative, with qualitative results recorded in a spreadsheet.

Factors were divided into direct barriers, indirect barriers, and good practice.

Direct barriers:

- Lack of clarity and/or transparency, inconsistencies/disparities in information availability;
- Reinforcing traditional career trajectory and/or characteristics/excluding alternatives, including process areas such as interviews required;
- Costs for specific needs not provided or not mentioned, including parental leave and sick leave, and corresponding extensions;
- Uniform/inflexible expectations not recognising differences in circumstance;
- Assessment based on individual past achievement rather than team potential;
- Assessing value for money/the level of funding requested against the significance of the project unless accessibility costs are requested separately or reviewers guided to exclude these costs;
- Language that excludes;
- Lack of accessibility (both disability and first language not English);
- Additional duties expected without compensation, time allowance, or recognition; and
- Scheme timings disadvantage researchers in marginalised groups.

Indirect barriers:

- Specific costs either unfunded or funded via a block grant;
- Role of bias in peer review, including profile of peer review and panel composition;
- Areas of application that require institutional support for completion;
- Eligibility requirements based on individual status with institution;
- Areas of application that require strong networks;
- No feedback, or unconstructive personal feedback;
- Passive, incomplete, or low-impact EDI statements; and
- Policies/practices that disproportionately impact those with less mentoring, support, sponsorship, or who are more likely to be disadvantaged by bias.

Good practice:

- No closing date, accept applications anytime;
- Specific costs funded that will assist researchers in marginalised groups, including reimbursing parental leave and sick leave with corresponding extensions;
- No statement/letter required from HoD or mentor;
- Enabling and/or encouraging flexibility in career trajectory;
- Part-time working permitted at all levels, award period extended accordingly;
- Transparency, eg success rates, time to prepare application, all information written and public;
- Guidance to reviewers and panellists is comprehensive, and enables them to avoid bias effectively; diverse panel composition;
- Flexibility in process for accessibility, alternative formats, support for marginalised applicants, and eligibility;
- Inclusive language; and
- Feedback always provided, and filtered for personal/discriminatory remarks prior to use/dissemination.

Scheme analysis data will be made available via the Oxford University Research Archive.

Focus groups

Research staff across the University of Oxford were invited to self-nominate to participate in either a focus group or interview to discuss their experiences of seeking research funding. The invitation was extended to administrative staff who were previously researchers in order to avoid survivorship bias. Eligibility was limited to those who identified with one or more of the following characteristics:

- Women;
- Racially minoritised;
- Disability;
- LGBTQIA+.

Recruitment was challenging, likely due to other EDI-related consultations happening around the same time within the University of Oxford resulting in identity taxation. Nineteen (19) participants were involved in the focus groups and interviews.

Sample overview – characteristics

Women	13
Racially minoritised	9
Disabled	3
LGBTQIA+	2
Undisclosed characteristics	2

Sample overview – Division

Medical Sciences	11
Mathematical, Physical, Life, or Engineering Sciences	4
Social Sciences	4
Humanities	0

Following the consent process, participants were invited to complete a short survey identifying their characteristics, key experiences, their preferences for diverse or similar characteristics focus group, and to choose either a focus group or an interview. The information from this survey was used to group focus group participants to maximise their safety (due to the diverse characteristics of participants) and the likelihood of them feeling able to speak freely. Survey information was not used to link data from the focus groups/interviews to specific personal characteristics.

Focus groups and interviews were semi-structured, with participants invited to identify what they considered to be the characteristics of a successful researcher, discuss their experiences of the research funding system using a visual prompt showing the process, (including highlighting omissions from the prompt) and suggest possible solutions.

All were conducted online with audio recording and transcription. Transcripts were anonymised, including removal of funder and discipline names, and genders. Attributions of quotes in this report are limited to the characteristics necessary to give meaning to the quote and to those that can be gleaned from the anonymised transcripts.

Transcripts were analysed to identify the key themes emerging, coded, and each of these summarised in an analysis document.

Transcripts will not be published or deposited in a publicly accessible data repository as, although anonymised, it is possible that participants could be identified from the experiences that they shared. It is therefore necessary to maintain transcripts in confidence in order to protect participants' privacy and to limit their exposure to risk.

Ethics approval for this element of the research was provided by the University of Oxford Social Sciences Inter-Divisional Research Ethics Committee (SSH IDREC) with reference R75558/RE002. Research adhered to the Association of American Geographers Statement on Professional Ethics[134].

Limitations

The majority of participants were early and mid-career researchers with only one senior researcher participating. However, career-stage transition points were captured and the scheme analysis covers all career stages.

Researchers from across all four academic Divisions within Oxford were invited to participate in focus groups; however, no researchers from the Humanities Division came forward. The scheme analysis includes schemes and funders targeted by humanities scholars.

This research does not confirm causal links between the negative experiences of individual researchers and their individual success or otherwise in securing research funding. It identifies a experiences that researchers in marginalised groups face in their efforts to obtain research funding, and examines how these relate to their protected characteristics and how they affect their chances of success. Further research to extend and further validate this study might focus on the experiences of senior researchers in all disciplines and humanities researchers at all levels.

