

# Exchanges

The Interdisciplinary Research Journal

Volume 11, Issue 3 (Summer 2024) - Special Issue



## Issue Highlights:

- Papers inspired by and from the International Research Culture Conference (IRCC) 2023
- Looking towards IRCC 2024
- Case studies, policy & practice
- Experiences, reflections & perceptions

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# Exchanges: The Interdisciplinary Research Journal

Volume 11, Issue 3 (Summer 2024) - Special Issue

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A Managing Editor-in-Chief based at the University of Warwick oversees development, policy and production, while an international Editorial Board comprised of early career researchers provide advice and practically contribute to editorial work. Associate editors are recruited to participate in producing specific special themed issues. *Exchanges* usually publishes two issues annually, although additional special themed issues are periodically commissioned in collaboration with other scholars.

*Exchanges'* major missions are to encourage intellectual exchange and debate across disparate research communities, along with developing academic authorial and editorial expertise. These are achieved through providing a quality assured platform for disseminating research publications for and by explicitly cross-disciplinary audience, alongside ensuring a supportive editorial environment helping authors and editors develop superior academic writing and publishing skills. Achieving enhanced contributor esteem, visibility and recognition within these broader scholarly communities is a further goal.

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# Research Culture Readiness: Editorial, Volume 11, Part 3

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*The first deliberate attempt to foster a non-monastic culture, was made by King Alfred (840-899). He tried to civilise his ealdormen, reeves and thanes, hoping to fashion not only more enlightened executants of his rule of law, but active preservers of a culture that hitherto has been claustral and monkish. (Armytage, 1955: 20)*

## Introduction

Welcome to the twenty eighth edition of *Exchanges: The Interdisciplinary Research Journal*, our second issue of 2024 and seventh special issue to reach publication. As always if you are a new reader, thanks for joining us and read on to learn a little more about the journal, alongside advice on how you can contribute to future issues. If you're a returning reader welcome back, and hopefully you'll find this editorial a useful introduction to this issue too. Alongside this content, readers will also find advice for potential authors and an update on our social media channels.

### *Something Cultured*

Unless you've been under a rock<sup>i</sup> in recent years, you can't have failed to notice research culture is presently a hot, exciting and deeply relevant topic within higher education. Here at Warwick, where *Exchanges* is currently hosted, we had the *National Centre for Research Culture* (NCRC) established last year specifically to 'improve research culture across the UK Higher Education sector, and beyond'. (NCRC, 2024; Gidley, 2023). Naturally, we must also mention the importance research culture is set play within the forthcoming REF (research excellence framework) 2029's assessment schedule (Corner, 2023). We have certainly come a long way from Alfred's efforts to broaden his own contemporary research cultural imperatives!

What is research culture exactly and why has everyone gotten so excited about it? Doubtless readers will be readily able to locate a myriad of definitions for it out in the wilds, but also in the pieces within this issue. Warwick itself takes a steer from the Royal Society expressing the concept as something which 'encompasses the behaviours, values, expectations, attitudes and norms of our research communities. It influences

researchers' career paths and determines the way that research is conducted and communicated' (**Warwick, 2024**). Interestingly, the NCRC has taken a neutral position and has specifically avoided providing its own definition, to avoid restricting a healthy and vigorous debate among the wider academic community.

Now part of establishing, nurturing and propagating this debate was the establishment of an annual conference on research culture. In 2023 we saw the hosting of first International Research Culture Conference (IRCC '23) at Warwick, which was very well attended. I was fortunate last year to be approached by Sotaro Kita and colleagues to explore if *Exchanges* could become part of these ongoing debates, specifically by hosting and publishing papers drawn from speakers' sessions at the event. I am pleased to say we were able to rapidly accept this idea, and since then have been working with one of our larger teams of associate editors in creating this volume. We opted early on to aim for critical reflection articles, to both increase the turnaround to publication speed and flexibility of narrative approach for authors. In this way, rather than insisting on a longer, peer-reviewed article approach, we hoped to capture as much of the essence of each speaker's presentation without needlessly enforcing a more 'didactic' written framing which may have created an obstacle for some authors in expressing their thoughts.

The call for involvement in this issue was therefore quite broad, in that we not only invited every presenter to consider submitting a paper, but also to the delegates who attended as well (**Exchanges, 2023**). Given that much of any conference's value comes from the discourse it engenders in its delegates, as much as the 'sage on the stage' holding forth, this was a crucial step in seeking to offer as inclusive a platform as possible in our pages. As it turns out, the finally tally of papers this issue is primarily drawn from the speakers themselves, which is a shame but perhaps something we can rectify in future volumes. Nevertheless, following our call for expressions of interest we received 39 submissions from potential contributors – the highest ever received for any special issue. Following a brief review, we warmly invited all of these authors to submit their full papers, with 32 managing to submit by or close to our late January deadlines.<sup>ii</sup> At time of writing by early June we already had in excess of 20 articles publication ready, and doubtless more to come in the next few weeks, which means this issue of the journal is undoubtedly the largest we have ever produced in terms of page length and article number alike.<sup>iii</sup> A milestone achievement indeed!

As with any special issue there's a thin line between waiting for every paper to be ready and making the issue publicly available. This is often a topic of hot discussion between myself and the special issue leads, trying

to balance the ambition to have the issue published against a desire to be as complete as possible in its pages. There's an unofficial rule-of-thumb for *Exchanges*, that once we pass 80% of articles reaching publication-ready status, we normally move towards a publication date soon afterwards.<sup>iv</sup> We started approaching this tipping point in May, and hence our plans for a July publication date, rather neatly tying into the IRCC '24's delegate bookings, were laid (IRCC, 2024). I mention this next iteration of the research culture conference not just to give it some much deserved further publicity, but also to publicly note how *Exchanges* has been invited once more to be the official publication partner – a proposition we willingly accepted! Hence, readers can look forward to more engaging, intriguing and above all varied articles in a key of research culture in a year's time: perhaps even from inspired delegates this time. *Exchanges* will once again have a physical presence at the conference, so please come along to our stand or seek me out to chat about our plans for the next issue.<sup>v</sup> Or naturally, to talk about any other aspect of our activities of course. Not least of which the (hopefully) positive research culture we embrace within *Exchanges* and our associate editor programme – without whom we wouldn't have this issue in front of you today!

Anyway, enough about *Exchanges'* journey, let us turn now to the core of this exciting issue and consider the many articles appearing within it.

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## Papers

This issue is of course full of critical reflections derived from IRCC 2023, and like the conference itself varied, exciting and insightful in equal measure. Below are a brief description of each paper, its authors and a link for reading access convenience.

### *Critical Reflections*

We begin appropriately enough by asking *Why do we need an International Research Culture Conference?* In their paper **Rika Nair** and **Sotaro Kita** consider the lessons derived from the conference and what future directions the discussions, presentations and experiences from it suggest. Crucially for readers of this special issue, Nair and Kita's paper provides both a contextualisation of the conference, alongside offering a holistic guide to all of the contributing speakers and discourse who presented at it (1).

In *Reimagining Peer Review Needs Publishers and Institutions to Collaborate More*, **Stuart R F King** considers the importance of collaboration within peer-review reform. Highlighting steps which many publishers have taken, especially within the domain of preprints, King

argues how academic institutions should take a greater partnership role. In this way research assessment and related cultural aspects would both see benefits (13).

**Ammon Hāwea Apiata, Melanie Chivers** and colleagues present the findings of an interview series conducted with their academics. As they explore within *Reduced to a Number: Exploring the relationship between research culture and metrics*, the authors consider the researchers' perceptions and insights relating to assessment, metrics and impact. The authors clarify how this study highlights the structural factors and decision-making processes which serve to shape how scholars work in various enlightening ways (23).

Next, **Elizabeth Hidson** presents us with a consideration concerning *Developing a Research Culture with Trainee Teachers on International Initial Teacher Training Programmes*. In the paper, the author explores how such students conduct research during their studies, yet rarely adopt these practices within their future careers or teaching. Hidson proceeds to highlight how the Sunderland Reflective Action in Education project (SunRAE) was created as a counter to this trend, aiming to better enable and promote an active researching culture within the students' future teaching practice (30).

**Rachel Norman** and **Claire Bradley** proudly introduce Stirling's Research Culture Awards, created to celebrate those positively contributing towards enhancing their research environment. Their paper, *Key Features of a Positive Research Culture* inspects the traits, actions and activities of past success stories through a qualitative analysis of the award nominations and nominees. The paper highlights common factors among these champions, such as demonstrating a strong collegiality, good listening skills and an aptitude to share their experience: indicating key typifiers of those advancing a healthy research cultural environment (39).

Then **Anne-Marie Craig** and **Julie M Harris** take further strides towards *Foregrounding Positive Research Culture*, by looking at the emerging theme of excessive competition and its deleterious effects. Drawing on discourse across IRCC 2023 itself, the authors illustrate steps towards combating such competition which in turn helps to produce a more collaborative and collegiate research environment. As such, Craig and Harris advocate prioritising and exploring such positive anti-competition factors for further discussion at future research culture conferences (48).

After this, **Fiona Evangeline** and **Esther Kiruba Jebakumar Clifford** invite us to take a more granular examination in considering *The Burden of Research in Architecture*. Offering an overview of the field, the authors specifically examine status perceptions for architecture researchers

contrasted with practitioners, finding the professional recognition of the former is lacking. Consequently, the paper argues for the significant professional value researchers contribute in this field, underlining the necessity for giving architectural researchers appropriate respect and recognition (56).

Meanwhile, **Sarah Callaghan** and colleagues share with us their experiences in *Developing Fundamental Research Practice Training at the University of Oxford*. The authors note the challenge for researchers seeking to piece together a fragmented and increasingly vast array of guidance on current research best practices. To this end, they explore Oxford's evolution of an impactful training programme to better enable their researchers to situate, contextualise and update their research practices. (66)

We then consider the intriguing suggestion that *The More the Merrier*, with **Taryn Bell**, **Francina Clayton** and **Megan McLoughlin**. Their paper questions whether it is healthier to create inclusive researcher development provision or tailor it for specific academic communities. In sharing their own experiences, the authors conclude how offering a breadth of opportunities has been for them a most successful approach (80)

Elsewhere in their paper *Enhancing Research Culture at Warwick Medical School (WMS)*, **Kirstie L Haywood** and colleagues explore how research culture is perceived across their diverse WMS community. In seeking to quantify these perceptions their work was informed by a series semi-structured 'café-style' conversational events attended by researchers and students. The authors unpack how these engagements aided WMS in building a community-driven five-year plan and road map with an aim to enhance identified positive research culture aspects (92).

**Lesley Uttley's** article takes as its central theme *Research Culture's Role in Contributing to Research Waste*. Drawing on a research integrity project entitled 'Systematic Reviewlution' – no that's not a typo – Uttley considers the challenge arising from the overwhelming volume of rapidly published systematic reviews literature. In particular, the author considers how institutional factors are driving the publication of substandard quality reviews, presenting further problems to medical scholars and practitioners seeking a robust evidence base (114).

Next, **Jessica Howie**, **Michelle Blake** and **Tom Morley** consider *Global Perspectives on Open Research Culture* in their paper, through twin academic library-based case studies. Examining the attitudes and practices at sites in New Zealand and the UK, the authors contrast the maturity and engagement with research culture in both locales. The authors take pains

to stress the key role libraries and their staff often play as academic partners in facilitating positive institutional cultural change ([126](#)).

In *Engaging Academics with Outreach*, **Phil Jemmett**, **Caroline Cannon** and **Margaret Low** discuss the development and outcomes of the STEM Connections training project. The paper firstly considers the literature of outreach, subsequently asking questions of why institutions seek to engage with the populace beyond their walls. Underscoring the benefits such activities offer, the authors proceed to explore the STEM Connections programme's delivery, highlighting the tangible benefits proffered to participating researchers' aptitudes and skill-base ([139](#)).

**Aidan P Thompson** seeks to justify *The Moral Dimension to Developing Research Culture* within their paper. Drawing on synergies and comparisons with work on character education, and examined through a moral lens, the author argues how it is possible to view research culture's development as a more holistic process. Within these perceptions and morally focussed approaches, Thompson offers three framework approaches in developing a positive, attractive and beneficial research culture environment ([161](#)).

**Mollie Etheridge**, **Kate Murray** and **Katherine Dawson** meanwhile ask us to consider *Disrupting Academia's Care-Free Narrative*. In their paper they consider the narrative CV which has been growing in popularity in contrast with a more traditional academic CV. However, they identify such newer approaches can still serve to obfuscate 'care inequalities', and perhaps should be embraced with a modicum of caution ([175](#)).

**Craig Carnegie** and **Naomi Ogunkola** examine *Employability Schemes for Young People in STEM*, through a diversity, inclusion and career development framing. The authors explore their preparations, implementation and outcomes arising from a project designed to inspire young people to develop a career in the sciences. As such they share the experiences, successes and lessons learned which can be deployed elsewhere for hopeful similar degrees of engagement ([193](#)).

Drawing on survey work at their respective institutions, **Karin Wahl-Jorgensen** and **Candy Rowe** examine the challenge posed from *Time Poverty and its Impact on Research Culture*. The authors argue that tackling such time poverty is essential to enable positive research cultural change. They stress how a systematic, rather than fragmented, approach is required though, as without it, efforts towards positive research culture changes will be stifled with researchers unable to find sufficient time to engage with the programme ([205](#)).



By contrast, in *An (Research) Enabler* **Stefanie Thorne** offers some autobiographical reflections as a research administrator framed within a developing research culture context. Clarifying the wide range of actors outside of academics who can ‘enable’ research, Thorne moves to problematise the term ‘enabler’ as possessing negative connotations. Through this paper the author hopes to draw attention to the challenges of unknowingly utilising terminology possessing dualistic interpretations in the research culture space (218).

Next **Colleen Thomas** and colleagues tackle a topic close to *Exchanges’* heart, as they explore *Research Culture Challenges among Early Career Researchers*. Such challenges, the authors argue, differ from those encountered by more seasoned and established scholars. Through a qualitative study using various sampling methods and working with local ECRs, Thomas and colleagues highlight how precarity, mentoring, and acknowledgement represent particular barriers to these nascent researchers (225).

Taking a wider view, **Amanda Chukwudozie** and **Chris Sims** ask us to consider *A Decolonising Approach to Policy Impact in the Global South*. The paper especially highlights extant challenges around postcolonial power structures and the potentially inequitable partnerships which can potentially arise. Highlighting the University of Nottingham’s experiences in exploring this domain within a policy impact framework, the authors offer some invaluable practical suggestions for other institutions to embrace (239).

Offering a resonance through a more granular view of enhancing research culture practice, **Rola Saad, Ya He** and **Ziyang Hu** discuss how they have been *Breaking Barriers: Promoting inclusive research culture among PGR engineering students*. The authors discuss how they better conveyed concepts of an inclusive research culture to engineering research students, through a developmental event. In particular they discuss the use of an accompanying boardgame which offered an enhanced learning experience, encouraging teamwork and creative problem solving (252).

Taking us in a different direction, **Syed Mustafa Ali** and colleagues address a timely and important issue in *Addressing Ethnic Health Inequities by Improving the Inclusiveness of Digital Health Research for South Asians*. The authors look at how digital health apps must address existing health inequities if they are to be truly effective. In this respect, the paper continues by making recommendations to technology developers in better understanding the cultural context and behaviours of the South Asian community (284).

We turn next to **Anna Fancett**'s article – *Developing Researchers' Writing Skills* – wherein the author considers a modern paradigm for evolving academics' communication skills. Based on a series of workshops, Fancett reflects on the challenges, lessons and outcomes from these sessions. Through this exploration, the author hope to provide insight for other researcher developers considering developing their own researcher writing skills programme ([304](#))

Definitions of research culture abound in many of the papers this issue, and in *Five Adjectives to Convey What Good Research Culture Looks Like*, **Sotaro Kita** brings insights into the particular approach adopted at Warwick. The author argues that through outlining the characteristics of 'good culture' it is possible to engender deeper, strategic discussions. Moreover, Kita stresses the importance of adaptability within the rapidly evolving domain and perceptions existing around research culture ([315](#)).

Resonating with Thomas and Saad's papers, **Fiona L Fisher** looks into *Unleashing the Power of Postdocs* through improving their research culture experiences. The author stresses the value to the academy and society postdoctoral researchers offer, which can be better enabled through offering a diverse range of development programmes. Fisher argues research funders have key roles to play in facilitating effective change too. Consequently, broader career opportunities can be showcased to the benefit of postdocs, institutions and wider society alike ([321](#)).

Craig and Harris' paper ([48](#)) finds a companion in *Research Culture: People, process, impact... and knowledge too?* Here, **Robert Pilling** explores some of the personal research culture resonances which arose from the IRCC '23 presentations and discourse. The author highlights in particular the perceptible dominance of problem-based thinking across the conference. Pilling therefore proposes various frameworks to take forward further productive discussions around research culture, within a subjective, objective, practical or institutional framing ([333](#)).

Then, in *From 'Whiteness' to the Privilege Continuum*, **Carola Boehm**, **Arinola Adefila** and **Thushari Welikala** bring us back to questions of EDI (Equality, Diversity and Inclusion) and research careers. Their paper showcases a 'different approach' to EDI interventions, which help enable an 'affirmative approach' in achieving diversity targets or aspirations. The authors argue a greater focus on adapting processes and working cultures are more effective in enabling successful change, than addressing a 'deficit model' approach ([344](#)).

Offering us another institutional snapshot, finds **Shareefa Fadhel** and colleagues concerned about *Identifying Metrics for Measuring Research*

*Culture at the University of Leeds*. In exploring their metric-journey the authors offer insights into various approaches and considerations which were valuable in creating an effective toolset. In particular, they examine the SCOPE framework, their reasons for adopting it as a method and how it has been deployed to measure research culture within their institution ([362](#)).

In contrast, across the Pennines, at the University of Manchester, **Rachel L Cowen** and colleagues are *Working Towards an Inclusive Research Culture Through EDI Education, Engagement and Empowerment of the Research Community*. The authors illustrate how Manchester's Inclusive Research Transformation Programme has shaped future leaders' perceptions and mindsets into a more inclusive modality. As a result, Cowen and colleagues' paper shares their learning journey, outcomes and direction of travel with respect to strategic alignment of EDI and research activities ([383](#)).

Finally, we close with another institutional case study as **Jemina Napier**, **Fiona Armstrong** and **Catalina Bastidas** explore the steps Heriot-Watt University has taken in *Empowering a Global Community Through Co-Production of a Connected University Research Culture*. They explore the ways in which the community were consulted and engaged in a co-design process to produce a 'global action plan'. Furthermore, the authors stress their hopes in how this approach will serve to foster a positive research culture across their diverse geographic institutional locations ([400](#)).

We hope our readers both enjoy these articles, and find they stimulate their own research culture thinking. Please do reach out to the authors, as I am sure they, like we, would love to continue the conversations this issue has recorded.<sup>vi</sup>

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## **Calls for Papers**

While the call for papers around IRCC '24 will appear following the conference this September, we would like to remind all readers and potential authors of our various other open calls for papers. Readers and potential authors alike might also wish to register for our email newsletter or engage with following our social media to keep up with our very latest announcements and opportunities. You will find the links for these towards the end of this editorial.

### *Open Calls for Paper*

*Exchanges* continues to invite and welcome submissions throughout the year on any subject. There are **no manuscript submission deadlines** on our open call and submissions will be considered throughout the year. Manuscripts therefore may be submitted for consideration via our online submission portal at any point. While *Exchanges* is an interdisciplinary journal, we define this as presenting a cross-disciplinary range of published works. Hence, while articles which draw directly or indirectly on interdisciplinary methods, methodologies, praxis and thinking are warmly welcome, this is *not* a pre-requisite. Hence, any topic, written in a manner suitable for a broad, scholarly, academic audience is likely to be accepted for consideration in our pages. Likewise, articles from researchers, practitioners and independent scholars are all equally welcome.

Manuscripts can be submitted for consideration as traditional peer-reviewed research or review article formats, which will undergo a rigorous, double-anonymised external review process. Alternatively, manuscripts may be submitted as one of our editorially reviewed formats - briefer formats which often are able to transit to publication faster.<sup>vii</sup> The editorially reviewed formats can be especially suitable for first-time authors, or those looking to embrace reflexivity, posit an opinion or share professional insights. It is notable that all article formats receive extensive reader attention and downloads.<sup>viii</sup>

Word counts and requirements for all content formats vary slightly, and prospective authors are strongly encouraged to review our author guidance and advice ahead of submission.<sup>ix</sup> Where an exception to the norm is required, authors should discuss their anticipated manuscript with the Chief Editor *before* submission. Manuscripts passing our review processes and accepted for publication will subsequently appear in the next available regular issue, which are normally published in late April and October.

Notably, *Exchanges* has a core mission to support the development and dissemination of research by early career and post-graduate researchers (IAS, 2024), we are especially pleased to receive manuscripts from emerging scholars or first-time authors. However, contributions from established and senior scholars are also welcomed too. Further details of our open call requirements can be found online (Exchanges, 2024a).

### *Informal Approaches*

As Editor-in-Chief I welcome approaches from potential authors to discuss prospective article ideas or concepts for *Exchanges*. However, abstract submission or formal editorial discussions ahead of a submission are *not* normally a prerequisite, and authors may submit complete manuscripts

for consideration without any prior communication.<sup>x</sup> Authors are always encouraged to include a *note to editor* outlining the [article format](#) or call under which their manuscript is to be considered along with any other considerations they wish to bring to my attention.

