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## **Inclusion matters in time of COVID: 12 ways to seize the moment for change**

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Since the beginning of the COVID-19 pandemic, [evidence suggests](#) a widening of inequalities in academic science, technology, engineering, mathematics and medicine (STEMM) careers affecting people who are already marginalised within these fields.

Here we propose ways in which the UK higher education sector could utilise the current state of flux in the system, including the move to remote collaboration and changes to publication and grant application processes, to create new and better opportunities for marginalised groups in STEMM.

We are running two [Inclusion Matters](#) projects funded by the Engineering and Physical Sciences Research Council (EPSRC), called [visNET](#) and [Evidence Base](#). Their goal is to design interventions, informed and evaluated by a combination of qualitative and quantitative research, to affect meaningful changes in reducing inequalities in academic research culture.

Based on our observations of the challenges and opportunities presented by the COVID-19 crisis, we present our 12 recommendations for how institutions could improve equality, diversity and inclusion (EDI).

### *Monitor and mitigate*

1. Funders should create and adequately resource an early warning system that identifies EDI challenges (including caring responsibilities), triggers interventions, and ensures accountability in grant applications. This did not occur for the [first submissions to the UK Research and Innovation \(UKRI\) COVID call](#).

There has been a negative impact on equality and diversity in funding from UKRI STEMM research councils. For example, we [found](#) a drastic drop to below-average in the proportion of female Principal Investigators on COVID-19 Medical Research Council grants compared with other grants. The absence of Black principal investigators amongst the awardees of a 4.3 million (US\$5.9 million) UKRI/ NIHI's funding call to investigate Covid-19 risks among ethnic minority groups led ten Black female HE employees to provide recommendations, in an open letter to UKRI, for systemic changes to end racism in funding [allocation](#).

2. Because complex scientific problems cannot be solved without diversity of thought and representation, funders and universities should incentivise submissions from marginalised researchers. This could include:

- more targeted advertising and thoughtful timing of both internal and external grant deadlines (e.g. not during school holidays).
  - greater flexibility with deadlines such as rolling deadlines (acceptance and response to applications on a continuing basis), as seen with the UKRI COVID-19 [call](#), and altering deadlines in line with changes to UK restrictions to account for increased demands, such as those occasioned by school closures and the reintroduction of self-isolation for those at risk.
  - in higher education institutions, a re-assessment of non-research-related workloads and the provision of administrative support, particularly to marginalised STEMM colleagues and those with home-related responsibilities or additional COVID-19-related barriers. To achieve this, it would become common practice to solicit academics' accounts of the barriers they encounter and the support that would help to remove/reduce those barriers.
3. Publishers should gather, and rapidly disseminate, [data on publication rates](#) by gender and other protected characteristics (as defined by the UK Equality Act 2010), following invitations to authors to provide diversity data on submission. We propose that such data is not made available to editors or reviewers, so as to prevent it from becoming a basis for further bias.

Simultaneously, institutions should act on these inequalities by offering support to underrepresented researchers, for example:

- editorial support through publication workshops;
- facilitating collaboration, notably support from those who may not have been negatively impacted by COVID-19 and may have more capacity ;
- requiring justification for single-gender-authored publications and those lacking in diversity.

#### *Investment in Early Career Researchers*

To offset financial challenges posed by the pandemic, some UK higher education institutions have deployed hiring freezes, reductions in 'guaranteed hours' teaching contracts, and non-renewal of fixed-term contracts.

Early career researchers (ECRs) on precarious fixed term contracts comprise the majority of the UK higher education institution research workforce. The proportion of women and people of colour [employed on such contracts](#) is disproportionately high, so these groups are likely to be most impacted by such institutional cost-saving measures.

We suggest that:

4. At the very least, grant holders should be transparent about the availability and distribution of no-cost time extensions on research grants and pursue these opportunities when available. Where funding is available, keeping precarious staff in work should be prioritised.
5. UKRI could exert an influence on universities by requesting that additional funding to support grants and PGR funding be distributed in a manner that ensures the most equitable and significant, positive impact on research and researchers. An example would be to base the eligibility of a grant for funding extension on documented impacts only and not on its end date.

[UKRI have recently advised](#) that postgraduate research students not in their final year must absorb the six+ months absence from their labs by re-planning their research to submit a reduced body of

work for assessment. This move has major implications for student and supervisor workload and mental health. Most importantly, it has potentially devastating consequences for the future job prospects of this generation of scientists as they compete against postdoctoral researchers not similarly disadvantaged.