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134   (American Association of Geographers, 2021)

APPENDIX B – EDI RESPONSIVENESS SPECTRUM

Gender Responsive assessment tools and frameworks are used internationally to improve equality in interventions, such as development projects and programmes. The WHO have produced a range of gender analysis tools,[135] for example, that can be used to assess and help guide design of projects and programmes to improve gender equity in health. The authors propose a similar framework, an EDI Responsiveness Spectrum, to be used here to support accountability by providing a baseline for an organisation's current performance and identifying objectives and actions for improvement (see Figure 4).

135 (Department of Gender, Women and Health, World Health Organization, 2011)
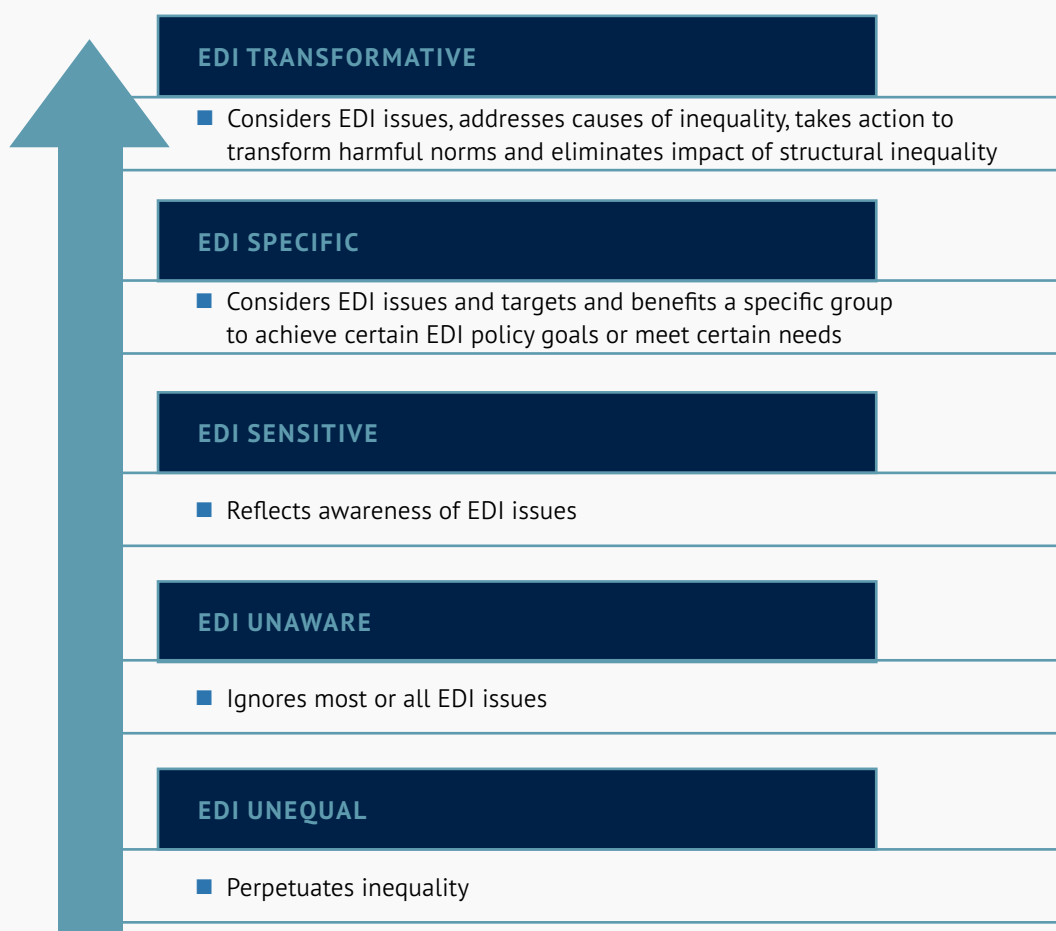
EDI TRANSFORMATIVE
- Considers EDI issues, addresses causes of inequality, takes action to transform harmful norms and eliminates impact of structural inequality

EDI SPECIFIC
- Considers EDI issues and targets and benefits a specific group to achieve certain EDI policy goals or meet certain needs

EDI SENSITIVE
- Reflects awareness of EDI issues

EDI UNAWARE
- Ignores most or all EDI issues

EDI UNEQUAL
- Perpetuates inequality

Figure 4: EDI Responsiveness Spectrum

Below, the recommendations are stratified into the top three of the categories in the EDI Responsiveness Spectrum.

EDI Sensitive:

	Universities	Funders
Access	AUF1, AU1, AU3, AU6, AU9	AUF1, AF1, AF3
Process	PUF2, PUF3, PUF6, PU1	PUF2, PUF3, PUF6
Assessment	EUF1	EUF1
Policy	YUF1, YUF2, YU1	YUF1, YUF2, YF1, YF2

EDI Specific:

	Universities	Funders
Access	AU2, AU5, AU8	
Process	PUF1, PUF4	PUF1, PUF4, PF1, PF2
Assessment	EUF2	EUF2, EF1, EF2
Policy	YUF3	YUF3, YF4

EDI Transformative:

	Universities	Funders
Access	AU4, AU7	AF2, AF4
Process	PUF5	PUF5
Assessment	EUF3	EUF3, EF3
Policy	YU2	YF3

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