*Exchanges* is a diamond open-access, scholar-led journal, meaning there are no author fees or reader subscription charges, and all content is made freely available online (Fuchs & Sandoval, 2013; Bosman et al, 2021). Furthermore, authors retain copyright over their work but grant the journal first publication rights as a submission requirement. *Exchanges* is happy to support translations of our published articles subsequently appearing in other suitable journals, and requests only that a link back to the original piece is incorporated for completeness. Authors may wish to familiarise themselves with *Exchanges'* journal policies for further information on how we handle author contributions (Exchanges, 2024b).

All submitted manuscripts undergo initial scoping and originality checks before being accepted for editorial review consideration. Manuscripts seeking publication as research articles additionally will undergo one or more rounds formal peer-review by suitable external assessors. Editorial decisions on manuscript acceptance are final, although unsuccessful authors are normally encouraged to consider revising their work for later reconsideration by the journal.

Further advice for prospective authors can be found throughout the *Exchanges* and IAS websites (Exchanges, 2024c, IAS, 2024), as well as in our editorials, podcast episodes and blog entries.

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## Forthcoming Issues

We will not be resting on our laurels for the summer – chance would be a fine thing – as there is another special issue rapidly heading towards publication readiness. The long-awaited celebration of Warwick's *Modern Record Centre* (MRC) and its 50th anniversary is currently on track for an August publication. So, you can look forward to another issue of *Exchanges* to enjoy while resting on a tropical beach somewhere. After that, I would expect our regular *Exchanges'* autumn issue would follow in late October, giving me at least a month or so to catch my breath. Beyond that we move into the realm of our other developing special issues: *Gender & Intersectionality*, *Sustainability Culture*, and *Queerness as Strength*. I'd hope we'd get to see all of these in 2025. Oh, and of course, the IRCC '24 special issue should be coming out around the same time as this one, a year from now.

## Acknowledgements

I would like to make known my gracious thanks to everyone involved in making this issue a reality. Especially I'd like to thank **Sotaro Kita** and **Rika Nair** at the NCRC for their gracious invitation to become the official publication partner for the IRCC '23, and beyond. I would also like to celebrate all the associate and regular editors who have worked diligently, enthusiastically and generously behind the scenes. This issue would not have been possible without you – so thank you to the team (deep breath): **Alice Golisano, Andreana Pastena, Belayneh Gedifew, Bing Lu, Harriet Richmond, Michelle Devereaux, Roy Rozario, Sharon Coleclough, Zsuzanna Koczor-Benda** – as well as **Sotaro Kita** and **Rika Nair** once again. My hope is you all learned something about the positive research culture we try to engender at *Exchanges*, and the journal has most certainly evolved through your experiences and contributions too. A stunning team to work with, I have to confess – the IRCC '24 journal team will have a lot to live up to!<sup>xi</sup>

My thanks as always goes out to all our authors for their vital intellectual contributions towards this particular edition too. Likewise, my thanks to the members of our Editorial Board for their continued support and efforts on behalf of *Exchanges*, and Associate IAS Director **Fiona Fisher** and the [Institute of Advanced Study](#) for their continued support of *Exchanges'* diversifying mission.

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## Continuing the Conversation

*Exchanges* has a range of routes, groups and opportunities for keeping abreast of our latest news, developments and calls for papers. Some of these are interactive, and we welcome comments from our readership and contributors alike.

Bluesky: [@ExchangesJournal](#)

Twitter/X: [@ExchangesIAS<sup>xii</sup>](#)

Editorial Blog: [blogs.warwick.ac.uk/exchangesias/](https://blogs.warwick.ac.uk/exchangesias/)

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*The Exchanges Discourse Podcast*

[exchanges.warwick.ac.uk/index.php/exchanges/podcast](https://exchanges.warwick.ac.uk/index.php/exchanges/podcast)

This year is our fifth season of the podcast, and with over 50 episodes there's plenty to dive into in our back-catalogue as you wait for new episodes to drop. We will hope to be welcoming many of the authors appearing in this issue onto the podcast in the coming months, so please do subscribe to our feed – it's completely free! There's also a handy list of [past episodes](#) available or you can stream the content from most popular podcasting platforms – and specifically our host at [Spotify for Podcasting](#).

*Contacting*

As Editor-in-Chief I am always pleased to discuss any matters relating to *Exchanges*, our community, contributions or potential collaborations. My [contact details](#) appear at the start of this editorial.

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Alongside a doctorate in cultural academic publishing practices, Gareth also possesses various degrees in biomedical technology, information management and research practice. His varied career includes running regional and national professional bodies, managing academic libraries alongside various applied research roles. Based at the University of Warwick's Institute of Advanced Study (IAS), he has been the interdisciplinary *Exchanges* journal's Editor-in-Chief since 2018. Today, he retains professional interests on power-relationships and evolution of scholarly academic publication practice, within social theory and political economic frameworks. He has aptitudes in areas including academic writing, partner relationship management and effective communication praxis, and remains a vocal proponent for academic agency through scholar-led publishing. A longtime fellow of the Higher Education Academy, he regularly contributes to a various podcasts and is also a Director of a property management company.



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## Endnotes

<sup>i</sup> And with due deference to King Alfred, let us hope that this wasn't a rock *cake*.

<sup>ii</sup> We actually had a 33<sup>rd</sup> submission in late April, which while we couldn't consider it for the special issue, will be appearing in our October 2024 volume of the regular journal.

<sup>iii</sup> For the record, prior to this issue – the most articles we had appearing in a single issue were 15 back in 2020 (vol 7.2) in our first special issue (*Cannibalism*). It holds the record for the most article pages too at 248, closely followed by vol 9.3 (*The Lonely Nerd*) weighing in at 225 pages.

<sup>iv</sup> This is true for this issue, although some special issues, notably the earlier *Lonely Nerd* one (vol 9.3), waited until all possible papers were ready.

<sup>v</sup> If you are planning on attending the conference online, then drop me an email and I'll be more than happy to arrange a video conference conversation to talk about the issue and the journal too.

<sup>vi</sup> I feel after that little lot, I might have to produce an update to *Exchanges* irregularly published index articles!

<sup>vii</sup> **Editorially Reviewed Formats:** e.g., Critical Reflections, Conversations (interviews) or Book Reviews. As these do not undergo external peer review, they are also usually able to be more swiftly published in the journal – provided they pass our editorial scrutiny.

<sup>viii</sup> **Top Articles:** This diversity of format interest is frequently reflected in our annual Top Articles list, which appears in the IAS annual report, and on our blog pages early in the new year.

<sup>ix</sup> **Word counts:** For the purposes of considering a submissions' word count, we do not typically include abstracts, references, endnotes or appendices. While submissions just over or under their word count will still be initially considered for review, any significantly in excess will normally be declined and returned to their authors with advice for revision.

<sup>x</sup> **Expressions of Interest:** We do on occasion solicit expressions of interest ahead of submissions for special issues. For regular (open or themed) issue submissions though, authors may submit their manuscripts without any prior contact.

<sup>xi</sup> For anyone interested in becoming involved as an associate editor for the next special research culture issue, get in touch ([gareth.johnson@warwick.ac.uk](mailto:gareth.johnson@warwick.ac.uk)) – it doesn't preclude you contributing as an author, and I'd love to have a geographically diverse team to work with on the issue once again!

<sup>xii</sup> Yes, we too would like to jump off Twitter/X given its current owner's recent political lurches, but for now we're still there given most academics seem to have retained their accounts. But we're increasingly favouring Bluesky.social as a strong alternative.

# Why Do We Need an International Research Culture Conference? Lessons from IRCC23 and future directions

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## Abstract

*The summer of 2023 saw shifts in the priorities of UK higher education institutions (HEIs). Research funders, learned societies, and early decision documents for the upcoming Research Excellence Framework (REF) cycle advocated for greater emphasis on research culture. This echoed ongoing concerns within the sector regarding leaky pipelines, unhealthy competition, a pervasive reproducibility crisis and an exclusionary research environment, all of which posed threats to the sustainability of research excellence. While many HEIs were individually addressing these shared issues, there was limited consensus on definitions, scope, frameworks, or validated measures for enhancing research culture. Recognising a need for collaboration and coordination, the University of Warwick hosted the inaugural International Research Culture Conference (IRCC23) in September 2023. This reflection delves into the contextual backdrop that prompted the organisation of IRCC23, outlines its objectives, discusses the conference proceedings, and explores potential future directions.*

**Keywords:** research culture; collaboration; international research; networking; partnerships; knowledge exchange

## **Introduction**

Early REF (Research Excellence Framework) decisions in June 2023 brought greater attention to research culture, suggesting that the weighting of the 'People, Culture and Environment' element might rise to 25%, up from the 15% allocated to the 'Environment' section in the previous cycle. This strong signal was welcomed by many who had been concerned with the sustainability of research excellence within the UK research and innovation ecosystem, especially around issues of retaining talent and promoting research integrity. However, with these decisions came the need for proactive approaches, including ramping up efforts to ensure institutional preparedness for research culture assessment.

The research culture team at Warwick had previously coordinated an internal 'Celebrating Research Culture' event in September 2022, to showcase 20 grassroots projects funded by Research England's Enhancing Research Culture Fund. From this event, we saw that many barriers to improving research culture were deeply rooted in broader research systems, requiring collaboration beyond individual institutions and countries. With no existing platforms to share research culture knowledge at this scale, and as discussions about research culture were evolving into a distinct research topic, we decided to host the International Research Culture Conference, IRCC23.<sup>1</sup> In this reflection, we look at the contextual backdrop of the conference and how we designed activities to meet the needs of the research community in the UK and beyond.

## **The Imperative to Improve Research Culture**

IRCC23 was created in the context of previous and ongoing discussion among influential UK research stakeholders around research culture.

The Royal Society defines research culture as 'the behaviours, values, expectations, attitudes and norms of our research communities'. Despite years of training and investment, many capable researchers had been opting to leave research or had been compelled to withdraw from exclusionary research environments. Work by the Royal Society examining the so-called 'leaky pipeline' had confirmed that individuals marginalised due to disability, socioeconomic background, gender, and ethnicity faced heightened obstacles in progression and were therefore significantly underrepresented in senior roles (**Royal Society, 2012**).

There had also been debate around the prevalence of a 'Publish or Perish' culture (**Van Dalen & Henkins, 2012**). As highlighted by Retraction Watch, some rising stars in academia had built entire careers by introducing fabricated or manipulated results into high-impact journals, contributing to a growing reproducibility crisis (**House of Commons Science, Innovation**

**and Technology Committee, 2023**). In 2023, a disconcerting record of over 10,000 papers were retracted (**Van Noorden, 2023**). Statistics of this scale brought into question how research excellence was being assessed, and how career progression was awarded. In response to this unhealthy competitive environment, UKRI's CEO, Dame Ottoline Leyser had called for a move away the 'lone genius' model of research towards recognition of diverse contributions (**Financial Times, 2022**).

Another area being championed was researcher wellbeing, which covers the health, satisfaction, and fulfilment experienced by those who conduct research. The Wellcome Trust had been at the forefront of raising awareness of toxic research environments. Only 29% of the 4,000 researchers they surveyed felt secure in pursuing a research career, in part due to fixed-term contracts and job insecurity (**Wellcome Trust, 2020**). Worryingly, nearly two-thirds (61%) had reported witnessing, and 43% had reported experiencing, instances of bullying or harassment.

Colleagues in research management and administration roles working alongside academics were also expressing dissatisfaction, in the context of a perceived 'us vs them' culture, leading the Association of Research Managers and Administrators (ARMA) to call for increased recognition and inclusion of these roles in research (**ARMA, 2020**).

Meanwhile, the Technician Commitment launched by the Gatsby Charitable Foundation and the Science Council in 2017 represented a positive step towards parity of esteem.<sup>ii</sup> This sector-wide initiative aimed to ensure visibility, recognition, career development, and sustainability for technical staff within higher education and research institutions. Through follow-on initiatives including the £5.5M Institute for Technical Skills and Strategy (ITSS) funded by Research England and launched in 2023, technical professional colleagues were now being offered more tailored training and had seen improved opportunities to lead bids and author papers. Institutions such as the University of Liverpool and the University of Warwick were also piloting innovative career pathways for technicians, with comprehensive promotion routes inspired by the existing frameworks available to academic colleagues.

On an international level, research culture initiatives such as DORA, the San Francisco Declaration on Research Assessment (**American Society for Cell Biology, 2012**), Coalition for Advancing Research Assessment (**Sivertsen & Rushforth, 2022**), and the Researcher Mental Health Observatory (**Kismihók et al., 2022**), underscored the critical significance of collaboration across borders.

### **Three Motivations for IRCC23**

Because of this background, and combining various aspects of research culture discourse, IRCC23 was designed with the following three objectives:

#### *Fostering coordination and collaboration*

Culture is a characteristic of a community and given that the research community spans sectors and international borders, meaningful research culture change must extend beyond a narrow focus on individual UK institutions. Looking beyond the UK, research to address the world's most pressing challenges is inherently international. Therefore, it was crucial to involve global partners in the dialogue to ensure we develop a shared language around research culture, including, for example, the development of more equitable partnerships.

In the context of the UK, we saw a need for a purely collaborative platform as a counterbalance to an existing policy and funding landscape that often encourages research culture activities at a single institution level. For example, REF evaluates HEIs (Higher Education Institutions) individually, with significant implications for funding and reputation. An institution-by-institution approach can also be seen in accreditation schemes and concordats (e.g., Athena SWAN, HR Excellence in Research Award). With regards to research culture specific funding, this had been distributed through competitive application processes, at times restricted to a subset of universities (e.g., Institutional Research Culture Funding from the Wellcome Trust; Enhancing Research Culture Fund from Research England).<sup>iii</sup>

Many barriers to better research culture are intertwined and stubbornly embedded in our research systems, requiring concerted action from key stakeholders to remove them. Beyond HEIs, we recognised the need to reach out to other groups working to improve research culture. For example, we invited Dr Nik Ogryzko from UKRI's People and Talent team to outline their plans for the future of research careers. We also invited Prof Kate Sang, lead of the British Academy and UKRI-funded Equality Diversity Inclusion (EDI) Caucus (EDICa) to talk about the challenges of disabled researchers. EDICa had been set up in January 2023 to gather research evidence as to how best to improve EDI in research and innovation systems. Prof Marcus Munafo presented at IRCC23 as a representative of the UK Reproducibility Network, founded in 2019, to share developments on the network's work to improve reproducibility and reliability of research. Dr Ian Hancox, Director of Research Technology and Technical Strategy at Warwick and co-director of the UK Institute for

Technical Skills & Strategy also provided an update on progress against the Technician Commitment across the sector.

#### *Curating evidence-based best practice*

To enable meaningful change, research culture activities must be grounded in evidence. We aimed to create a forum where practitioners and academic researchers who work on research culture could share experiences and receive feedback. Another important related issue is how research culture work is often not documented in a way that is optimal for evaluation or for preserving ideas for future users. Webpages and documents describing research culture work rarely have any permanent identification system and are therefore unlikely to remain discoverable. Hence, we needed a good archival record of what was presented in the conference, which is why we reached out to the journal *Exchanges* to host this article, within a first of its kind ‘Special Issue on Research Culture’.<sup>iv</sup>

#### *Platforming grassroots ideas*

Our understanding of who contributes to research excellence is evolving. For instance, there are calls to improve the inclusion of technical professional colleagues, aligned with the Technician Commitment, and research managers and administrators, in the context of EU projects such as Research Management (RM) Roadmap (**HETFA, 2023**) and Career Acknowledgement for Research (Managers) Delivering for the European Area (CARDEA) (**Spigarelli et al., 2022**). Until recently, research culture discourse had been spearheaded by larger funders and senior research leaders; however, grassroots ideas and engagement are essential in culture change. In designing the sessions for the conference, we sought to ensure research culture discussion incorporated traditionally less powerful voices, including those of postgraduate researchers, early career researchers and research enablers.

### **International Research Culture Conference (IRCC) 2023**

This first International Research Culture Conference took place at the University of Warwick on the 25th of September 2023. It was organised by the National Centre for Research Culture (NCRC), which the University of Warwick launched in July 2023.<sup>v</sup> Following an open call for abstracts, the organising committee selected talks that were grouped into sessions across a broad range of topics, including ‘fostering more inclusive research environments’, ‘empowering PGRs and early career researchers (ECRs)’, ‘establishing equitable research partnerships’, ‘improving recognition of diverse contributions’, ‘measuring research culture’, and ‘promoting research integrity’. It was attended by 150 colleagues in person plus 250 participants online, with attendees from 13 countries represented among the delegates. The participants included academics, research managers,

research technical professionals, postgraduate researchers (PGRs), postdocs and funder representatives (**see Appendix**).

Proceedings of the conference (including this article) were collected in the journal, *Exchanges: The Interdisciplinary Research Journal*, published by the Institute of Advanced Study at the University of Warwick. It is an archival journal, which provides Digital Object Identifiers (DOI) for their articles. As it is a Diamond open access journal, free to publish and free to read for all, this ensures that proceedings articles can be read by a broad range of readers, including future researchers and practitioners.

## **Outcomes & Next Steps**

As was raised in discussion among plenary delegates at the conference, we recognised the need to facilitate discourse between now and the next event, anticipated for 16 September 2024. To plug this gap, we launched the Research Culture Enablers Network (RCEN). In response to changes in the sector forecasting a growing role for research culture, there has been a drive to create or expand research culture enabling teams, encompassing roles such as ‘Heads of Research Culture’ or ‘Research Culture Managers’. RCEN aims to build on this momentum and unite motivated colleagues with a professional stake in research culture to gather critical mass around priority areas. RCEN is rapidly growing, counting over 165 colleagues (as of February 2024) responsible for supporting research culture initiatives at 76 institutions. Working together, RCEN members are encouraged to be mobilised to respond more strategically to upcoming opportunities to shape the future of research culture for the better. RCEN is also curating a list of top research culture priorities to highlight cornerstone issues. Currently most pressing identified challenges for RCEN members include: Research leadership, psychological safety in research, and responsible research culture metrics.

With IRCC23, our inaugural attempt aimed to bring clarity to the intricate and uneven terrain of research culture. The conference succeeded in creating a collegiate environment where in-person delegates could share best practice and develop their ideas. Although encouraged by the robust engagement we encountered, revealing a demand for such initiatives, we are committed to refining aspects, such as our engagement of online participants, for IRCC24, which will be taking place on 16th September 2024.

Our next practical steps involve identifying voices currently missing from the conversation, which includes greater representation of stakeholders beyond UK HEIs, such as independent researchers, funding bodies, learned societies and industry. We will also be looking to increase the visibility and engagement of research partners outside of the UK. To support this, we



have grown our National Centre for Research Culture team to include our Head of Research Culture Partnerships, who will work to strengthen new relationships and incorporate diverse voices from cross-sectoral and international perspectives.

In the spirit of collaboration, we welcome engagement and invite readers to get in touch with the authors to co-create an exciting and inclusive program for IRCC24.

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Although her background is in medical research (Microbiology PhD), Rika has since translated her experience to supporting different disciplines and all stages of the research project cycle. Rika supports institutional research culture priorities at Warwick, including Enhancing Research Culture projects and working groups to tackle key challenges. Rika is also Network Lead of the [Research Culture Enablers Network](#), which unites over colleagues based in research culture teams to work collaboratively and strategically on shared issues. She also promotes research culture opportunities and best practice through the LinkedIn group, [Research Culture Knowledge Exchange](#).



Kita's main area of responsibility as Deputy PVC is research culture; he is Director of the National Centre for Research Culture and Chair of Warwick's Research Culture Forum. Kita is a member of the university's Race Equality Task Force and designed the Warwick [PATHWAY](#) programme to facilitate research careers for black students and researchers. Kita is a Professor of Psychology of Language. He studied engineering at the University of Tokyo and completed his PhD in psychology and linguistics at the University of Chicago. He has since worked in the Netherlands and in the UK, at Bristol, Birmingham and Warwick.



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## Appendix: International Research Culture Conference 2023 (IRCC23) - Programme

### *Keynote Speakers*

Professor Caroline Meyer, University of Warwick: Working together to set the standard for research culture.

Dr Nikolay Ogryzko, UKRI: Supporting people and teams.

Dr Ian Hancox, University of Warwick: The sector progress catalysed by the Technician Commitment.

Professor Kate Sang, Heriot Watt University: Navigating the choppy waters of academia: the experiences of disabled and neurodivergent academics.

*Sessions*

*Towards a more inclusive Research Culture*

Professor Carola Boehm, Staffordshire University: EDI, whiteness and researcher careers.

Amanda Chukwudozie and Chris Sims, University of Nottingham: A decolonising approach to policy impact: lessons for Research Culture.

Dr Katie Nicoll Baines & Dr Sara Shinton, Future Leaders Fellows Development Network: It doesn't just happen - embedding equality, diversity & inclusion into leadership development.

Kulbir Shergill, University of Warwick: INspire programme at Warwick.

*Empowering PGRs and ECRs*

Dr Fiona Fisher, University of Warwick: Developing the next generation through effective postdoctoral training programmes.

Professor Jane Bryan, University of Warwick and Dr Deborah Cunninghame-Graham, Kings College London: Building, maintaining, and repairing relationships between postgraduate researchers (PGRs) and supervisors.

Yiduo Wang, University of Warwick and Ya He, University of Sheffield: Enhance academic progression: A critical reflection on the impact of training opportunities on post-graduate researchers' development.

Dr Frane Vusio, University of Warwick: Should researcher development programmes be involved in mental health literacy of postgraduate researchers' mental health and wellbeing?