6. To restore equity, rapid steps should be taken to invest in ECRs, (postgraduate and postdoctoral researchers), including funded extensions for all PhD students. Positive actions already implemented by some higher education institutions and stakeholders should be emulated, such as:
  - The Leverhulme Trust's announcement of increased funding to support [investment in ECRs](#).
  - The University of Edinburgh's utilisation of UKRI funding to invest in 30 [Chancellor's Fellowships](#) with a target of recruiting 50% women and 20% BAME fellows from within the institution.

#### *Online visibility, networking and collaboration*

COVID-19 lockdowns have amplified the value and range of opportunities afforded by online platforms, a shift long requested by both [disabled academics](#) and those pushing to reduce the carbon footprint of [academic travel](#).

Institutions and organisations should capitalise on this environmentally beneficial transition while ensuring early adoption of inclusive best practices by, for example:

7. Encouraging individuals to update online profiles and engage on social media platforms, with training and guidance as necessary.
8. Rethinking online conferences and webinars as a unique opportunity to network with researchers across the world and designing these to realise EDI:
  - organisers should be more conscious than ever of diversity, ensuring its realisation across contributors, especially keynote speakers
  - sessions should be recorded to enable asynchronous participation
  - questions should be curated by the chairs via chat functions with options for anonymity
  - semi-structured, facilitated networking opportunities during virtual breaks before and/or after conferences could reduce clique behaviour.

For many colleagues, the pandemic has resulted in social isolation, but opportunities for collaboration offer a powerful tool to alleviate this, while stimulating new and innovative research.

9. Groups are using collaborative platforms to create new [worldwide communities](#) in their field, write collaboratively, undertake meta-analysis, or run [hackathons](#) to solve large-scale research challenges. The latter approach to scientific problem-solving is the apparent aim of proposed new funding structures such as the [Advanced Research Projects Agency](#). It is vital that, now and in the future, initiatives like ARPA truly enable embedding of cooperative teamwork and do not perpetuate the 'lone genius' [myth](#) that perpetuates non-inclusive ideals in STEMM.

#### *Flexible working*

10. Lockdowns and campus restrictions have underscored the power and potential of remote working to open up opportunities to those previously excluded (e.g. those with caring responsibilities or long-term health conditions), while advancing discussion around work-life balance. We recommend a continuation of more flexible working arrangements beyond the crisis, thereby shifting these from the exception to the norm.

## *Leadership*

COVID-19 has halted, altered and redirected research, yet colleagues have worked tirelessly. They are often expected to achieve more in fewer working hours and in ways that are rarely accounted for in typical review and reward processes. Higher education institutions should understand, value and reward these non-traditional activities in future annual review processes or risk further increasing inequalities in career progression.

As UK universities are part of a wider system, affected by multiple external pressures, stakeholders such as funding councils, unions, and the Research Excellence Framework should actively acknowledge these shifts with the kind of inclusive leadership that is crucial to implementing positive change.

They should, for example:

9. Ensure diversity across higher education institution senior management teams and including EDI representatives and those on precarious contracts in decision making.
10. Encourage regular discussions between researchers and line managers to support their professional development and career objectives and encourage creative initiatives and approaches. Postdoctoral researchers, whose careers are particularly at risk, should be supported beyond the objectives of their current projects.
11. Re-focus hiring and promotion criteria to account for the disparities between colleagues affected by COVID-19, on the understanding that all have experienced significantly changed working environments and practices, with some advantaged and others disadvantaged.
12. Record, account for, and promote the varied activities of researchers over the last few months, e.g., use the Resumé for Researchers to replace the CV/track record and so identify a wider range of contributions such as the ‘development of individuals’ and ‘contribution to wider society’ in alignment with recent UKRI recommendations.

For sustainable change to occur, all key stakeholders, but particularly those in decision-making positions, in the higher education system must be more open to radical changes, to mitigate the disproportionate disadvantages faced by women and BAME researchers in the current systems and structures, in which Covid-19 has amplified and exacerbated academic inequalities, such as funding.

While the pandemic began with a widening of the inequalities already evident in STEMM, we believe that this moment also offers a critical defining opportunity to build a more equal just future to the benefit not only of academic STEMM research fields and practitioners, but also to wider society.

This paper is based on a recent [SocArXIV preprint](#).