*Collaborative Research Culture*

Dr Taochen Zhou, Harry Moriarty, Professor Lynda Pratt, Professor Lucy Donaldson, University of Nottingham: The language surrounding achievement, teams, and individuals within a research community.

Professor Margaret Low, Dr Phil Jemmett, Caroline Cannon, WMG, University of Warwick: STEM Connections.

Dr Craig Carnegie, Naomi Ogunkola, University of Warwick: Developing the University of Warwick's Research Culture: Evaluating a department's approach to work experience programs and enabling staff development to enhance the delivery through internal funding sources.

Professor Jemina Napier, Dr Fiona Armstrong, Catalina Bastidas, Heriot-Watt University: Empowering a global community through co-production of a global research and enterprise culture".

*Inclusive recognition*

Yvonne Budden, Dr Sam Cole and Professor Noortje Marres, University of Warwick: Research Culture and Research Assessment: a workshop on the principles of the Coalition for Advancing Research Assessment (CoARA) agreement.

Dr Sarah Bennett, University of Warwick: Research Culture: A technician's perspective at the University of Warwick.

Stef Thorne, London College of Fashion, University Arts London: An (research) enabler? A person who encourages or enables negative or self-destructive behaviour in another?

*Measuring Research Culture*

Maria Prince, Professor Ann Campbell Ulster University, Digital Science: Data-driven insights for a holistic understanding of the researcher's journey.

Dr Shareefa Fadhel, Dr Gaynor Miller and, Professor Cat Davies, University of Leeds: Identifying metrics for assessing Research Culture.

Professor Candy Rowe, Newcastle University and Professor Karin Wahl-Jorgensen, Cardiff University: How to do a research culture survey.

Dr Hannah Griffin-James, Independent Researcher: Inclusion and quantitative surveys.

*Promoting a Research Culture of Integrity*

Dr Stuart RF King, eLife: Preprints mean peer review can be reimaged as it should always have been.

Dr Aidan P Thompson, University of Warwick: The moral imperative to developing research culture: Advocating for caught, taught and sought approaches.

Dr Christiane Wetzel, Ina Frenzel, Sarah Wendt, BIH QUEST Center for Responsible Research at Universitätsmedizin Berlin, Germany: Transfer of training on responsible research and open science into everyday research practice.

Dr Lesley Uttley, Louise Falzon, Christopher Carroll, Daniel Quintana, Paul Montgomery, Matthew Page, David Moher, University of Sheffield, UK; University of Oslo, Norway; University of Birmingham, UK; Monash University, Australia; University of Ottawa, Canada: Research Culture's role in contributing to research waste: Lessons from systematic reviewlution.

*Institutional Research Culture Initiatives*

Dr Sarah Callaghan, Dr Monica Palmero Fernandez, Kathryn Dally, Jackie Thompson, Dr Tanita Casci, Dr Laura Fortunato, Professor Susanna-Assunta Sansone, University of Oxford: Putting research practice at the heart of research excellence at the University of Oxford.

Dr Nicola Simcock, Helen Gray, Newcastle University: Engaging with our researcher community: putting our money where our mouth is.

Professor Rachel L Cowen, Sarah Williams, Maria Marsh, Di Zhang, Professor Michael Dixon, University of Manchester: Working towards an inclusive research culture through EDI education, engagement and empowerment of researchers.

Professor Kirstie Haywood, Adele Kenny, University of Warwick: Enhancing Warwick Medical School's (WMS) Research Culture through co-production and active community engagement.

*Researcher and Research Enabler Development*

Ruth Norris and Charlotte Stockton-Powdrell, University of Manchester: Enhancing Research Culture through an interdisciplinary team research training and development programme pilot.

Dr Sahar Khodabakhsh, Christin Hoffmann, Sarah Sauchelli Toran, Gogyu Shi, Alexandra Mitchell, School for Policy Studies, Faculty of Social Sciences and Law, University of Bristol: A novel approach to peer-support for academic researchers and enhance research culture.

Sandy Sparks and Dr Ian Hancox, MI TALENT, University of Warwick and University of Nottingham: Leadership development for technicians – prepare, support and develop technical leaders for now and the future.

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**Endnotes**

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<sup>v</sup> University of Warwick. National Centre for Research Culture (NCRC). Available online: <https://warwick.ac.uk/research/ncrc/>.

# Reimagining Peer Review Needs Publishers and Institutions to Collaborate More

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## Abstract

*Collaboration between academic institutions and publishers is essential for advancing ongoing peer review reform. Despite being an important process in scientific publishing, the flaws of the current models of peer review used by most publishers are increasingly recognised, and include inefficiency, inconsistency, bias and a lack of transparency. Fortuitously, numerous journals and related organisations have leveraged the transformative potential of preprints to already initiate positive changes. However, active support from academic institutions, influential in shaping researchers' careers and cultures, is crucial too. This potential collaboration would offer mutual benefits, foster more responsible research assessment, help reimagine peer review, and ultimately promote a healthier research culture.*

**Keywords:** peer review; preprints; research assessment; research culture; reviewed preprints

Peer review is undergoing a much-needed reform; yet there is still far to go before the research community can benefit from its full potential. After attending the International Research Culture Conference in 2023 to discuss this very topic, I was surprised to find myself as one of only a few publishing representatives at the event. Research cultures reflect the values of research communities, and shape how research is both conducted and communicated. While there is a growing trend towards recognising a broader range of outputs, publications continue to hold much significance for many working in academia. This means that publishers still wield substantial influence in this space. Hence, I had expected there to be more publishers present at the conference, ready to glean insights and share initiatives. The absence of other publishers at the conference, however, convinced me that achieving peer review reform will require both research institutions and publishers to collaborate much more than they have up until now.

Peer review, the process whereby experts evaluate and comment on the work of others, has been a cornerstone of scholarly publishing since roughly the middle of last century (**Horbach & Halfman, 2018**). The practice, however, greatly needs overhaul due to many widely acknowledged issues (**Smith, 2010; Heeson & Bright, 2021**). Peer review requires much time and effort. For example, it is estimated that reviewers spent over 100 million hours working on peer reviews in 2020 alone (**Aczel et al., 2021**). However, all too often there is little to show in return. Rejected articles may be submitted to another journal unchanged without readers being made aware of the initial concerns, while publishers rarely reveal the factors influencing the decision to publish a specific article accepted into one of their journals. Furthermore, while peer review aims for an unbiased assessment of scientific merit, bias has been documented in all methods of peer review (**Lee et al., 2013**). This is because, being based on decisions made by individual reviewers and editors, peer review is inherently susceptible to conscious or unconscious biases. Research indicates that these biases can perpetuate a power imbalance that disproportionately affects those already disadvantaged in academia, such as scholars from underrepresented backgrounds and early-career researchers (**Silbiger & Stubler, 2019**).

Because of these issues, conversations across the research ecosystem often reveal a strong desire to reform peer review. This was evident in my discussions with other attendees at the International Research Culture Conference, where many expressed hopes for such a change. A similar sentiment was revealed by eLife's latest Perception Survey. In this survey, 41% of the more than 2,500 respondents listed 'reducing bias in peer review' as something they would 'most like to see more of in publishing'. Additionally, over one-third of respondents most wished to see 'more



transparent reviews' (37%). Conducted online, the 2023 Perception Survey ran for three weeks in May, with the majority of responses coming from researchers active in the life sciences who have either read, published in, or reviewed for the eLife journal.

Fortunately, positive changes are already in motion. Increasing numbers of journals are making peer review more open and accountable by publishing their reviewers' comments alongside the relevant articles (Polka et al., 2018). However, these journals conducting 'transparent review' remain the exception to the rule. Peer review also remains slow (Huisman & Smits, 2017), with new publications sometimes taking months or even years to wind their way through the process, delaying the dissemination of new findings.

This is where preprints are making a difference. A preprint is a complete version of a scholarly manuscript that has been openly shared without undergoing formal peer review or having been published in a traditional journal. Since journal peer review can be slow, posting a preprint to a preprint server lets the author share their work as soon as they think it is ready, allowing them to potentially get instant feedback and more quickly make an impact. Preprint servers have expanded in recent years, especially in the life sciences (Kaiser, 2017), driven by the demand for quicker sharing of information. Notably, works published on preprint servers also fulfil the open-access requirement set by many funders, falling under the category of 'green OA' as they are freely available online (Open Access Network, 2024).

Preprints, however, have their own issues. While peer review is not without its flaws, exposing research findings to scrutiny remains a vital step in the scientific process. Asking peer reviewers to identify any shortcomings in the authors' methods, data and reasoning will always be valuable. Yet posting a preprint does not inherently require this level of scrutiny, and there is also a greater risk for preprints to be used by those wanting to spread misinformation (Sheldon, 2018).

There are fortuitously changes in motion to address these issues too. By effectively decoupling the review and dissemination stages inherent in traditional journal publishing, preprints have presented both the impetus and opportunity to reimagine peer review (King, 2023). Specifically, journals like eLife, along with initiatives such as Review Commons<sup>i</sup> and PReview<sup>ii</sup>, have seized the momentum around preprints and built upon the foundation of transparent review to offer new models of peer review, where the output of the process are 'reviewed preprints' (or 'refereed preprints'). These are versions of a preprint that are accompanied by their reviewers' comments, which have been made publicly accessible independently of journal publication (Eisen et al., 2022; Brainard, 2022).

A reviewed preprint combines the time-saving advantages of posting a preprint with the scrutiny offered by peer review, and swiftly provides readers with a public assessment of the specific strengths and weaknesses of a given piece of scholarly work.

But change takes time, and much work is needed for these newer, more open and efficient, models of peer review to become commonplace. Despite a growing number of discipline-specific or region-specific preprint servers being launched, only a fraction of articles in peer-reviewed journals are initially shared as preprints (**Puebla et al., 2021**). Even fewer of those are shared as reviewed preprints, despite their being online platforms – such as Sciety<sup>iii</sup> – where this activity can now readily take place. It is thus clear that the remaining obstacles to the ongoing reform of peer review are now not technological but cultural (**King, 2023**).

As with many issues related to research culture change, the lack of uptake of new models of publishing and peer review likely stems from a lack of incentives across the academic research environment. The system is not set up to reward researchers who adopt these new models when it comes to decisions related to getting jobs or grants. Instead, many researchers perceive, rightly or wrongly, that they are only rewarded by publishing as many articles as possible within a narrow range of journals (**Binswanger, 2014**), even if doing so perpetuates the current flawed system of peer review. Fortunately, academic institutions are a part of the system that can work to change this.

Academic institutions exert significant sway in shaping researchers' careers and the norms and cultures of their researcher communities. Their increasing acknowledgment of this influence and the need for more positive research cultures – demonstrated by their diverse representation at the conference – signals a positive development. Despite challenges tied to differences in scale, geography and specialism among institutions, it suggests a willingness for different institutions to align their policies and initiatives with existing efforts being developed elsewhere. In this context, there would be many potential benefits if decision-makers at academic institutions looked at what they can do to champion the current reform of peer review as well, including engaging more closely with publishers.

To advance the reform of peer review, it is crucial that more institutions firstly recognise preprints and reviewed preprints as valued research outputs. Researchers, eager to leverage these open and efficient publishing methods, need assurance that their works will be fairly considered in funding and career decisions. And while there are examples of where this is happening (**eLife, 2022; EMBO, 2022**), unfortunately, many researchers often report that is not the case, perhaps due to institutions lagging behind the evolving publishing landscape. In eLife's 2023

Perception Survey, for example, the majority either reported their institutions lacked policies recognising preprints as records of productivity (40%) or were unaware if their institution had such policies (36%). For reviewed preprints, 44% stated their institutions do not equate them to traditionally peer-reviewed articles, while 47% were again unaware if their institutions had such a policy.

Institutions should adopt policies that endorse transparent peer review focused on the merits of the work more generally. This could include transparent review via reviewed preprints, or via reviewers' reports being published alongside traditional journal articles. It might involve institutions simply allowing researchers to include all works have been publicly reviewed within their applications for new roles or promotions, and not only those that have been published within traditional journal models. Alternatively, it could see institutions actively prioritising applications that include transparently reviewed works, liked reviewed preprints, over those reviewed at venues where the peer-review materials are not made available (assuming that those reports attest to the work's quality and rigour). Academic institutions should consider these changes to demonstrate their commitment to move beyond the flawed practice of relying on journal titles or Impact Factors as proxies for research quality; a change that is advocated in the principles of the Declaration on Research Assessment (**DORA, 2013**). Embracing transparent reviews would also allow institutions access to more nuanced assessments that could support better hiring or promotion decisions, while avoiding the redundancy of re-evaluating previously reviewed works in each application process.

In parallel, an increasing number of academic institutions are putting in the work to articulate what it is that they want to value in their research communities, from creativity to collegiality, openness, inclusiveness or rigour (**University of Glasgow, 2024; University of Leicester, 2024; University of Warwick, 2024**). This includes defining criteria for assessing often previously poorly defined elements like 'research excellence' (**University of Sheffield, 2024**). Collaboration between institutions and publishers can bolster these efforts too. If consensus about what is valued emerges among institutions or within specific disciplines, publishers with journals that serve those communities can lend their support. For those values that can be demonstrated through research articles, a society publisher could update its guidance to reviewers such that they ask them to consider and comment on those specific values when writing the assessments of new articles. For instance, reviewers might explicitly be asked to comment on the 'creativity of the author's experimental approach' or the 'rigorousness of their methods'. Then, if those reviews are made public via some form of transparent review, publishers would be providing institutions with ready access to evaluations of their

researchers' work that are focused on the values that those institutions have identified as most important to them.

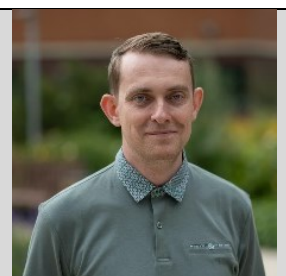
Being more explicit about the qualities that journals want reviewers to assess during peer review would benefit publishers too. For example, it would help make their peer reviews more consistent and reduce the scope for biases to influence decisions, and thus make their journals more appealing to authors. Public peer reviews, either via reviewed preprints or transparent review of traditional journal articles, could then also help publishers to more clearly demonstrate the value that they provide. They would help traditional publishers to remain relevant in a publishing landscape that is moving towards being increasingly open and in which more and more manuscripts are first published as preprints. At a time when research credibility is being questioned (**McKie, 2024**), and concerns around predatory journals continue (**Boukacem-Zeghmouri, 2023**), making peer reviews could also help to actively reassure authors, readers, institutions and funders of the quality of a given journal's peer-review processes.

Although these actions would help publishing in the long run, change will take time. The publishing industry has often faced criticism for being slow to adapt (**Khan et al., 2014**). However, the responses of publishers to changing pressures, such as from funders through open-access initiatives like 'Plan S' (**Liverpool, 2023**), and reactions to global events like COVID-19 (**Wellcome, 2020**), indicate their ability to evolve when suitably incentivised. This suggests that with increased engagement and collaboration between publishers and the wider research community, including academic institutions, meaningful change will be possible.

Researchers at the earliest stages of their careers would also be among those with the most to gain from these changes to the system. Early-career researchers, especially those from underrepresented groups or on fixed-term contracts, face significant disadvantages due to flaws inherent in the current peer review process, including its slowness and bias (**Huber et al. 2022**). Convincing more senior colleagues, who typically hold the positions of power and who have succeeded in this system, about these issues can often be challenging. However, there are positive signs that leaders in influential positions, whether in institutions, funding bodies, or publishing, are acknowledging these problems and showing a willingness to take corrective actions. This includes through their engagement with events such the International Research Culture Conference, which, to me, indicates that early-career researchers should feel empowered to engage more with their academic institutions and the publishers serving their communities, to highlight their appetite for reform in peer review.

In conclusion, reshaping research culture hinges on transforming peer review through collaboration between academic research institutions and publishers, and the researchers of all career stages who engage with them. Institutions recognising the value of preprints, emphasising balanced appraisals, establishing clear policies and actively engaging with publishers are pivotal steps. Concurrently, publishers accepting their role in supporting efforts to improve working cultures in which research is conducted is crucial too. Together these changes would not only support more responsible research assessment but also foster a more positive experience for future generations of researchers, with benefits for research in general and wider society.

Stuart King is the Research Culture Manager at eLife, an open-access journal that reviews preprints in the life sciences and medicine. Based in Cambridge, UK, his role supports eLife's ambitious agenda to reform how research is reviewed and communicated and promote openness, integrity, equity, diversity and inclusion in research and publishing. Since 2019, he has been a Steering Committee member for DORA, championing responsible research assessment internationally.



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**Endnotes**

<sup>i</sup> <https://www.reviewcommons.org/>

<sup>ii</sup> <https://prereview.org/>

<sup>iii</sup> <https://society.org/>



# Reduced to a Number: Exploring the relationship between research culture and metrics

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## Abstract

*In a recent study carried out by library professionals at the University of Waikato, a small university situated in Aotearoa New Zealand, researchers across a range of disciplines were interviewed to better understand their views on researcher assessment, metrics, and research impact. Beyond discussions about the limitations of bibliometrics, many of the participants also drew attention to structural factors that affect their decision making, attitudes, and the way they work. These included satisfying research assessment, ensuring job security and career progression, cultural labour and tensions for Indigenous scholars, and dealings with reviewers and publishers.*

**Keywords:** research culture; research assessment; cultural labour; PBRF; bibliometrics

In a recent study carried out by library professionals at the University of Waikato, a small university situated in Aotearoa New Zealand (New Zealand), researchers across a range of disciplines were interviewed to better understand their views on researcher assessment, metrics, and research impact. The research project employed a case study approach, interviewing a small number of participants from a spectrum of disciplines. One researcher cannot represent an entire field, and as such it is important to acknowledge that the research is exploratory only and the results of this research cannot be generalised. While the interviews were focused on discussions of the limitations of bibliometrics, many of the participants also drew attention to issues of research culture. Participants spoke about some of the structural factors that affect their decision making, attitudes, and the way they work. These included satisfying research assessment regimes, ensuring job security and career progression, cultural labour and tensions for Indigenous scholars, and dealings with reviewers and publishers.

The national research assessment in New Zealand is called the Performance-Based Research Fund (PBRF) and requires all research staff employed at tertiary institutions to submit an individual research portfolio once per 6-year cycle (COVID-19 exceptions) in order to allocate public research funding for the tertiary sector for 'research excellence'. While the individual scores are confidential, it is common for academics to publicise their own results if they are good – after all, doing well on this exercise is evidence of successful engagement with the neoliberal agenda. In a comparison of reflections on the Research Excellence Framework (REF) in the United Kingdom and PBRF, Chatterjee et al. (2020) found since the launch of PBRF all participants in New Zealand reported an increase of 'self-interestedness in academia' (Ibid: 1241). Chatterjee et al. (2020) contend that assessing research excellence at an individual level in the PBRF rather than the group or institution level assessment of the REF (and many other national research assessment activities worldwide) may be encouraging individualism, at the expense of research culture both within and between universities. Of course, the existence of research assessment activities can have both positive and negative impacts. On the one hand research assessment can be a motivating factor for academic staff, giving validation of membership in the academy (Chatterjee et al., 2020; Universities New Zealand, 2019); one of our participants commented:

*I told myself I was only going to be successful on my level as a researcher with career prospects if I got a B. [...] I'm so damn proud of that B. And one of the things that drives me is holding on to that B. (Study Participant)*

However, we cannot ignore the harm that evaluation and research excellence assessment activities can also cause, both for individuals and for our research culture (Buckle & Creedy, 2022; Manasseh, 2020). For academics who performed poorly in PBRF, a low score can be career limiting. One participant mentioned 'older colleagues who end up putting themselves in the hospital because they don't want to lose their job because they didn't get a high enough PBRF grade.' Simpson et al. (2023) outline the history of Audit Culture in New Zealand and argue that the PBRF has entrenched Audit Culture and encourages the casualisation of the academic workforce.

A number of our participants made comments regarding the harmful impacts of a research culture that encourages academic staff to overwork to the detriment of staff wellbeing: 'some of our colleagues actually work themselves into the ground' and others seemed to be pushing back against this expectation with comments like 'I don't work myself to the point of exhaustion.' Another participant stated 'let's put it bluntly, I can't be bothered. I've got too many things to do in my life and this is not going to be the one that I try to push out there.' Overwork is not only made up of visible work but includes other things such as cultural labour and load, a particular issue for Indigenous researchers.

Indigenous scholars often contend with the tension of producing work that is relevant to both their scholarly and home communities, and satisfying institutional expectations (Chivers et al., 2023). Indigenous participants in our study recognised this tension in publication and peer-review processes, where they felt pressured to submit to high-ranking, global journals in order to appease New Zealand researcher-assessment criteria. This meant, for example, they often dealt with journal reviewers who did not understand the nuance of Māori/Indigenous-focused research and lacked the expertise to appropriately respond to their work. At times, this led to them feeling that they had to dilute their work in such a way that made it more digestible to a wider audience. The choice of which types of journals to submit to and publish in can have a direct impact on career progression and by extension, job security. When these publishers have the power to shape scholarly conversations in such a way that detracts from Indigenous scholars' contribution to their own disciplines and communities, institutional publishing expectations and standards need to be reevaluated. In discussing the ways in which colonialism and patriarchy function in the academy and how they can influence scholarly discussions, Te Punga Somerville (2021) also identifies 'funding bodies, appointment committees, reviewers' comments, editorial processes, conference programs, and publishing houses and Royal Societies' (Ibid: 280), and points out that the impact of these social forces is 'evident in the whiteness (and other forms of narrowness) in the academy' (Ibid). While

the scope of our own research project did not extend to a full study of the embeddedness of colonialism and patriarchy in our institutions, we must acknowledge that metrics culture and researcher assessment frameworks often exist in these kinds of systems of power that favour particular kinds of voices, bodies, and perspectives—typically those of white men (**Ahmed, 2013, 2017; Brower & James, 2023; Te Punga Somerville, 2021**). If citational practices privilege whiteness, so will citation metrics (**Chivers et al., 2023**).

Ultimately, this misalignment of priorities was reflected in comments from our Indigenous participants who also spoke of the unrecognised cultural labour that goes into their jobs, often in the form of mentoring and providing opportunities for younger Indigenous scholars, in addition to many other tasks. The tension is perhaps best summed up in the following comment from one of our Indigenous participants:

*We're not writing for scope and scale, we're writing for quality of a knowledge system, we're writing because we want to bring that [Indigenous] voice forward. Now, if I was going to be really tactical, I would abandon all of that and just write for scale and write to have the broadest citation marketplace appeal—so as many consumers of my work would be interested in citing it. So, to me, that's a fundamental tension in the way that citations are used to grade a scholar's quality of work.*

These issues identified by the Indigenous participants in our study all connect to a broader research culture that is obsessed with citationality and bibliometrics. Scholars recognised this in the tension between publishing expectations and scholarly and community responsibilities. The focus that researcher assessment systems have on journal rankings and citations often put Indigenous scholars (and other scholars of colour) at a disadvantage, given the inequities in academia and the tendency of disciplines to reproduce themselves as white, male structures through the practice of citation (**Ahmed, 2013, 2017; Burgess, Cormack, & Reid, 2021**).

Kidman (**2020**) identifies neoliberalism as a driving force in our universities that shapes how intellectual labour is configured through a “regime of audit, rankings and measurement” (**ibid: 248**). The twin demands for periodic, quantifiable outputs and for the pursuit of external research funding (regardless of the expenses related to their research) often results in academics spending their time on these peripheral efforts rather than the core components of their jobs. As is so often the case, the burdens of these expectations fall more heavily on Indigenous academics and early career researchers (**Kidman, 2020**). Success on these metrics is closely linked to job security, advancement and promotion. It should be noted that at time of writing, no New Zealand universities have committed to

initiatives such as the San Francisco Declaration on Research Assessment or the Agreement on Reforming Research Assessment.

In this essay we have reflected on the centrality of citations and other metrics in our research culture (mostly as a result of our researcher assessment systems) and the impact on scholars across a range of disciplines. We have also reflected on educational institutions' need to reckon with their deeply rooted colonial pasts and presents to understand how the biased structures in which researchers work continuously reproduce themselves through the practices of citation and the measures and frameworks used to assess research (Ahmed, 2013; Burgess, Cormack, & Reid, 2021). Addressing issues of neoliberalism, racism, and sexism is essential if there is to be a shift in research culture, on both a local and global level. It is the authors' hope that we can help to develop and nurture the research culture at our institution and across our small country. As library staff we have the ability to influence research culture both through leadership at an institutional level, and by supporting and guiding researchers at an individual level. Our research concluded that our academics care deeply about the impact that they wish to make on the world, but the research culture that they exist within needs to nurture and support researchers so that they can focus on what really matters.

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[The Open Research Team](#) at the University of Waikato Library started working on this research project soon after our formation in 2022. With diverse backgrounds and skill sets, we found that the project helped form us into a cohesive team. This enabled us to develop our expertise in open research and gain a better understanding of the existing research culture at the university.

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# Developing a Research Culture with Trainee Teachers on International Initial Teacher Training Programmes

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## Abstract

*Postgraduate initial teacher training from the UK perspective is a fast-paced 36-week full time programme. In parallel with assessed teaching and subject studies, trainees carry out classroom-based research. To do this, they draw on approaches to evidence-informed teaching that include taking the best available evidence from research and practical experience to answer context-specific research questions. This paper looks at the case of trainees who undertake their PGCE programme internationally i.e., they remain based in their international schools for the practical elements but engage in the wider programme via distance learning. One of the greatest regrets of university staff working with these trainees was that the research knowledge gained was contained only within the assessment system and that the trainees would leave, taking this wealth of knowledge with them. The fear was that these emerging practitioner researchers would see their research work as being completed solely for the purpose of certification, without recognising themselves as beginning a career-long process of reflective research in their schools.*

*From this, the Sunderland Reflective Action in Education project (SunRAE) was developed in response to the challenge of building a community of research-informed practice when working remotely and a/synchronously across different international time zones. It is a student research conference, journal and podcast initiative integrated into the PGCE (Distance Learning) programmes. Linking this initiative to the wider research of the contribution of initial teacher education to the professional learning of teachers in schools, this critical reflection paper connects with the wider debates around developing research culture and makes links between the importance of both for creating better school-based practitioner researchers. The paper reflects that the same themes of widening participation, raising awareness, and reducing silo working that*



*are important for all researcher development are relevant for school-based teacher researchers.*

**Keywords:** research culture; practitioner research; trainee teachers; international initial teacher training; distance learning

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## **Research Culture for Educators**

The Research Excellence Framework (REF) exercise includes an assessment of research 'people, culture and environment'. This means that increased attention is placed on an institution's development of itself as fertile ground from which new knowledge can be nurtured from ideas through to outputs. Additional significance will therefore be placed on the conditions and processes experienced by the people in academia. It seems in everyone's best interests that research culture is strong, and that it includes as many people as possible.

However, many academics are employed in tertiary education on the back of professional practice and wider expertise so that they can contribute to the teaching of future cohorts of professionals and practitioners. Their value to their institutions therefore is arguably as much, if not more, about teaching than research. Teaching-only, or teaching-heavy contracts further exacerbate the issue and may limit research opportunities, as will the perceived 'research intensity' of the institution. This can create a tension between the different aspects of practitioner educators' roles, one which seems at odds with the fundamental nature of generating new knowledge to inform teaching and so inspire the next generation. Corner (2023) has alluded to many people feeling undervalued or excluded within the research system and the need to look at research excellence in a more holistic and rounded way. In the same way that pedagogic research and the scholarship of teaching and learning (SOTL) has suffered from what might be termed 'Cinderella status' (Cotton et al., 2018 citing Jenkins, 2002), its cousin, the practitioner research activity of those involved in external practice, can also benefit from recognition its purpose and contribution to research culture.

Teacher educators represent one such example of undervalued practitioner researchers. They are recruited into HE primarily because of their qualifications and experience as schoolteachers, in order to pass that practical knowledge on to trainee teachers. However, a key expectation of the role is to ensure that new entrants to the profession are exposed to educational theory and research in order to understand pedagogy and practice. This is encapsulated in the UK Department for Education's Initial Teacher Training and Early Career Framework (ITTECF) (DfE, 2024) where 'learn that' statements are coupled with an evidence-informed 'learn how

to' approach to reflective practice, underpinned by a government-mandated reading list structured around the profession's core concepts. This is part of research-informed teacher development (**Hidson, 2023**). Historically, research literacy was not an explicit criterion in attaining qualified teacher status, despite educational research and theory underpinning initial teacher training. The tide has now shifted, and the expectation is that everyone involved in training teachers is research-literate.

Teacher training for UK postgraduates is usually experienced as a fast-paced full-time programme over one academic year, often as little as 36 weeks. Trainees not only learn to teach in schools, but also to apply theory to practice during this relatively short time. In parallel with assessed teaching and subject studies, they carry out school-based research in their placement classrooms. To do this, they draw on approaches to evidence-informed teaching that include taking the best available evidence from research and practical experience (**Scutt, 2018**) to answer context-specific research questions. These programmes are the domain of professional teacher educators, who are part of a symbiotic relationship between schools and tertiary institutions. Teacher educators are charged with mobilising school-based research: research that is close to practice. They are also likely to conduct their own research in these settings.

#### *'Under the radar' research*

The Rapid Evidence Assessment (REA) undertaken for the British Educational Research Association (BERA) Close-to-Practice (CtP) report of 2018 highlighted an absence of high-quality studies addressing the research of teacher educators (**Wyse et al., 2021**). Despite these academics initiating, supervising, and assessing school-based research assignments on undergraduate, postgraduate taught and postgraduate research courses, this uniquely positioned group of practitioner researchers does not typically produce CtP outputs that are recognised in terms of national or international reach and significance: their innovations are 'below the radar' (**Perry et al., 2017: 28**). Their significance within an institution's research culture is therefore arguably also below the radar.

This raises a question about what research culture looks like for different kinds of academics. It also challenges teacher educators to consider the extent to which they might be considered as not 'practising what they preach', when they aim to develop teachers who can carry their emerging research dispositions with them and contribute to the research culture in the schools that employ them. What, therefore, might research culture look like for teacher educators and trainee teachers during initial teacher training?

*Research culture as an educational community of practice*

Although developing research culture for all trainee teachers is arguably important overall, this paper presents the even more critical case of trainees who undertake their initial teacher training programme internationally i.e., they are geographically based in their English Medium of Instruction (EMI) schools (**Richards & Pun, 2022**) around the world for the practical teaching elements of their programmes but engage in the substantive study and assessment processes via distance learning. In this case, a sense of community and culture needs to flourish without the physical co-location of the staff and students.

One of the greatest regrets of university staff working with these trainees historically was that the highly contextual applied research knowledge gained was contained only within the institution's assessment system and that the trainees would graduate the course, and by definition of being an international learner, leave taking this wealth of knowledge away with them. The concern was that these emerging practitioner researchers might see their research work as being completed solely for the purpose of certification, without recognising themselves as beginning a career-long process of reflective research generation in their schools.

**The Sunderland Reflective Action in Education (SunRAE) Initiative**

In seeking to attract recognition of initiatives that contribute to developing research culture, this paper reports on the Sunderland Reflective Action in Education (SunRAE) initiative, which was developed in response to the challenge of building a community of research-informed practice when working remotely and a/synchronously with PGCE trainees across different international time zones. At the simplest level it is an online annual student research conference, e-journal and podcast integrated into the PGCE Education (Distance Learning) programmes at the University of Sunderland. However, SunRAE is now part of the established discourse of the programme, referred to by tutors, programme and module leaders, and built into the programme calendar. Trainees are encouraged to share their work in any of the ways that are comfortable for them, or simply to attend or catch up asynchronously. Having identified that trainees may be shy to do so, some of the programme assessment formats have been amended to strengthen online presentation and communication skills to pave the way for increased future participation:

- Two annual conferences have been held, with presentations archived and available from the SunRAE site. The third annual conference is set for June 2024.

- The SunRAE podcast series currently has 24 episodes published, with an average of 139 plays each.<sup>i</sup>
- The SunRAE open-access journal (ISSN 2753-4200) has two annual volumes of three issues each (conference proceedings, case studies, action research) so far.<sup>ii</sup>
- As of 01/03/24, lifetime statistics for article access were: 4,932, with a monthly mean access rate around 173, busiest at assignment times. 21 articles (3 conference proceedings and 18 articles based on student assignment submissions, with a further 9 articles under review.

The digital poster (see **Figure 1**) submitted to the Warwick International Research Culture Conference (IRCC) 2023 highlights the aims of the SunRAE initiative.

Figure 1: SunRAE Poster from the IRCC '23 Conference.

**Recognising the impact of teacher educators on developing research culture with trainee teachers: the Sunderland Reflective Action in Education project (SunRAE)**  
 Elizabeth Hidson  
 International Initial Teacher Training Team | Faculty of Education and Society | University of Sunderland, UK

**University of Sunderland**  
 www.sunderland.ac.uk

**Background and context**  
**International teacher education via distance learning**  
 This project was developed in response to the challenge of building a community of research-informed practice when working remotely and a/synchronously with PGCE trainees across different international time zones. It can best be imagined as a student research conference, journal and podcast integrated into the PGCE (DL) at the University of Sunderland. ↓

**What were (are) our aims?**

- 1. RESEARCH CULTURE**  
 Schools' partnership links with university ITT can support their first steps into becoming a research-active school. We wanted to foster a reciprocal research culture, building on our team motto of "distance not distant".
- 2. DISSEMINATION**  
 We wanted to create a platform to showcase effective practice internationally. With 600+ trainees per year there is real potential for knowledge exchange.
- 3. PEER-LEARNING**  
 Students are hungry for real-world examples of educational research that has an impact in schools and regions like theirs. By promoting student research through the SUNRAE project, we wanted to help our students to learn from their more knowledgeable peers in previous cohorts.
- 4. STUDENT ENGAGEMENT:**  
 Student engagement has traditionally been challenging for our off-campus students. We wanted to harness the momentum provided by hybrid learning to dissolve the barriers to student engagement. →

**UNIVERSITY OF SUNDERLAND**  
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CONFERENCE JOURNAL PODCAST

OUR PARTNERSHIPS AROUND THE WORLD

**The challenge of 'under the radar' teacher educator innovations**  
 The Rapid Evidence Assessment (REA) undertaken for the BERA Close-to-Practice (CTP) report of 2018 highlighted an absence of high-quality studies that 'addressed the research of academics with responsibilities for initial teacher education (ITE)' (Wyse et al, 2021, p. 1480). Put simply, no relevant studies were found that reported on CTP research done by teacher educators. Despite these academics being in a symbiotic relationship with schools, and despite them initiating, supervising, and assessing school-based research assignments on undergraduate, postgraduate taught and postgraduate research courses, this uniquely positioned group of practitioner researchers does not typically produce CTP outputs that are recognised in terms of national or international reach and significance: their innovations are 'below the radar' (Perry et al. 2017, p. 28). In seeking to attract recognition of initiatives that contribute to developing research culture, this poster showcases the SunRAE project. The project won a Vice-Chancellor's Teaching Award 2021/22 and the funding was used to set up an open-access journal platform, university-hosted WordPress website, and develop a podcast series. →

**SunRAE progress so far**

- The project began in the 21/22 academic year.
- We have now run two annual online conferences, in June 2021 and June 2022, inviting guest speakers, colleagues and students to present and share their learning; planning for the June 2023 conference is underway.
- The first volume of the journal was published at the end of 2022; the second is in production.
- We worked with staff and students on the MA in Radio, Audio and Podcasting and the Sunderland Creatives Agency to develop the podcast series and edit the episodes, strengthening cross-faculty collaboration.
- 24 episodes of the podcast have now been published, with further episodes in production.
- Our close-to-practice, participatory and practitioner research culture continues to develop. ↓

**Further aims and developments**

- 1 FULL PURPOSEFUL INTEGRATION**  
 - use our innovation to its maximum effect
- 2 SUPPORT STAFF ACADEMIC DEVELOPMENT**  
 - enhance staff and student research culture
- 3 SHARE OUR LEARNING JOURNEY**  
 - get out from under the radar! ↓

**Contact details**  
 @DrHidson  
 @PGCEIDL

**References and links**  
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SPARK, Creative Agency, VCTFA, lifechanging, University of Sunderland logos.

**SunRAE's Contribution to Research Culture**

Firstly, SunRAE recognises that widening participation is key to research culture. Schools' partnership links with university-led initial teacher training have the potential to develop an extended community of practice. Research has shown that less experienced teachers showed higher levels

of research engagement than their more experienced colleagues, potentially linked to the stronger focus on research use during initial teacher training in recent years (**Walker et al., 2019**). Involvement with research and knowledge exchange for trainee teachers and for in-service postgraduate researchers means framing schools as environments where close-to-practice research takes place, and where discussions can be had about research questions, research methods, data collection and analysis. Trainees see how the concept of practitioner research is valued, and that staff do 'practice what they preach' in terms of acknowledging and promoting the work of early career teacher researchers. Trainees develop a greater appreciation for the potential of applied educational research to influence practice.

Secondly, SunRAE recognises that limiting recognition of impact solely to the classroom or to an assignment limits dissemination opportunities, and that a research culture necessitates knowledge exchange. The discourse around sharing outcomes through podcast interviews, through conference presentations and through submitting work to the journal is a process of raising awareness of practitioner research in schools. Equally important is the idea of encouraging trainees to see the organic nature of practitioner research so that their skills are maintained and extended in practice. We know that a safe but challenging community is vital to a teacher's professional identity (**Salter & Tett, 2022**). Trainees will be able to recognise and acknowledge the depth and breadth of practice in international settings and build on what we know works in these distinctive contexts. While evidence from organisations such as the UK Education Endowment Foundation (EEF)<sup>iii</sup> and The US What Works Clearinghouse (WWC)<sup>iv</sup> is embraced, no similar platform exists that is devoted to research in the international school sector. The trainees are empowered by the small spotlight on internationally-focused but home-grown outputs giving credibility to their applied research in their contexts.

Thirdly, by encouraging peer learning and student engagement in this way, SunRAE aimed to tackle the concept of silo working, showing trainee teachers that identifying others with shared interests can stimulate professional learning and ideas to replicate or reproduce in their own settings. Trainees have the opportunity to develop their personal learning network, speak knowledgeably and 'raise the quality of debate within a school' (**Cain et al., 2019: 1080**) about the kind of research being done that relates to their professional age, stage, subject, region and country. They will develop their appreciation of transnational education practices and be able to contribute to knowledge exchange in their own schools and regions.

And what of the teacher educators, and their research culture? Partly, the answer lies in developing the extended concept of research culture: that they are part of this ecosystem. Through participation, staff have the opportunity to embrace and develop their identities as practitioner researchers, irrespective of their own formal research experience or activity.

Perhaps more importantly, by critically reflecting on research culture and taking the opportunity to push back against the idea of ‘flying under the radar’ we can argue why standard metrics alone cannot quantify the reach and significance of research culture.

Arguably, by putting teacher educators’ initiatives ‘on the radar’ through modes of dissemination such as this, new lines of education research can be opened, allowing for new questions to be asked about the co-construction of school-based research with a view to increasing the number of high-quality studies by practitioner researchers.

### **Concluding Comments**

The critical reflection presented here is that teacher educators’ responsibilities for developing evidence-informed new teachers means that the significance of research culture requires a broader scope than simply as a pipeline for academics’ own research and outputs. This group of practitioner researchers, like many others in academia, for example in the fields of health education or social work, have a responsibility to the profession to extend research culture out from academia into practice if they are to fulfil their responsibilities and contribute to the wider professional community of practice.

The same themes of widening participation, raising awareness, and reducing silo working that are important for all researcher development are relevant for practitioner researchers. Examples of innovations such as the SunRAE initiative discussed here should be factored into the wider debates around developing research culture in order to appreciate its reach and significance as part of a community of practice. In the case of teacher educators, this is part and parcel of creating better school-based practitioner researchers.

Hopefully, the spirit of Corner’s (2023) call to ‘recognise all the outputs of research, not just the publications and documents but also the impacts, research system innovations and, importantly, the skilled people who are at the heart of a thriving research system’ will pave the way for a more nuanced understanding of the nature of teaching and research for practitioner researchers in time for the next REF.

Dr Elizabeth Hidson is a Research and Knowledge Exchange Fellow at The University of Sunderland. She is founder of The InterAction unit, a research lab dedicated to impactful research with schools and teachers. As a senior lecturer in International Initial Teacher Training, Elizabeth works with schools and teachers in over 60 countries.



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**Endnotes**

<sup>i</sup> The SunRae podcast can be accessed at: <https://wp.sunderland.ac.uk/sunrae/podcast/>.

<sup>ii</sup> The journal can be found at: <https://ojs.sunderland.ac.uk/index.php/sunrae/>.

<sup>iii</sup> See: <https://educationendowmentfoundation.org.uk/>.

<sup>iv</sup> See: <https://ies.ed.gov/ncee/wwc/>.



# Key Features of a Positive Research Culture: A qualitative analysis of award nominations

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## Abstract

*The Research Culture Awards were introduced as a way of celebrating people and groups who positively contribute towards enhancing the research environment at the University of Stirling. Colleagues can be nominated anonymously across multiple categories (including leadership, collaboration, mentoring), with nominees receiving their full nomination feedback: both this aspect, and the celebratory awards ceremony, seek to recognise the often-hidden contributions and efforts and create a shared understanding of what good research culture looks like for Stirling. First introduced in 2020, the awards have been held annually and have grown in popularity year on year. Exploring these nominations has allowed for an analysis of the key features of a positive research culture from a person-centric perspective, as felt at local level. The analysis was carried out using a manual frequency analysis of related words and phrases. The overarching results showed that teamwork/collegiality; sharing expertise; good role modelling and good listening skills were the attributes which were most appreciated in colleagues.*

**Keywords:** research environment; recognition; soft skills; hidden contributions, research culture at local level

## Introduction

The Royal Society definition says that:

*Research culture encompasses the behaviours, values, expectations, attitudes and norms of our research communities. It influences researchers' career paths and determines the way that research is conducted and communicated. (Royal Society, 2023)*

It therefore encompasses a broad range of areas and signifies that supporting a healthy and positive research culture comes from having both the right policies, processes, and infrastructure in place, as well as demonstrating leadership, good role modelling and clarity of expectations. These elements together enable engagement and good practice at an individual level.

Research culture encompasses research integrity and importantly the environment in which people work- which can lead to good/positive or poor outcomes. The Research Integrity landscape study (**Metcalfe et al., 2020**) showed that personal integrity, local culture, and good management are key to research integrity, and bullying and harassment has the single biggest negative influence on integrity. That study showed that the top five incentives with the strongest positive perceived impact on integrity are: data sharing policies and requirements; open access publishing; interdisciplinary research; professional development and training opportunities, and research leadership and management. The top five factors with the strongest negative perceived impact are: incidents of bullying and harassment; use of journal impact factors, h-index and other metrics; league tables of institutions; institutional workload models, and how researchers are assessed for promotion during their careers. Many of these incentives depend on processes which can vary from institution to institution or, in some cases within institutions. However, some of these influencing factors are more person centred and for many people the research culture they experience is about local interactions and can be hugely influenced by relationships, behaviour and expectations of their colleagues and line managers.

The Shift Insight (**2024**) report has recently mapped research culture initiatives from across the sector and defined a research culture framework focussed around four sections: How research is managed and undertaken; How research ensures value; How people are supported and How individuals engage with each other. Under these sections 13 elements are identified and under those a series of behaviours.

This behavioural aspect of research culture is essential for the productivity, motivation and long-term success of researchers but is difficult to define and measure. One of the things we have been focussing on in the

University of Stirling is developing a community of practice where we share good practice between researchers and aim to build that supportive community to develop a bottom-up approach to research culture. This happens alongside the policy and processes work, but this paper will focus on what we have learned about how individuals identify and experience positive cultures. The results being presented here therefore focus on the 'How individuals engage with each other' section of the Shift Insight report.

### **Research Culture Awards**

The Awards were first introduced in Stirling in May 2020 with the intention of recognising and valuing those activities and individuals across the institution that support a healthy research culture (**Concordat, 2022**). To recognise a range of roles and career stages nominations be made across six categories: Best activity which enhances Research Culture, Best Research Leadership, Best support from Mentor, Best Collaborator, Best Early Career Researcher and Best support from Professional Services. In the intervening years we have changed the wording from 'best' to 'outstanding' and have added categories for Activity which promotes EDI (2021), and Activity to support Impact (2024). We will also change the Professional Services category wording to Outstanding collaboration 'with' Professional services this year.

The anonymous nomination process typically opens in March with nominators providing details of the name of the person or activity that they are nominating and a short description of how the nominee or activity contributes to a positive environment and has impacted on them and those around them. These nominations usually close in April and key to the process is that all nominees receive their nomination feedback specifying the categories and the wording of the nominations. Importantly, this means that everyone who is nominated is effectively told what they are doing that is valued and why. We then hold a Research Culture awards ceremony as part of our annual Festival of Research in May to celebrate those who have been nominated and those have taken the time to make a nomination. This increases the visibility of efforts and the often hidden contributions and helps to create a collective understanding of what we value at Stirling.

As part of the award ceremony, we also share quotes from nominations and highlight some of the common themes emerging from each category to help encourage reflection on what is considered good culture and how this may be adopted or replicated elsewhere. All nominees receive a certificate and an e-badge which says they have been nominated to add to their email signature.

This qualitative analysis allows us to understand what the key features are that people recognise as fostering a good local research culture.

## **Method**

The method used was to manually identify similar wording, phrasing, and concepts (e.g. meaning) within each category of nominations for each year. These related phrases were then grouped into themes to find the most frequent. After identifying the most frequent themes within each category, a further review was conducted to establish commonality across categories and across years to identify overarching themes. The criterion used to establish the five overarching features of good research culture was that each theme had to be present across multiple nomination categories (at least half). Once we had the results for each year we looked to see if these changed over time or were consistent.

## **Results**

The overarching results that come from our analysis of over 800 nominations over the 4 iterations of the Awards identify the following five features of a good research culture.

- **Teamwork/Collegiality:** activities and actions that supported collaboration and helped develop teams and communities are valued. Interpersonal skills: Kindness, good humour and the ability to make time to see people (despite busy diaries) came up across several categories so the human/ empathetic/ social aspects of our interactions are really important to people.
- **Expertise:** sharing experience, knowledge, insights and networks and being able to see the bigger picture
- **Good listening skills:** valuing the person and their skills, supporting them in their development. Both formal and informal mentoring was important across all categories and many nominated in the ECR category were also recognised for their mentoring skills. The ability to listen and give space was prized among mentors.
- **Role modelling:** good role models emerged from across career stages, highlighting traits such as leadership, tact, adaptivity and inspirational.

These general results are useful, but the academic environment has undergone significant changes over the last few years, particularly around the impact that covid has had on interactions between staff. We can look at more current perspectives and, in more detail, if we consider the nominations for individual categories in the 2023 nominations.

We focus on four categories which represent different career stages and interaction types (**Table 1**):

*Table 1: Themes Emerging from Nominations by Career Stage/Interaction Type*

<p style="text-align: center;"><i>Themes Emerging from Leadership Nominations</i></p> <ul style="list-style-type: none"> <li>• Creates trust and safety</li> <li>• Values the person and their skills, supporting them in their development</li> <li>• Generous with their time</li> <li>• Inclusive</li> <li>• Offers support when needed and steps back when not fair and addresses issues as they arise</li> <li>• Provides clear guidance</li> </ul>
<p style="text-align: center;"><i>Themes Emerging from Collaborator Nominations</i></p> <ul style="list-style-type: none"> <li>• Generous with ideas, knowledge and contributions</li> <li>• Appetite to learn from others</li> <li>• Respectful of others</li> <li>• Values team members</li> <li>• Reliable</li> <li>• Collegiality</li> </ul>
<p style="text-align: center;"><i>Themes Emerging from Mentor Nominations</i></p> <ul style="list-style-type: none"> <li>• Accessible</li> <li>• Inspirational through words and action</li> <li>• Shares, guides and supports</li> </ul>
<p style="text-align: center;"><i>Themes Emerging from ECR nominations</i></p> <ul style="list-style-type: none"> <li>• Excellent at making connections</li> <li>• Embraces learning</li> <li>• Adaptable</li> <li>• Collegial style of working</li> <li>• Supportive of more junior colleagues</li> <li>• Shares expertise</li> </ul>

Undoubtedly there is a commonality of features across categories namely: generosity in terms of time and knowledge, inclusivity, collegiality and encouraging a sense of value and belonging. The awards indicate that features characterising a positive research culture have also remained constant over time, with only a slight shift seen, not surprisingly, during the pandemic where features focused on connectedness and pastoral care in 2021 & 2022 awards' nominations (regular meetings, informal check-ins, quiz nights and cake!)

Having said that, one interesting thing to note is that there is a difference in language between the different categories. For example, good leaders are seen to provide the right environment through being fair and inclusive, valuing people - but knowing when to step in and when not. On the other hand, ECRs both embrace learning and share expertise, as do collaborators so those relationships are seen as more two-way interactions.

## Reflection

The Research culture awards nominations have allowed us to shine a light on some of the key features that are appreciated in colleagues and line managers. We are however cognisant that some behaviours can be very time consuming and/or require an investment in professional development to build self-awareness, emotional intelligence and enhance communication/relationship skills. Ensuring people have the appetite and capacity for this can be challenging.

We also recognise that there are issues with the awards process, we quickly realised that having 'winners' would immediately be counterproductive, so we namecheck everyone who has been nominated and identify a group of 'Highly commended' nominees (those who have been nominated multiple times and/or across multiple categories). Other considerations include i) the potential for competition in an area where collaboration is essential; ii) nominations are only as good as the form of words chosen by the nominator and the quality of the nomination is not necessarily proportional to the quality of the nominee and as such can be difficult to assess and compare: iii) some may feel left out, discouraged and/or demotivated if they are not nominated despite doing a lot of effort and good work in these areas purely because the people who should recognise them do not take part in the nominating process.

The awards have evolved over time with more nominators and nominees each year as more colleagues engage with the number of nominations growing from 125 (89 individuals) in the first round to over 280 (173 individuals) last year (from a total research active staff population of around 580). We assume that this increase in participation signifies that colleagues see value in this collective celebration and explicit naming of standards. We have also found that the same people are often nominated in more than one category year on year. To recognise a more diverse range of people and to ensure the same people are not highly commended each year, we introduced a 'Hall of fame' in the latest awards to continue to value our core role models while leaving space for the recognition of a wider pool of efforts and contributions.

Building on the awards, we have identified research culture champions to support our community of practice. This network is made up mostly of research culture nominees who are frequently nominated in the awards but also individuals who are known to have done good work in a particular area e.g. PGR support. Champions are chosen from all five faculties and different career stages. Here the word champion plays two roles, firstly we want them to 'champion' research culture within their own teams and to share good practice with colleagues through our monthly Research Culture Conversations. They are also good role models and so champions in that

sense- although we also need to avoid the idea that some people are better than others at research culture. The Research Culture Conversations are meetings that both researchers and enablers of research are invited to and the theme for discussion is shared in advance, for insights and input via a dedicated MS Teams channel. The Conversations usually comprise a brief scene setting talk which is recorded and shared afterwards, followed by an unrecorded open conversation. Research Culture Conversations have included sessions on:

- What does a healthy research culture look like?
- What does a successful researcher look like?
- What does good leadership look like?
- What does a supportive environment look like?
- What does an inclusive environment look like?

These conversations and open communication help shape our institutional focus on areas where we can further enhance research culture; we have been working to improve research support, the recognition of research efforts and time for research and professional development. The results of these conversations have fed into our new University Research and Innovation strategy and into our Concordat for Researcher Development 2023-2026 action plan. Whilst our Culture, Employment and Development of Academic Researchers Survey (**CEDARS**) results show some clear areas for improvement, we were also delighted that our 2023 results showed that 86% of respondents were either active or interested research culture so we need to make sure we harness that energy and enthusiasm. However, this is 86% of the 30% of research active staff who responded to the CEDARs survey, and it is likely that those who are engaged in research culture are also the ones more likely to fill in the CEDARs survey. So, although this gives a minimum number involved in research culture, we still have work to do to increase engagement with our community of practice.

In the long run we would like to be in a position where these awards are no longer needed because the types of behaviour which support a healthy research culture are included explicitly in the promotions process and we are more open in letting colleagues know they are valued on a day-to-day basis.

## Conclusion

Research culture is obviously broader and more complex than the ideas highlighted in these nominations but being able to deliver on some of these aspects of culture on a local level will certainly enhance research culture and work alongside policy and procedures.

As our research culture work has evolved, we have been developing ways to amplify the good practice that we see.

Rachel Norman is Institutional Dean for Research Engagement and Performance and the academic lead on Research Culture at the University of Stirling. She is a mathematician who works on interdisciplinary projects and is Professor of Food Security and Sustainability. Rachel has been in the Dean role for 5 years and initiated the Research Culture awards in her first year. She has since been working with colleagues recognising and sharing good practice in research culture in order to embed it within our research practice at Stirling.



Claire Bradley is Researcher Development Officer responsible for the development of staff facing training and coordinates a range of researcher development activities, such as the Stirling Crucible, the annual Festival of Research and wider research culture initiatives, all aimed at cascading effective practice and developing the capabilities of research staff across all career stages and faculties. Claire provides key support to the work of the Research Environment Group for the co-ordination of the Concordat to Support Career Development of Researchers action plan, the HR Excellence in Research award submission and the Culture, Employment and Development in Academic Research Survey.





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# Foregrounding Positive Research Culture

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## Abstract

*A key theme emerging across the International Research Culture Conference 2023 (IRCC 2023) was the detrimental effect of excessive competition. Funders, institutions, and individual researchers from across the research landscape recognised that some actions intended to promote collaboration, and some measures of research culture, may contribute to an overly competitive research context that is detrimental to the research endeavour.*

*This article reviews key findings from the conference that could combat too much competition. We highlight work on learning across the research landscape, and continuing developments in measurement and evaluation of research culture that are inclusive and adaptable across contexts. We suggest that these are key elements of progressing positive research cultures and that these should be prioritised for discussion at future conferences.*

**Keywords:** research culture; interconnectivity; competition; measurement

## **Introduction**

The importance of academic Research Culture has been rising to prominence over recent years and is due to become a significant factor in the next Research Excellence Framework (REF 2029). Work conducted by major bodies including the Wellcome Trust (2020), the Royal Society (2018) and UK Government Department of Business, Energy and Industrial Strategy (2021) provide evidence that academic research culture impacts on the wellbeing and motivations of the research workforce and has a significant impact on the research process and outputs.

This was one of the key messages from Pro-Vice Chancellor of Research at University of Warwick, Professor Caroline Meyer's opening presentation at the IRCC 2023, setting the conference tone as an opportunity to reflect and connect with work conducted on research culture at various levels of the research landscape, with contributions from institutions and funding organisations across the four UK nations. The need to support collaboration and avoid excessive competition has been a theme from our empirical research (Albaghli et al., 2021) and something that resonated across the conference. Here we briefly review some of the key contributions in this area.

## **Research Culture: What's the problem?**

Dr Nicolay Ogryzko from UK Research and Innovation (UKRI) described the fluid construct of research culture in terms of five core aspects: equality diversity & inclusion, psychological safety, understanding the wider context of work, building connections, and rewarding more than publications. Individual higher education institutions and funding organisations have already highlighted issues within research culture relating to these core areas (Adams & Casci, 2019; Albaghli et al., 2021; Royal Society, 2018; Wellcome, Trust, 2020). These include bullying and harassment, challenges to mental health and wellbeing of researchers, lack of diversity and related problems with retention within the research workforce. Such issues negatively impact on the quality and productivity of academic research. Dr Ogryzko emphasised the need to think beyond the traditional hierarchy of PI, Post-doc and PhD roles in research, and to include the wider technical and professional staff who are key partners in the modern academic endeavour. He advocated the necessity for building diverse and collaborative research contexts, avoiding highly competitive 'monocultures' and creating a range of solutions that meet the requirements of different roles and contexts.

## **Taking Action**

From the outset, the titles of the major themes and plenary sessions all included key words that conveyed a sense of action (promoting, developing, opening, contributing, embedding, decolonising, building). From the initial address by Professor Meyer to the final plenary session by Professor Marcus Munafo (Chair, UK Reproducibility Network (UKRN)) presenters and delegates conveyed a sense of dynamic optimism, suggesting we are engaging in a change process that is live and gathering momentum across diverse levels.

Dr Jemima Napier and Dr Fiona Armstrong (Heriot-Watt University) identified two universal issues that appear across all research cultures i) a lack of connectivity and ii) depleted time for research. These researchers employed a mapping process to create an action plan for an ideal research culture within their own institution. Their presentation linked to further discussions and reports of the impact of reducing opportunities for interdisciplinary interaction on the research landscape, the lack of opportunity to harness interdisciplinary research to address complex social issues, and the limiting of research agendas to safe topics within discrete disciplines. The wider discussion among delegates suggested there may not be any 'ideal' research culture, but rather many research cultures need to align to maximise the impact of research.

## **Inter-Connections: Equality, diversity, and inclusion**

The idea of fostering multiple interconnected cultures that respect diversity and support inclusion appeared across many topics. Professor Caroline Boehm (Staffordshire University) provided examples of the systemic problems of 'invisible and uncontested whiteness'. She argued that colonial culture imbedded deep in our society shapes the social-cultural and intellectual structures within higher education, and impedes efforts to increase equality, diversity, and inclusion. We shared findings from our recent Research Culture Survey 2021 (**Albaghli et al., 2021**) showing how excessive competition is experienced differently across different demographic groups (**Craig et al., 2023**). For example, men favoured competition more than women, whilst also experiencing better collegiality, and younger groups felt more strongly that competition impairs research quality.

Professor Margaret Low and colleagues (University of Warwick) provided an example of how they had successfully achieved wider impact for an outreach programme intended to widen participation in STEMM (Science, Technology, Engineering, Mathematics & Medicine) subjects by pupils from state schools and lower socio-economic backgrounds. Increasing the diversity of staff, engaging technicians, and non-academic staff to become

involved in STEMM outreach enabled the development of resources and bookable activities to support teachers and pupils when discussing STEMM subjects, expanding the skills set of the research workforce and contributing to both the academic and wider communities.

Other parallel sessions and poster presentations provided examples of potential system problems that impede the development of positive research culture. Presentations by UKRN and UKRI pointed towards the impact of funding organisations and the role of overarching bodies in setting the tone of research cultures manifesting within individual institutions. Both speakers emphasised the need to support diversity and avoid creating research monocultures in relation to characteristics of individuals, and through recognition and reward for the range of professional roles involved in research.

### **Measuring Research Culture**

There were general feelings that successful measurement of research culture is still at an early stage, and that the pressure of the next REF is catalysing progress in this area. Several delegates and contributors recognised the need to establish clear parameters of what we value within research culture and how we want to invest our resources to demonstrate these values.

Mining existing datasets for potential measures of research culture was one suggestion brought to life by Maria Prince (Ulster University). Maria explained how employing existing datasets such as HR systems, ethics databases, impact trackers and citation databases as a network rather than a hierarchy could provide holistic insights of the researcher's journey. The interconnected data has the potential to support researchers across all career stages, promoting diversity and inclusion, focusing on transparency, and identifying markers of trust.

The work of Dr Shareefa Fadhel and her team (University of Leeds) demonstrated how using the SCOPE framework (**International Network of Research Management Societies, 2023**) helped them to co-produce measures for assessing research culture. Dr Hannah Griffin-James, an independent researcher, highlighted that asking questions through different lenses can create a rich picture of how research culture is experienced. Quantitative measures provide a broad picture of the average experience, while additional qualitative measures capture the perspective of marginalised or small groups and provides additional information that can mitigate against creating impressions of success by 'gaming'. Several contributors proposed adopting action plans and toolkits as a formative approach to measurement of research culture, allowing institutions to understand how far they have progressed but also creating

awareness of areas where progress is still required. Professor Candy Rowe (Newcastle University) and Professor Karin Wahl-Jordenson (Cardiff University) discussed how research culture surveys could be a useful tool for institutions to measure their progress over time and use this data to identify and drive actions that will impact research culture.

The final keynote presentation by Professor Marcus Mufano (UKRN and University of Bristol) took the themes of trustworthy and transparent metrics beyond the level of institutions to consider how to build a transparent and trustworthy academic system. His suggestions included placing less of the burden of trust on individuals by creating a cross-institutional approach to ethics and governance to manage professional behaviours and research processes. He referred to Elizabeth Gadd's work on avoiding making research culture just another metric for competition (**Gadd, 2023**) but rather recognising positive research culture as a prerequisite to producing outstanding research.

### **Going Forward**

We valued the conference emphasis on developing solutions, engaging across institutions to share learning, and the development of responsible approaches to measurement and evaluation. We offer some suggestions on how a very positive conference might progress in future.

The 2023 conference focused on higher level research culture 'expert voices'. Introducing a wider range of perspectives, including research culture voices from disadvantaged and minority groups would highlight experiences within the research ecosystem and offer more space to consider solutions beyond the common focus on metric and measurements (**Gadd, 2023**).

There were few opportunities for genuine round-table interaction between delegates. Structuring the conference activities to support interaction and discussion through 'speed-dating' approaches offer potential to facilitate discussions and knowledge sharing across the research ecosystem.

The high proportion of women taking part in the conference supported research findings that suggest women contribute more to the 'work' of research culture (**Albaghli et al., 2021; Ward et al., 2024; Wellcome Trust, 2020**). The question of how men might become more engaged in research culture work remains to be addressed.

Ensuring that outputs from the research community continue to be trustworthy, relevant and contribute to the common good, and that improvements in research culture are genuinely manifesting across all contexts are topics that could be expanded on in future conferences.

Funding is also a key topic influencing current and future work on research culture. Institutions in England can apply to Research England for funding for academic research culture while there are no allocated funds for NI, Scotland, or Wales. Despite this, the UKRN catalogue of institutional research culture projects (**UKRN, 2023**) shows that institutions across all four nations are progressing activities to improve academic research culture. Clarifying the impact of additional funding streams, such as the Wellcome Trust Institutional Funding for Research Culture (**Lewis-Wilson et al., 2023**) on the pace and direction of change will be interesting as these initiatives mature.

Finally, the impact of artificial intelligence (AI) on research culture and how it might be addressed will be an important discussion within the research community (**Holm et al., 2022**). Overall, this fascinating day emphasised a need for multi-level improvement of research culture, from individuals, through institutions, to the whole sector and looking outward to include internationally excellent practices.

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# The Burden of Research in Architecture: Why do researchers not have an equitable share in the glory of being called architects?

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## Abstract

*Architecture can be called a domain of infinite intangible equations. Advancement and innovative technologies in architecture are owed to the researchers who work behind the scenes and bring about these impactful changes. Nevertheless, there seems to be a significant disparity between research practitioners and practitioners in architecture, even with these notable advancements.*

*Architectural researchers follow a meticulous process that includes understanding the background of field visits and documentation. These steps form a creative journey and involve skills similar to design in terms of generating visuals. Researchers in architecture face the added difficulty of the age-old research methodology clash: quantitative or qualitative? Overcoming these barriers and succeeding as a researcher who contributes to society while maintaining one's individual researcher characteristics is a considerable task.*

*However, the question arises of why, despite these struggles, researchers in architecture do not have the same recognition that practitioners have and are often classified as second-class citizens in the architectural fraternity. The hypothesis framed in this reflection hopes to show that the field of architecture needs researchers. Especially with the advancement of artificial intelligence, their role becomes primary in contributing to the data pool.*

*Therefore, the way forward is to give due diligence to architecture researchers and provide ample opportunities and funding while also holistically respecting their role in their community and society.*

**Keywords:** architecture research; research bias; architecture research in India

## **Introduction**

Architects who are researchers, who are they? They are precisely what they are: architects. Quite often, the research fraternity within the architecture profession is robbed of the consistent credibility that an architect in practice or industry gets. This rejection causes ambiguity about whether a researcher can or should receive the same glory as a practitioner. But why? Aren't they the same? Isn't the same rigorous training undertaken by both? What defines an 'architect' is their ability to be creative, critical, and produce the best possible outcome for a given problem in the built environment.

In a professional career like architecture, with a stark distinction between practice and academia, a researcher in the discipline is often placed in the latter category. There is a conflict of interest since the practitioner often criticizes the academician for not understanding the practicalities in the field, while the academician complains that the practitioner lacks vision of the larger picture. An architectural researcher is often situated at the epicentre of these beliefs and, therefore, brings about architectural vocabulary like alternative practice. Consequently, architectural researchers are most often not accepted in either of these prominent groups that are eager to build or to educate. Architecture is synonymous with research as there is study and exhibition involved (**Roberts, 2007**). While architectural practices cater to the individual or a community, research practices cater to the larger pool of architects.

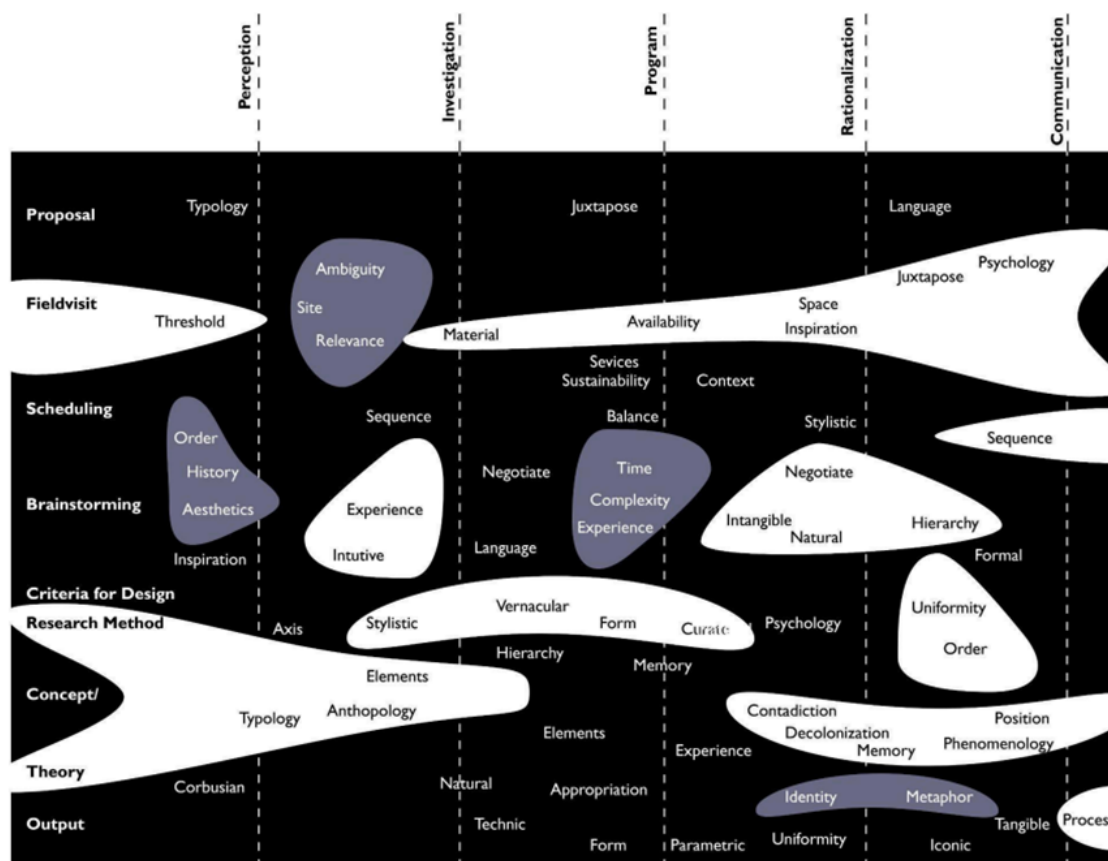
Architectural education is closely related to technology, and hence, most architectural schools are extensions of engineering institutions. The research in technological sciences arrives at a prototype or a product that requires quantifiable data. Architectural research is closely associated with the arts and humanities, although it operates out of a technological institution.

Advancements and innovative technologies in architecture are owed to the researchers who work behind the scenes and bring about these impactful changes. However, in recent years, the act of research has become more widely exploited in academic institutions. Accreditation bodies believe that research must be pursued in institutions and by academics who might have the funding and necessary networking. Institutions have been interested in securing accreditation from national bodies rather than ensuring the quality of knowledge that has been produced through research. It is interesting to note how, especially in developing and underdeveloped countries, the lines between academia and research are blurred, and one is required for the other, particularly for the mundane yet necessary objective of career advancement and growth.

In 2002, the Bartlett School of Architecture at UCL went down one rank, and when the reasons were investigated, it was found that it was because most of the academics were researchers and not as many were 'practicing' architects (**Hodges, 2002**). These intertwining interests of influential bodies ensure that research-only academics constantly pursue research papers and fellowships. It's widely agreed that new knowledge needs to be produced, but the question is how the knowledge is produced. The conjecture is whether the research is more academic or more practical. Forced research loses its integrity immediately among the scholarly circle. India is one of the countries holding a large number of PhDs; however, the citations are poor due to the lack of research integrity (**Ministry of Education, 2021**). Honesty, accountability, and good stewardship in research are compromised due to a lack of efficient management by the universities. This has been historically recorded in India (**Shahre & Roberts, 2020**), causing an aversion in academia towards research, making it a burden. On the other hand, in a professional setting, the researcher is often considered a misplaced academic who is too philosophically inclined and lacking in practice and experience.

Nevertheless, there seems to be a significant disparity between research practitioners and practitioners in architecture, even with these notable advancements. This is surprising since studies have shown architectural research outputs submitted to the RAE are of higher quality in academic creative design research and theory and history than practice-based outputs (**Colins, 2014**). The canvas in Figure 1, created by the authors, showcases the architect in a built environment and describes the process of an architect along with the large skill set architects are trained with through their education.

Figure 1: 'The process of an architect' (Source: Author)



The visual is inspired by Charles Jencks' Tree of Evolution (Jencks, 1971). Here, the canvas represents the architect in a built environment. The terms on the Y-axis describe the process of an architect, and the terms on the X-axis refer to the large skill set architects are trained with. The other terms on the canvas are the vocabulary of architects, irrespective of the nature of the work they perform in the fraternity. The words in the black-and-white spaces refer to the practitioners and researchers, respectively, while the grey region shows the intersection of these terms among design practitioners and research practitioners.

A qualified architect and research practitioner pursuing alternative practice does not indulge in the glory of being called an architect. One is forced to accept that one left architectural practice to pursue research for the 'greater good' of society, which is ironic because even such a 'noble pursuit' is not given its due diligence.

These are all the border issues that make it challenging for the fraternity to understand the researcher. The objective here is to explore the process of the architectural fraternity as a whole, to illustrate their commonality. This reflection also positions that whether a designer or researcher, they are primarily architects who acquired similar training in their formative years. They are not independent of each other, and this can be seen in the

process they respectively adopt for their professions. The reflection aims to shift the perspective of professionals in the field to focus on the interdependencies rather than their differences in opinion or biases framed due to the nature of the practice.

The work of researchers becomes vital in situating the work of architects and the production of knowledge in the field. However, researchers do not gain their due respect among the fraternity. The issue addressed here is more complex than it seems. There are several perceptions of this issue depending on the region, gender, age, and institution (**Morales, 2020**). Nevertheless, this reflection simply puts the activities performed by design practitioners and research practitioners to vouch for their interdependency, by identifying their similarities through their differences. The researcher's integrity needs to be understood and addressed from multiple vantage points, and this reflection just scratches the surface of the same. The bias against sharing the glory of being called architects can be addressed when there are more open conversations among researchers and practitioners and awareness about research in the foundational course of architecture.

Another burden is funding for research in fields of the humanities, which lack a tangible output. All funding bodies and institutions prioritize proposals for developing new products, which shifts the focus from producing any theoretical treatise. The output from theoretical research is often considered subjective and non-rewarding to the funding bodies. The criticism offered in theoretical research is often viewed as a personal opinion due to the intangibles in the outcome. In architecture, which deals mostly with tangible materials, products, etc., the underlying factors become unpopular and considered useless.

The age-old issue of trying to fit architectural research into a qualitative or quantitative method becomes a burden for the researcher. The tangible and intangible aspects of the built environment are inseparable. Every tangible product addresses an intangible cause or effect.

### **Process of an Architect**

Architectural researchers use the built environment and user perspectives as evidence in their research. The fundamental education acquired by the designer, educator, or researcher is similar and, therefore, the approach is common. In fact, in a country like India, there is a regulating body called the Council of Architecture that controls and modulates the education given to every architecture student in the country through their schools and universities (**Ministry of Education, 2022**). One goes through a meticulous process of understanding the site, reading its context, analyzing future development, geographical and topographical study, and

finally the output. The only difference in the process is just the output, which is knowledge production and not tangible.

Researchers follow a meticulous process that includes understanding the background of field visits and documentation. These steps involve a creative journey and skills similar to design in terms of generating visuals. However, the question arises of why, despite these struggles, researchers in architecture do not have the same recognition that practitioners have and are often classified as second-class citizens in the architectural fraternity.

In the built environment business, the result is a tangible product that is highly functional on many occasions. Even among research, those that gain interest are ones involving new technologies or materials that benefit the construction industry. However, when it comes to architecture, several intangible factors define the success or failure of the structure, such as design, user experience, sense of belonging, aesthetics, culture, heritage, and sentiments. While these are beneficial factors, they are often not used for branding over cost-effectiveness or sustainable design. When a researcher keeps these intangible factors as key in their justification, this proves unpopular among designers and users who care less for these aspects.

An architectural researcher does not receive the same recognition in a conversation. Any practitioner is immediately assumed to have a practical approach towards an issue relating to the built environment. In fact, architectural schools in India have mandated that a practicing architect be present on the panel of reviewers for all design studios. Sometimes, even documentation studios involve practitioners' views over a historian or theoretician.

A noticeable trend while architecture academics have a conversation is that they would choose practice over research any day just because of the credibility practice gives them as architects. It pushes architects to the point of having to agree to disagree on the point of 'the glory of being called an architect'. Then there is the issue of finding impactful journals as architects and the lack of mentorship we face because there aren't as many architects involved in research as we would like. This reinforces our discourse on the bias against research architects.

### **Potential Solutions**

According to Jill M. Franz, architectural research processes can be of three kinds: 'technically oriented research', 'conceptually oriented research', and 'philosophically oriented research' (Franz, 1994). Therefore, architectural research can be broadly classified as material-based or idea-based. Architects follow a physical process and an intellectual process in

any work they produce. All ideas turn into designs that can be turned into a reality. To understand the properties of a material in a research project aiming to develop its performance, the researcher runs a series of tests. Depending on the material, respective craftsmen carry out experiments and innovations. 'Science, art, technology, and crafts were closely interrelated and connected with the use of the materials – stones, wood, clay, metal, and glass' (Hauberg, 2011). The primary difference between architectural research and research in other humanities is the use of materials and experimentation with products. The method of analysis involves sketching, model-making, simulation, mapping, and sometimes completing architectural elements. Therefore, the process followed by the researcher is quite similar to that of an architect who sketches to think, makes models to convey, simulates to project, and constructs the final product. Similarly, the intellectual process involves thinking, traditional understanding, contextual interpretation, knowledge of the required skills and workmanship, and fundamental knowledge of building technology. Both architectural research and design are shaped by similar dimensions and conditions.

The architect addresses the issues and conditions posed by the context and provides a complex solution—built-form. To arrive at this solution, one sketches, makes models, and simulates the weather conditions, etc. This is a process where the problem and the solution are constantly interacting (Thomsen & Tamke, 2009). Along with these tools, the designer applies their knowledge about the context, its culture, understanding of the materials against the weather, and also aesthetic aspects. However, the primary difference between the researcher and the practitioner is the use of words, as opposed to drawing. The focus of the researcher is knowledge production, while that of the practitioner is form-giving. While both are cognitive processes, visuals are more active and act as a dialectic tool, but writing involves another layer of understanding and needs to be intentional. Furthermore, while representing a space in both design and research, the legends and the tools used to produce visuals are similar. Sand is represented with grain, concrete is represented by solids, and brick is represented with two slanting lines, and so on. Also, digital design tools hold knowledge of the approach used for representation, thereby bringing unity to the research and building process.



## Conclusion

The researcher starts with a research question, following a predetermined methodology, and then projects a potential solution through design. The designer takes the opposite direction by starting with a proposal and experiments on the way up with rational questions. In a way, research and design are imbibed in the process of an architect; one can only be complete with the other.

Mentorship and peer relationships affect the quality of research as it directly influences the perception of the subject by the research community. This reflection makes the case that a healthy circle of researchers is essential in the architectural fraternity. Any work in the built environment is a collaborative effort—a building project requires an electrical expert, plumbing expert, structural engineer, architect, etc. It requires a complete understanding of the ecosystem that enhances the quality of human life.

In this time and era where visualization is key to expressing ideas and knowledge, there are many ways of representing research other than just words, such as the way Charles Jenks (**Jencks, 1971**) or Anuradha Mathur visualizes and renders data (**Mathur, 2011**). Architectural research looks at issues with contemplation and for the larger group of users through generalization, while the designer caters to the needs of a specific family within a micro context. Art practice qualifies as research when the process involves original investigation by addressing questions raised by the context and by solving the issues through applied knowledge (**Borgdorff, 2009**).

In society, as well as in architecture, there are constant shifts taking place affected by immediate environmental issues or by the birth of new technology. Therefore, research contributes to the need for a holistic approach by the fraternity, whether in academia or practice. Researchers are just as much architects as practitioners through their training, process, and understanding of the built environment and hence need the right kind of monetary benefits and societal incentives that any practitioner would get. Research must quintessentially have a social purpose and affect policymaking. Ultimately, researchers in architecture deserve the glory of being called an architect rather than it being a burden that is barely acknowledged or, at best, humoured.

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# Developing Fundamental Research Practice Training at the University of Oxford

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## Abstract

*The adoption of up-to-date research practices is the foundation of reliable and trusted academic research. Yet researchers are often left to piece together increasingly more complex and ever-evolving guidance on how to design, plan, execute, and report their research findings or sources. Higher educational institutions have a responsibility to develop more coherent ways to assist researchers to access the latest policies, guidance, and tools, e.g., for establishing equitable partnerships, managing research data, ensuring information security, choosing open and reproducible publication models.*

*At the University of Oxford, enabling and promoting good research practice is one of three key pillars in our research culture strategy. To deliver on the institutional ambitions for Research Practice, we are designing and implementing a comprehensive training and support programme, which includes running digital transformation projects and defining organisational guidance and policies.*

*This paper focuses on the training component and the creation of a set of short, e-learning modules on topics which include: Research Integrity and Governance; Open Research Practices; Research Design; Collaboration; Data; Authorship, Publication and Peer Review; and Research Impact and Public Engagement.*

*We share the criteria we have developed to help us map, assess and integrate pre-existing training and resources. The central aim is to deliver researcher-centred educational material that is applicable to any discipline and career stage. We also discuss how we are engaging key domain experts across the university through membership of small working groups for each of the modules. Once the core modules have been finalised, the materials will be publicly released under an open licence.*

**Keywords:** research practice; research integrity; training; course evaluation

## Introduction and Rationale

The research community has become increasingly aware over recent years that there is a considerable gap between behaviours that are good for research as a whole (e.g., collaboration, openness and transparency, rigour) and the behaviours that currently promote the careers of individual researchers (e.g., speed, novelty, ground-breaking results, individualism). This gap needs to be closed, which means we need to develop better ways of encouraging good research behaviour by making acting in those ways that benefit the individual’s research career. This ambition will require a serious culture change from across the research community, from top-down sources like funders and institutions, to bottom-up initiatives from grassroots organisations formed by researchers for themselves and their peers.

This desire to close the gap between what is good for research and what is good for researchers is not unique to the University of Oxford, and there are a great many relevant policies and agreements already developed or signed by universities, funders, and sector governing bodies. They include, but are not limited to (**Table 1**):

*Table 1: Key Sector Concordats, Agreements & Community Principles*

Sector Concordats <sup>i</sup>	Agreements <sup>ii</sup>	Community Principles <sup>iii</sup>
Concordat to Support Research Integrity	Technician Commitment	FAIR principles
Concordat on Open Research Data	San Francisco Declaration on Research Assessment (DORA)	TRUST Principles for digital repositories
Concordat to Support the Career Development of Researchers	Leiden Manifesto for Research Metrics	CARE Principles for Indigenous Data Governance
Concordat on Openness in Animal Research	Guidance for Safeguarding in International Development Research	
Concordat for Engaging the Public with Research	Race Equality Charter	
	Athena Swan Charter	

Concordat for the Advancement of Knowledge Exchange in Higher Education		
European Code of Conduct for Research Integrity		

As anyone who has tried to implement policy knows, agreeing best principles for practice is one thing, whereas implementing these practices in day-to-day operations can be a lot harder, requiring people who have the time and effort to be able to engage with and develop these fully.

At the University of Oxford, we are developing a programme to advance Research Culture which consists of aligned policies, support and incentives, and is formed of three priority areas: Research Practice, Careers, and Valuing Contributions. The programme is supported and overseen by the Pro-Vice-Chancellor for Research, the priority areas are led by Academic Leads working with professional staff in Research Services, Research IT, and the University Library. The Programme is in line with the University Strategic Plan, providing the top-down and bottom-up drivers for our work developing and supporting the University’s Research Culture.

*Research practice training*

We define Research Practice as the approaches by which researchers plan, design, execute, and report their research work, regardless of what domain the researcher is working in. As a team, we work with key stakeholders (including researchers, managers, and professional services staff) to develop and support Research Practice in the University.

Increasing the quality of research practice requires several supporting actions, including **(Table 2)**:

*Table 2: Actions Supporting Research Practice Quality*

1. Informing researchers about good research practice and demonstrating what good research practice is. This will include:	<ul style="list-style-type: none"> <li>a. Raising awareness about research practice</li> <li>b. Providing training, support and educational resources</li> <li>c. Communicating institutional, sector and funder policies and guidance, as applicable to the researcher and their domain</li> </ul>
2. Making it easy for researchers to implement good research practice as part of their work by providing:	<ul style="list-style-type: none"> <li>a. Centralised support, with provision of core tools, services, registries and infrastructure</li> <li>b. Reward and recognition for the researchers who use good research practice,</li> <li>c. Development of a community of practice</li> <li>d. Clearer policies for managing data and digital materials</li> </ul>

*Research practice training modules and topics*

We are developing a set of research practice modules to inform researchers in the University what resources are available, and what is expected of them by way of good research practice.

The modules are:

1. Research integrity and governance
2. Open research practices
3. Research design
4. Collaboration
5. Data
6. Authorship, publication and peer review
7. Research impact and public engagement

The module subjects were originally developed in 2022, following a desk-based mapping of pre-existing training provision, and arising from training needs identified via a series of 40 interviews across the University. This project provided a snapshot of the courses on research practice available to researchers at the time and allowed us to determine where there were gaps in training provision that we needed to fill.

We are designing the Research Practice training to be accessible, foundational and applicable to all disciplines, and we want researchers to use the ideas learned in the training to improve their research practice. We hope they will be a springboard for a more reflexive approach to research practice that enables behaviour change, along with supporting improved supervision and Continuing Professional Development at the University.

We identified our key audience for these modules as researchers who are new to the University, from all career stages and disciplines. The modules can also be used as a refresher for more experienced researchers, and as a place to find pointers to other, possibly more advanced or specialist, university-level resources.

We have determined that the key criteria for a core research practice training needs to be:

- Free to the user
- eLearning – can be done at any time via the web
- Accessible – keeping in mind the needs of screen readers, colour blindness, ability to speed up/slow down content and take breaks

- Less than 1 hour per module to complete
- Foundational, with content relevant across all disciplines
- Completion rates tracked, to monitor engagement
- Updateable and version-controlled

Once developed, the course materials will be made open to other users/institutions once complete. There will be aspects of the training specific to University of Oxford, for example, details on how to get ethics approval for a project which discusses the university ethics committees by name, but we aim to create course materials that are as general as possible, and that can be easily adapted to other contexts/institutions. We plan to provide guidance and support on how to customise these resources for other institutions.

When it comes to determining what information should be included in the core modules, we will determine how generally applicable the material is to all researchers. In general, if the material is domain-specific, then it should be signposted from the 'training and resources' section of the module, but not included in the main text of the module.

#### *Research practice module development framework*

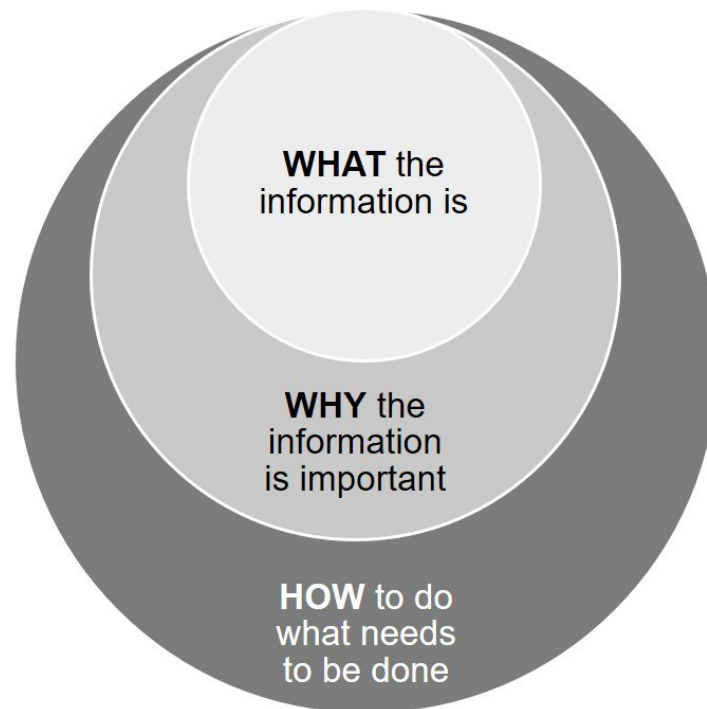
When developing the content for the core training modules, we implemented the following conceptual framework (**Figure 1**):

1. *WHAT* the key principles of good research practice are in the module's scope
2. *WHY* researchers should care about these principles
3. *HOW* to implement the principles and improve research practice

The core modules will cover the *WHAT* and the *WHY* in as much of a 'discipline-agnostic' way as possible. For the *HOW*, each module will include a 'training and resources' page, which will provide links to other, more detailed and discipline-specific training (in Oxford and beyond), factsheets, other resources, etc. This will provide a single place where researchers can go to find out options for more detailed training in their domain, support for using institutional resources, and connections to other sources of information. The courses' key differentiating factor is that they are being designed to be both educational *and* a source of information researchers can return to at any point in their research process and when they need to support the various aspects and stages of a research project.



Figure 1: Conceptual framework for identifying and structuring the content of the core training modules



#### ***Module content development***

Developing the module content is a collaborative process involving members of the research practice project team and experts in each module's content. The experts — drawn from within the university — were invited to join small working groups to develop the course content via a series of workshops and interactive conversations.

To develop the content, each small working group:

- Had a 1-hour virtual workshop to brainstorm module content
- Provided guidance on the syllabus created based on the brainstormed content
- Provided information about existing courses and materials already available within the University and elsewhere
- Will be responsible, on a yearly basis, for reviewing and updating the content on a set schedule once the modules have gone live

The brainstorming workshops were facilitated by the research practice team to enable the group of experts to conceptualise what the module should cover – to make it as useful, targeted, and successful as possible – and how it should be structured, rather than work from a pre-defined and traditional course structure (e.g., an 'off-the-shelf' solution). The initial workshops are run online using the visual collaboration platform Miro.<sup>iv</sup> The content from the workshop and further discussion is then expanded into a full draft of the module by the research practice team. Then it is

reviewed again by the small groups through several iterations building from the initial structure and content towards embedding interactivity and engagement. When it is signed off by these experts, it is then used to build the course in the University’s Learning Management System (LMS), Canvas.

The resulting modules – while sharing the same conceptual framework described above – are being shaped by the guiding principle of asking how researchers engage with and approach their research practice. For example, more ‘traditional’ training and resources on research data management employ the research data lifecycle and the actions associated with it as an organising principle. By contrast, our small group identified this structure as a barrier for researchers, who often need to focus on planning their data strategy and may get confused and even obfuscated by a model originally developed for research data managers, not them. As a result, our ‘Data’ module focuses on the researcher experience and the structure and content are guided by key questions researchers should ask themselves about their research data (**Table 3**).

This approach takes on board learner-centred design principles, such as ensuring content is relevant, supporting learners to build and scaffold their learning, or facilitating interaction and conversations where possible. As a result, the learner-centred curriculum maximises *flexibility* of the learning experience, by which we aim to enhance uptake and ensure the programme’s success across all disciplines and career stages.

*Table 3: Side by side comparison of the University of Edinburgh’s MANTRA Research Data Management training and the University of Oxford’s ‘Data’ course.v*

<b>MANTRA course units</b>	<b>Preliminary course structure for ‘Data’</b>
<b>Research data in context</b> <i>Types of research data, why managing data is important, challenges of data in society</i>	<b>1. What is data in research?</b> <i>Introduction and University of Oxford context</i>
<b>Data management planning</b> <i>Good practice and responsible research, checklists and planning tools, funder compliance</i>	<b>2. How do I plan my project’s data strategy?</b> <i>Where to start and key principles</i>
<b>Organising data</b> <i>Naming and re-naming conventions, file and code versioning, use of cloud collaboration tools</i>	<b>3. What’s my research data and where do I find it?</b> <i>Identifying and assessing data</i>
<b>Preparing your data for archiving</b> <i>What is archiving and why archive your data, file formats and digital preservation, data documentation &amp; metadata</i>	<b>4. How do I manage data during my project?</b> <i>Hardware and software needs, live data workflows, access and rights, data analysis and visualisation</i>

<p><b>Keeping research data safe</b> <i>Backup and storage methods, password safety and encryption, secure sharing and collaboration</i></p>	<p><b>5. How do I preserve and share my data and get credit for it?</b> <i>What to share/not share and how to manage each, repositories, archives and more</i></p>
<p><b>Protecting sensitive data</b> <i>Data protection legislation, ethical considerations and informed consent, safeguarding sensitive data</i></p>	<p><b>6. What is metadata and why is it important for my research data?</b> <i>Documentation and metadata best practices</i></p>
<p><b>FAIR sharing and access</b> <i>Benefits and barriers to data sharing, FAIR Principles, open data licences</i></p>	<p><b>7. What are my data responsibilities and what policies should I follow?</b> <i>Key policies and processes researchers need to be aware of and follow, contextualised at University of Oxford</i></p>
	<p><b>8. Wrapping up</b> <i>Key points, next steps, training and resources</i></p>

Above, in Table 3, on the left, the MANTRA units focus on actions and processes with data; researchers need to identify and understand where these actions are needed, and plan in advance. On the right, we’ve focused on the researcher experience to design the ‘Data’ syllabus around questions and workflows researchers are most likely to encounter in their work.

### **External Training Resources**

In order not to reinvent the wheel, we attempted to take advantage of all the excellent, pre-existing resources currently available to Oxford’s researchers, as well as external resources including community-developed materials and open educational resources that are licensed for reuse.

For this reason, in each module there is a ‘Training and Resources’ section, which links out to other courses and resources. The question then became: how do we decide which courses/resources to include in this section?

#### *Criteria for recommending external courses/materials*

To do this, we developed a set of course criteria to suggest ‘recommended’ and ‘available’ courses and materials (see **Table 4** for the full list of criteria), e.g.,

- Accessible to everyone = recommended
- Restricted to limited audience = available

In order to keep control of our scope, and make the modules more relevant for Oxford researchers, the courses/resources linked to in ‘Further information’ will have a focus on ‘How to do things at the University of Oxford’. The content of the main text of the modules (the ‘What’ and the ‘Why’) is intended to be as general as possible.

**Table 3** gives a full list of the recommendation criteria, and presents various examples within each criterion that will lead to ratings of ‘recommended’, ‘available’ and ‘unlikely to be recommended’. Making the decision on whether a course should be recommended or not will be a matter of weighing all the individual criteria according to the small group members’ requirements. In the ‘Further Resources’ section of the modules, the training recommended to researchers does not include ‘recommended’ or ‘available’, but they just appear for the researchers as options. Where there is a small cost attached, this is usually noted for researchers so they know before investigating further.

This is not expected to be an exhaustive list of criteria, and is more subjective than objective, but we have found it useful.

It is also worth noting that we rely on our small groups experts when it comes to determining the suitability of a course for recommendation, as we —the module creators – don’t have the time, effort, or domain knowledge to attend and judge each course on its merits. We aim to be inclusive and err on the side of including resources in our list, rather than leaving them out.

*Table 4: Criteria for determining whether a course or other material is recommended, available, or unlikely to be recommended.*

Criteria for external (non core) courses/materials	Recommended	Available	Unlikely to be recommended
<b>Cost</b>	Free for users	Relatively small charge by providers	Chargeable to users by providers
<b>Accessibility</b>	Available online to Oxford staff and students	Human-led at specific times (e.g., webinars that aren't recorded)	Requires significant travel to in-person training site
	Flexible start and end times	in person, in classroom training, local to Oxford	Ad hoc or irregular provision
	Accessibility as standard (e.g., suitable for screen readers)	Only available to certain researchers (e.g., from certain Divisions or Departments)	Poor accessibility standards
	Clear definition of audience and learning objectives before signing up		
<b>Scalability</b>	No restrictions on number of users able to take the course	Number restrictions about what we anticipate our usage, or can be fairly easily adjusted	Significant competition for limited places

<b>Evaluation</b>	Course has method for users to provide feedback	Course has method for users to provide feedback	No mechanism to provide feedback
<b>Length</b>	Determined by course content Sufficient breaks Ability to start and stop at will	Timetabled, with breaks	Longer than 1.5 hours without breaks
<b>Sustainability</b>	Already existing mechanism for updating content Has version control Course is date-stamped		Materials not updated, version controlled or dated
<b>Quality and credibility</b>	Signed off and/or recommended by core group of experts/small group members	Provided by well-known or credible training provider	Provided by unknown provider
<b>Usage metrics</b>	Integrated into existing systems so we can access common reports for sign up and completion numbers	Has ability to provide sign up and completion numbers from a different source	No ability to track usage
<b>Content</b>	Clearly identifies course content by type/domain/implementation Expands on core module content Suitable for early career researchers/DPhil students/new postdocs		Very specific training on very specialised content

### Further Work

The e-learning series development is just one part of the University programme to change research culture. It is an important first step to raise awareness and train and support researchers in adopting good research practice, which can then be built on to provide communities of practice at a bottom-up level.

We gratefully acknowledge that there is a lot of pre-existing research practice training available in the University, which has been developed by experts and tested and validated by students over many years. As a research practice team we don't duplicate effort or reinvent training courses or materials; instead, we should be filling any identified gaps in the provision of training, and updating existing training where necessary.

Our modules are signposting to pre-existing training, where it is suitable, and we are working collaboratively with colleagues who have existing expertise and real-world knowledge that should be shared.

Our aim is not to mandate a standard set of research practices, but instead to educate researchers on basic principles, then guide them to appropriate

training and resources that suit them, their domain, and their research. We acknowledge that different communities have different practices, and that there is no 'one-size-fits-all' standard that is useful and applicable across all research domains.

Alongside developing the training modules, we are also developing communications plans and channels together with other central services and Divisional management boards, to let people know what training, resources and support are available, where those things are, and how to use them. A key method for communicating will be by promoting and embedding training and resources in Departmental websites, processes, inductions, etc.

We will need to evaluate the impact of the training programme, which will require metrics to be collected, such as completion rates segmented by career stage and department. We should not forget about engagement analytics and qualitative markers, which will enable us to assess the modules' usefulness and their behavioural impact, as well as identify barriers (where is engagement low?), hot spots (where is engagement high?) and opportunities (what topics are emergent? Where do researchers need support?). We will also need to track the effectiveness of our other research practice communications, and whether or not our efforts are resulting in lasting, behavioural change in the university's research profile. The drivers for quantifying these metrics tie in with REF 2029, in particular the People, Culture and Environment element.

We also want to share the work we have done outside the university, as we believe that others can learn from our experiences. We have spent significant time collaborating with training experts and wider stakeholders (within and external to the university) to develop our research practice training and knowledge. We are firm believers in treating the work we have done with the same levels of openness, transparency, and verifiability that we expect our researchers to adhere to.

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Sarah Callaghan is Research Practice Manager at the University of Oxford, dedicated to supporting researchers through policy and training to ensure that the integrity of research is preserved, and that research excellence is underpinned by the principles of honesty, rigour, impartiality, collegiality, trust, transparency, and accountability. She was Editor-in-Chief for *Patterns* - a gold open access, multidisciplinary journal of data science by Cell Press. Her PhD involved creating, managing and analysing data for radio propagation engineering and meteorological modelling. She has research interests in research practice, ethics and integrity, data citation and publication, data sharing, metadata, and data management.



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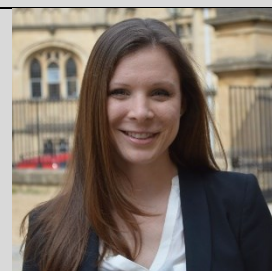
Laura Fortunato is Professor of Evolutionary Anthropology at the University of Oxford; a Fellow of Magdalen College, Oxford; and an External Professor at the Santa Fe Institute. Beginning in 2016 she has established key initiatives relating to reproducibility and open research, including Reproducible Research Oxford (RROx) and, with three others, the UK Reproducibility Network (UKRN). These initiatives provided the impetus for establishment of the University's Research Practice programme, and she co-lead development of this effort with Tanita Casci in 2021/22. In March 2022 she was appointed to the role of the University's Academic Lead for Research Culture (UKRN).



Mónica Palmero Fernández is Research Practice Coordinator at the University of Oxford. She obtained her PhD in the archaeology of ancient Western Asia from the University of Reading and has held research and teaching posts at the University of Reading and the University of Glasgow. She has focused her professional practice on initiatives that support more inclusive, ethical, and equitable research and teaching cultures in archaeology. In 2023, she joined the University of Oxford's Research Practice team to help develop a holistic training programme to support fairness, transparency and accountability in the conduct of research.



Jackie Thompson works as a researcher at University of Bristol as well as a professional supporting training in open and reproducible research at University of Oxford, and is heavily involved in the UK Reproducibility Network. She received a PhD in experimental psychology from the University of Oxford in 2015, after which she worked as a postdoctoral researcher in psychology for several years, after which she migrated to the field of meta-research, or research that aims to improve how research is conducted, reported and disseminated.





Susanna-Assunta Sansone is the University's Academic Lead for Research Culture (Research Practice); Professor of Data Readiness in the Department of Engineering Science; and Director of the Oxford e-Research Centre. An author of the FAIR Principles, she leads her Data Readiness Group to research and develop tools, methods and standards to represent and share multi-dimensional data, supporting data readiness, re-usability and reproducibility.



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**Endnotes**

<sup>i</sup> Information on these concordats can be found at: Research Integrity (<https://www.universitiesuk.ac.uk/topics/research-and-innovation/concordat-support-research-integrity>), Open Data (<https://www.ukri.org/wp-content/uploads/2020/10/UKRI-020920-ConcordatOpenResearchData.pdf>), Career Development (<https://researcherdevelopmentconcordat.ac.uk/>), Animal Research (<https://concordatopenness.org.uk/>), Public Engagement (<https://www.ukri.org/wp-content/uploads/2020/10/UKRI-151020-ConcordatforEngagingthePublicwithResearch.pdf>), Knowledge Exchange (<https://www.universitiesuk.ac.uk/sites/default/files/field/downloads/2021-07/knowledge-exchange-concordat.pdf>) & Research Integrity (<https://allea.org/wp-content/uploads/2023/06/European-Code-of-Conduct-Revised-Edition-2023.pdf>).

<sup>ii</sup> Information on these agreements can be found at: Technician (<https://www.techniciancommitment.org.uk/>), DORA (<https://sfdora.org/>), Leiden (<http://www.leidenmanifesto.org/>), Safeguarding (<https://ukcdr.org.uk/publication/ukcdr-guidance-on-safeguarding-in-international-development-research/>), Race Equality (<https://www.advance-he.ac.uk/equality-charters/race-equality-charter>) & Athena Swan (<https://www.advance-he.ac.uk/equality-charters/athena-swan-charter>).

<sup>iii</sup> Information on these community principles can be found at: FAIR (<https://www.go-fair.org/fair-principles/>), TRUST (<https://www.nature.com/articles/s41597-020-0486-7>) & CARE (<https://www.gida-global.org/care>).

<sup>iv</sup> See <https://miro.com/>.

<sup>v</sup> To access MANTRA, an online course for people managing digital data within research projects, see: <https://mantra.ed.ac.uk/>.

# The More the Merrier: Approaches to the design and delivery of professional development for researchers in UK higher education institutions

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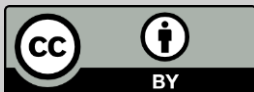
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## Abstract

*Researcher developers today are expected to be able to support researchers at a variety of different career stages, all of whom have increasingly varying needs and identities. Some postgraduate researchers identify more as staff than as students, postdocs may struggle with transitioning to independence when they hold no independent position, while established researchers face the 'muddle in the middle'. For both researcher developers and for universities, this raises the question: is it better to develop provision, which is as inclusive as possible, or should we focus on tailoring provision to more specific needs and communities?*

*In this paper, we will reflect upon our own experiences developing provision for specific audiences (e.g., Research Fellows) as well as more general ones. We advocate for a 'more the merrier' approach, forging cross-institutional collaborations and networks to provide a breadth of opportunities including those for broad and specific groups.*

**Keywords:** professional development; research culture; higher education

## Introduction

Researcher development is, arguably, experiencing something of a 'golden age'. Universities and other research institutions, supported by initiatives such as the Concordat to Support the Career Development of Researchers (Vitae, 2019) and wider movements to transform research practice and culture (e.g., Wellcome, 2020), are focused more than ever on how to support researchers' continuing skills and career development. There is a wealth of opportunities available to researchers at many universities and research institutions, particularly those at an early career stage, supporting them whether they decide to continue with an academic career or move into another field entirely.

Provision for professional development within universities is often tailored to particular career stages, and it can be tempting to group so-called 'early' and 'mid-career' researchers together for the sake of career and professional development interventions. However, we also see on a daily basis the tricky nature of career transitions, and the difficulty in grouping together what can be very disparate groups. There is, for example, a great difference in how doctoral researchers see themselves and how universities view them. Are they staff, students, or both, and how does this affect their development needs (Vulliamy, 2023)? Further down the career line, postdoctoral researchers with varying levels of experience can struggle with the transition to research independence in the face of uncertain career prospects (van der Weijden et al., 2016). Even established researchers, who may have attained much-coveted permanent positions, still struggle with the 'muddle in the middle', and the feeling that their professional development has been neglected (Gould, 2022).

This identity struggle is further complicated by structures and policies whereby it may sometimes be beneficial to identify oneself using categories such as 'early career researcher', and other times not. For example, in order to access certain funding opportunities or development activities, researchers may only be eligible if they have never held a permanent position before, while other opportunities may only be open to those with the security of a permanent position.

In reckoning with the unclear boundaries of academic career trajectories, it quickly becomes clear that there are inherent problems with the terminology we use to refer to our researchers. Both 'early career' and 'mid-career' are poorly defined terms. In our discussions with colleagues at other institutions, we have found that the definition of an early career researcher varies widely, factoring in whether postgraduate researchers are 'early career researchers' or whether the number of years or positions post-PhD qualifies this status. Individual circumstances and life choices

add further nuance and necessitate careful application of these categories. 'Early career' often equates to 'young' in the minds of many, but increasingly this is not the case. Likewise, the 'mid-career' stage can be extended for some, particularly for those with caring responsibilities who may not be able to access opportunities to expand their experience in more senior roles. Such terms are therefore, at best, overly generalised, and at worst, risk tarring all with the same brush. Within these broad career stages, there are a myriad of differing situations, needs and wants. No two researchers are the same.

The broader context is that we are part of an ageing population, and as a result increasingly likely to navigate multiple career transitions across our lifetime (**Gratton & Scott, 2016**). Practically speaking, 'early' and 'mid-career' could in theory span decades. However, while academic research was once considered a 'career for life', increasingly the sector is recognising and facilitating movement in and out of academia. Inevitably, increased porosity between sectors and career paths will make it even more difficult to categorise researchers and their experience by 'career stage'.

From the perspective of researcher development, this poses a number of challenges. For us, there is one key question: is it better to develop provision which is as inclusive as possible, or should we focus on tailoring provision to more specific needs and communities?

In this critical reflection, we'll discuss our experiences of developing both general and targeted provision for researchers in UK universities. We'll consider the advantages - and disadvantages - of each approach, before making some suggestions for researcher developers looking to strengthen their offering for research communities at their institution.

### **General Provision for the Wider Research Community**

What is most common in UK universities is the provision of more general professional development for researchers. At York and Leeds, for example, this takes the form of annual professional development programmes which researchers at all stages, as well as research enabling (or 'research adjacent') staff, can take part in, dipping in and out as they choose. The York Researcher Professional Development and Skills Programme offers training on a variety of different topics, originally inspired by the four skills domains outlined in the Vitae Researcher Development Framework (**Vitae, 2011**): knowledge and intellectual abilities, personal effectiveness, research governance and organisation, and engagement, influence and impact. At the University of Leeds, a similar programme, BOOST, runs throughout the year covering a range of topics related to career development, covering both academic and non-academic careers. Both

programmes are aimed at very broad audiences, focusing particularly on postgraduate researchers (PGRs, mainly PhD researchers) and early career researchers (ECRs) but often open to anyone. Attendees pick and choose which sessions they wish to attend based on their individual needs.

There are a number of clear advantages to this approach. Most importantly, it is inclusive by design and empowers researchers to select opportunities specific to their development needs and prior experience. Selecting your own professional development opportunities from a broad range of options is ultimately likely to lead to higher engagement and motivation as researchers are able to target specific areas where improvement is needed, choose preferred learning formats and adapt as needed to changing goals or interests. A caveat of this approach, however, is that it assumes researchers are motivated, or even able, to proactively identify their own development needs and browse a broad range of options.

General provision recognises that diversity exists even in groups of researchers who may be matched on specific criteria, such as years of experience, job title or funding status. As such, this approach avoids making assumptions about development needs based on narrow criteria. Opportunities open to 'everyone' also facilitate networking and knowledge exchange across disciplines and structural hierarchies, something that universities traditionally lack and that researchers often say they would like.

Practically, general provision is more resource effective. For smaller teams, or in some cases individual researcher developers, tailored provision is simply not an option. For this reason, general provision is the most equitable solution, avoiding exclusive opportunities for a specific group of individuals. This generalist approach is arguably more realistic in terms of time, resources and effort, allowing institutions to cater to as many researchers as possible, broadening access to such opportunities as far as possible. It also allows researchers not to get 'tied into' certain parts of their identity as a researcher, allowing them to think about broader opportunities. At Leeds, for example, the BOOST Programme allows researchers to consider a wide range of career opportunities, both within and outside of academia. Unfortunately, there is persisting stigma and many researchers struggle with the emotions associated with leaving academia (**McKenzie 2021**), such as feeling that it means that they have 'failed' in some way. With this in mind, offering a broader spectrum of opportunities for professional development allows us to signpost the different options at hand without making assumptions, seeming judgemental, or trying to guide researchers in one particular direction.

Recognising the many advantages of providing development opportunities for a broad audience, we suggest the following might help researcher developers make the most of the ‘something for everyone’ approach. Firstly, recognise that our true power lies in empowering researchers to help themselves and each other. Researcher developers can facilitate this by creating an environment for learners to be teachers through the exchange of experience and knowledge. This can be achieved in different ways, for example by facilitating regular group discussions as part of workshop design or through invitations to contribute more formally, such as on an expert panel. Arguably though, the most bespoke learning opportunities for researchers exist on-the-job, through informal and social exchanges. Therefore, one of the most powerful tools researcher developers can lend to researchers lies in being able to recognise and take advantage of ‘everyday’ on-the-job opportunities for professional and career development.

Embracing digital technologies and online learning is key to maximising the benefits of a ‘general provision’ approach to researcher development. While there are benefits to convening in person, post-pandemic researcher development shows no sign of exclusively returning to the full or even half day model of delivery, and it should not. Researchers unfortunately still face many different barriers when it comes to accessing opportunities for professional development; whether that be for example, the challenge of scheduling development opportunities around international field or lab-based work, or the challenges of getting onto campus when managing caring responsibilities and/or health issues and disabilities. Contrasting with in person delivery, online learning is inclusive by design, accessible to a larger group of researchers and also allows the learner to skip ahead and flexibly schedule bitesize sessions as needed. The Prosper Portal<sup>1</sup> provides an excellent example of this approach. Part of the wider Prosper project led by the University of Liverpool in collaboration with the University of Manchester and Lancaster University, the Prosper Portal is a freely available, online hub containing a range of learning and development resources for researchers, principal investigators/managers of researchers and for institutions. The overarching aim of Prosper is to take a new approach to postdoctoral career development enabling researchers to thrive in multiple career pathways. Recognising the huge time demands of creating high quality, self-directed resources, the Prosper project demonstrates a powerful approach to researcher development - enabling all stakeholders to benefit from shared expertise and collaborative strength.

Finally, in taking a generalist approach, researcher developers are extremely well placed to facilitate opportunities for peer, or social learning, for example using tried and tested initiatives such as coaching,

mentoring, buddying and action learning sets. Such development opportunities go beyond the skills and attributes that can be 'taught' in a formalised learning setting. The provision of social-learning opportunities, such as coaching and mentoring, is a highly effective approach to personalising and tailoring development at an individual level, recognising the diversity of researcher experience and variety of cultural 'pockets' that exist in higher education institutions (**Guccione & Hutchinson, 2021**). Facilitating opportunities for social learning also enables researchers to direct the focus and content towards topics and subject areas most relevant and pertinent to them, rather than taking a top-level approach designing provision based on what researcher developers and institutions perceive to be important or a current strategic priority (**Zacher et al., 2019**). Furthermore, social-learning initiatives create conditions for researchers to get to know others, join or build common communities and ultimately create a sense of belonging.

### **Targeted Provision for Specific Researcher Communities**

General provision is the norm in most UK universities; however, by focusing exclusively on everyone, there is the risk of alienating or excluding certain groups, who may have particular development needs. As we have seen in our own professional experiences, targeted provision for specific groups of researchers, can also provide a vital source of support and development.

The University of York has piloted and implemented one such intervention: the York Fellowship Programme (YFP). Officially established in 2020, YFP offers a programme of pre- and post-award support for prospective and current Research Fellows at an early career stage. Supported by a full-time Researcher Developer with a focus on Research Fellows, this role provides support, guidance and advice at all stages of a fellowship.

YFP was established both to increase York's success with fellowship applications and to ensure that both prospective and existing Fellows' development needs were met. Before an application is even started, applicants can attend information sessions, make use of tailored resources for developing an application, access 1:1 support from the Fellows' Researcher Developer, apply for additional funding to bolster the Department/School's financial support, and receive detailed peer review. Applicants can also access mock interviews with senior academics with experience of the scheme at hand.

When an applicant is awarded a Fellowship, they become a member of the York Fellowship Community, a growing group of more than 100 early career Fellows across all three Faculties (Science, Social Science, and Arts and Humanities). Supported by the Researcher Developer, an Academic

Fellowship Lead, and Representatives from the Fellowship Community, Fellows receive regular communications and invites to meetups and social opportunities. The Community particularly benefits from a calendar of termly professional development events, tailored to Fellows' needs.

YFP also includes support for individual Departments and Schools, including both academic and research support staff. This includes support with internal selection processes, the sharing of best practice, and additional resources and guidance. All involved, from the applicants to those supporting them, are able to access bespoke guidance, support and resources.

YFP offers a more tailored approach to professional development, recognising the unique needs of research fellows and acknowledging the challenges involved. What all undoubtedly benefit from, too, is the sense of community engendered by the regular programme of communication and professional development. Fellows at York have noted that the feeling of support from the very beginning of the application process, through to the Fellowship itself, has helped them to feel that they are not alone. Putting time, money and resources into this particular community has allowed us to acknowledge their wants and needs, and provide the kinds of professional development resources and support that is most beneficial. From a researcher developer perspective, too, being able to focus on one particular audience is also incredibly useful, building expertise and focusing efforts on thoughtful, meaningful support and development opportunities for a specific group.

This is the real power of targeted provision: providing opportunities tailored to specific communities, helping them to manage the challenges and potentials of their position, and giving them access to peer support from others in a similar position. It is little surprise, then, that York saw fit to continue the initial pilot scheme, having committed to funding this initiative until 2027 at the earliest.

Yet our experience of running YFP has not been without issue. Even within this fairly niche group of researchers, it has become apparent that they have differing needs. Fellows in the Sciences, who have often already held a number of postdoctoral positions, are almost at a different career stage than their peers in the social sciences and humanities, many of whom are not long out of their PhDs. Based on disciplinary differences alone, this group is sometimes less similar than they may first appear, and even Fellows at similar career stages may be different in every other way, requiring different kinds of professional development support.



At York, providing such tailored, in-depth support has been possible because the University has been willing and able to put time, money and resources into supporting this community, even providing a full-time member of staff to manage the daily workload associated with YFP, supported by the University's Fellowship Coordination Committee who can offer advice and support from across the University.

However, even with a full-time member of staff, the workload associated with this level of support has quickly increased, and the costs of the YFP have increased with it. For smaller institutions or those with smaller budgets for professional development, this level of provision is unrealistic given the relatively small size of the fellowship community in most universities.

One way of getting around such an issue is by bringing together researchers in similar circumstances from different universities. Some funders have facilitated such networks already; the British Academy recently successfully piloted an Early Career Researcher Network for ECRs in the humanities and social sciences, with researchers joining one of three regional hubs (**Meagher & Kettle, 2022**). The National Association of Disabled Staff Network (**NADSN, n.d.**), allows what are often small networks within institutions to come together, share and pool resources. Such cross-institutional networks can allow for the kinds of community-building and sharing of best practice which may not be feasible within an individual institution alone. The UKRI Future Leaders Fellowship Development Network (FLFDN) has aspired to tackle this problem head-on, with the aim of supporting under-resourced universities to increase their success with the FLF funding scheme.

Targeted provision can provide researchers with a sense of community, access to others in a similar position, and the opportunity for professional and career development tailored to their needs. However, as we have seen at York, such provision requires a huge investment of time, effort and money. Certain researcher communities may also be seen as too niche, or representing too few researchers, for universities to be able to commit the required resources.

We believe that bringing together smaller communities from different institutions, whether instigated by funders, universities or the researchers themselves, is one way of ensuring equality of opportunity, regardless of home institution, and allows universities and researchers to benefit from working together, not merely sharing best practice but actively co-creating communities of practice. In doing so, researchers who are part of more niche communities (such as independent research fellows) can be part of broader, cross-institutional communities, supported as they navigate the transitions of an academic (or non-academic) career.

## **Conclusion**

At the beginning of this paper, we posed a key question: is it better to develop provision which is as inclusive as possible, or should we focus on tailoring provision to more specific needs and communities?

The key takeaway from our experiences is that both general provision, offered to all, and targeted provision, offered to a few, have their own advantages. General provision, when done well, is inclusive and offers researchers the broadest range of opportunities possible, while targeted provision allows us to provide specific audiences with interventions and opportunities tailored to their needs. If all of our provision is general, we lose the chance to target support we know is needed by communities with specific needs. If all of our provision is targeted, we run the risk of pigeonholing our researchers and assuming their needs based on their career stage or status. Covering both specific and general provision allows us to cast the net as broadly as possible.

The flexibility of our roles means that it is possible to provide both kinds of provision, but this is not possible without a big investment of time, effort and resources. Whether general or targeted provision, there is a need to pool resources and work together across institutions. As many of the examples mentioned in this paper show, there are some excellent resources freely available online already. There are a number of public fora at which to share best practice; conferences such as the International Research Culture Conference, the Researcher Education and Development Scholarship (REDS) Conference, as well as Vitae's annual conference, provide effective platforms for researcher developers to showcase and facilitate engagement with open-access resources and to raise awareness of larger collaborative projects. However, we would urge researcher developers to go one step further, actively working to co-create resources, as opposed to just passively sharing examples. There is still work to be done to collaborate more closely between institutions, learning from and with one another, avoiding duplication of effort, making best practice more visible, and sharing what hasn't worked, as well as what has.

In short, our recommended approach can be encapsulated in the phrase 'the more the merrier': the more we have these conversations and collaborations between universities, the better we're able to serve our researcher communities. Given broader moves in research culture to encourage researchers to privilege collaboration over competition, why shouldn't researcher developers do the same?

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All the best,

Megan is Head of the Building Research and Innovation Capacity (BRIC) Team, University of York. The BRIC Team supports researchers at York by facilitating the development of a positive research culture, and providing a range of professional development opportunities. Megan is also a co-investigator on the Valuing Voices for Equitable and Responsible Research project, funded by the Wellcome Trust.



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## Endnotes

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<sup>i</sup> See: <https://prosper.liverpool.ac.uk/>.

# Enhancing Research Culture at Warwick Medical School (WMS): A community-driven, values-based vision towards enhancing WMS's research culture

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## Abstract

*Understanding ‘what’ research culture means to members of Warwick Medical School’s (WMS) diverse community and how it can be enhanced is important to ensuring that all can flourish and deliver the best quality, world-leading research. Through active consultation and engagement with staff and students, we coproduced an action-focused WMS Enhancing Research Culture (ERC) Roadmap.*

*We hosted three (three-hour) semi-structured café-style conversations open to students and staff (both researchers and research enablers – that is, non-academic colleagues involved in the development and delivery of research). In Café 1, participants explored what ‘research culture’ meant to them. Cafés 2 and 3 built on these findings, exploring what could change, how, and when. A thematic analysis of findings was undertaken after each event, with findings shared and built on at each café. A five-year plan was crafted. The roadmap represents a community-driven, co-produced and values-driven understanding of the importance of a positive and inclusive research culture, which builds on existing initiatives and describes associated actions for change.*

**Keywords:** enhancing research culture; community engagement; co-production; values-driven culture

## Introduction

To improve the culture of a community, we need to understand what ‘culture’ means to that community, where change might be required, how this can be achieved and by whom, and ultimately, how that change can be measured. At its simplest level, ‘research culture’ can be described as the environment or ecosystem in which research and innovation takes place on the way to delivering excellence in research; it embraces everything that researchers or research enabling staff (‘research enablers’) do that isn’t research. However, there are inherent complexities in defining research culture. By virtue of the intrinsic diversity in research teams, research settings, and research activities, research culture is a multi-faceted and multi-level concept. It is influenced and underpinned by a range of personal and professional behaviours, values, expectations, attitudes, and norms (**Royal Society, 2024**) experienced across the research journey, career pathways, and across communities.

Recent years have witnessed the emergence of a more holistic approach to thinking about what constitutes research excellence, with national and international research funders and policy makers highlighting the importance of research culture (for example, UK Research and Innovation (**UKRI, 2024a**) and The Wellcome Trust (**Wellcome Trust, 2024a**)). This is further evidenced in a revision of the UK’s Research Excellence Framework (REF2029) to include an assessment of research culture and the future capability of institutions (people, environment, and culture) (**REF2028; REF2029; Hill, 2024**). This shift recognises the importance of promoting healthy, dynamic, and inclusive research environments which ensure that all members of the community – irrespective of professional background, career stage, gender, race, or other characteristic – are valued and empowered in the delivery of world-class research that really makes a difference. Understanding what a dynamic and successful research culture looks like, and where changes are required, is therefore important.

Established in 2000, Warwick Medical School (WMS)<sup>ii</sup> is a vibrant research and teaching organisation, which embraces a diverse community of staff (including clinical and non-clinical academics, research and teaching fellows, postdocs, technicians, research assistants), research teams, research enablers, and students (undergraduate, MBChB, and post-graduate researchers). Understanding the needs and experiences of this heterogeneous community is important to informing a positive and inclusive research culture which resonates with and is responsive to the communities needs and values. Through a model of active, long-term, community engagement, we sought to engage with our community to better understand their views on research culture and to propose ideas for

how this could be enhanced at WMS through the co-production of a research culture roadmap.

## **Methods**

Informed by the World Café (**World Café, 2024**) and Wellcome Trust research culture café toolkits (**Wellcome Trust, 2024b**), and funded by a Warwick University (Research England) Enhancing Research Culture Grant<sup>iii</sup> we hosted a series of café conversations to explore the opportunities, aspirations, and challenges for enhancing WMS's research culture. The overriding aim sought to inform the ideal 'future' research culture of WMS by addressing the key research question: 'What does the WMS Research Culture of 2028 look like and how do we get there?' A key output was the co-production of a community-derived roadmap towards a positive, inclusive, and supported research culture at WMS.

### *Who was invited and how?*

Throughout February and June 2023, there was an open invitation to all WMS research and teaching staff and students. Staff could be clinical and non-clinical academics who were directly involved in research; research enablers – that is, non-academic colleagues contributing to the wider research effort through the development and delivery of research; or as users of research – for example, in the delivery of evidence-based teaching. Both undergraduate and post-graduate (taught or research) students were invited. To actively encourage a diversity in participants from across the school, the 'Research Culture Cafés' were advertised via a range of channels, including school staff meetings, school newsletters (staff and student facing), local networks such as the Early and Mid-Career Academic Staff development network (EMCAS), posters (online) and flyers (with hard copies posted across the school). Colleagues were also encouraged to 'bring a colleague' to encourage wider engagement.

### *How were the cafés run?*

Three semi-structured, facilitated sessions were held off-site from WMS through February, April, and June 2023. Sessions were hosted in the morning or afternoon to accommodate different working patterns; lunch was provided. Participants could attend one, two or all three events. Each session lasted up to three hours and included both large and small group (maximum of 10 per small group) discussions. Each small group included a facilitator and scribe who took anonymised notes. Participants captured key messages on flip charts. After each small group discussion, the key findings were presented back to the room in advance of larger group discussions.



### *Research Café 1*

After an initial general introduction to the concept of research culture, the purpose of the culture cafés, and ways of working, participants were allocated up to forty-five minutes to explore the following questions in their small groups:

- *What does research culture mean to you?*
- *When thinking about research culture, what are the issues, challenges, and opportunities that come to mind?*
- *What are the top five challenges, and can these be prioritised?*

Participants were invited to explore where good practice was already happening at WMS and ideas for change. The key issues were captured on a flip chart, supporting feedback to the large group and further discussion around these key questions.

Following a short break, participants were again asked to work within their small groups (a further forty-five minutes) to explore their prioritised challenges and to consider the following questions:

- *What are the opportunities for change/development/enhancement?*
- *Who could make the change?*
- *How could change be made?*
- *When could changes be made?*
- *What does a 'good' outcome look like?*

As a bonus question, participants were asked to consider: 'If there was one thing they could do tomorrow to support their idea, what would this look like?'

A final 25 minutes was allocated to small group feedback followed by large group discussion to explore the key findings and suggestions.

### *Research Cafés 2 and 3*

In advance of Cafés 2 and 3, a thematic analysis of Café 1 data was undertaken (Braun & Clarke, 2021). Data were independently reviewed by KH and AK, informing the generation of key themes which were then discussed and developed further. The findings were shared with, and feedback sought from, the core group of co-applicants.

The proposed findings from Café 1 were shared with participants in both Cafés 2 and 3. Through both small and large group discussion, participants sought to build on and explore the proposed themes ('values') and associated definitions, seeking to inform a better understanding of the challenges and opportunities which would inform an enhanced research culture at WMS. The following questions were again proposed as an aide memoir to the discussions: 'What examples of good practice are already

happening?', 'What are the opportunities for change/ development/ enhancement?', 'Who can make the change?', 'How can the change be made?', 'When can the change be made?', 'What does a "good outcome" look like?'

Feedback from Café 2 was further shared with participants in Café 3, supporting an iterative development of the meaning of research culture to the WMS community, and key recommendations and priorities with which to inform the development of a WMS Enhancing Research Culture Roadmap. We worked together with a visual artist (Nifty Fox<sup>iv</sup>) to support the visual representation of the key messages from the data analysis.

*Launch event*

In July 2023, the findings from the cafés were collated and shared with the WMS community via a two-hour hybrid event. This included a power-point presentation of the key findings from the research culture cafés. Key findings and recommendations were also shared with the WMS Senior Management Group.

**Results**

Three research culture cafés were hosted between February and June 2023, with an adjusted total of 80 staff (researchers (41/80; 51%), research enablers (23/80; 30%)), and students (16/80; 23%) from across the WMS community participating in the conversations (**Table 1**). Most participants were female (22 males/ 65 females) and, except for three participants (one research enabler and two students (one UG, one PGR)) who participated in two cafés, most participated in just one session. Further detail with regards to the diversity of participants was not collected.

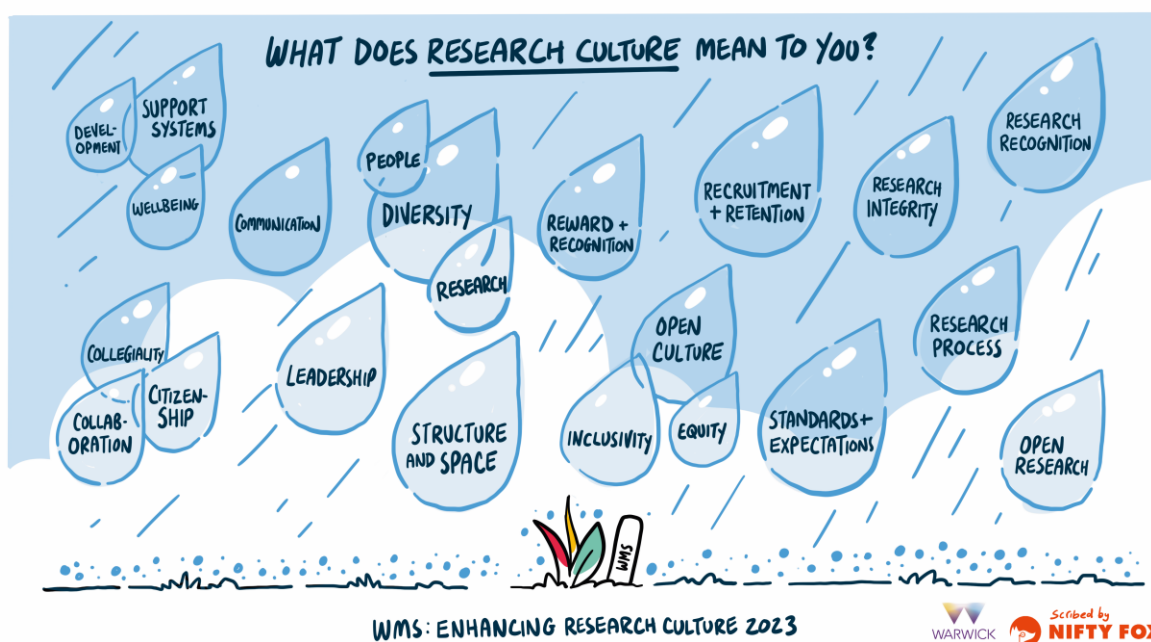
*Table 1. Participants in the WMS research culture cafés.<sup>v</sup>*

	<i>Café 1</i>	<i>Café 2</i>	<i>Café 3</i>	<i>Adjusted Total<sup>d</sup></i>
<b>Staff:</b>				
Researcher <sup>a</sup> (ECR <sup>b</sup> )	12 (5)	14 (2)	15 (7)	41 (14)
Research Enabler <sup>c</sup>	9	6	9	23
<b>Students:</b>				
PGR	8	2	3	12
UG (including MBChB)	0	4	1	4
<b>Total<sup>e</sup></b>	<b>29</b>	<b>26</b>	<b>28</b>	<b>80</b>

### Research Culture Café 1: What does research culture mean? A thematic analysis

When asked to consider what research culture meant to our community, a broad range of concepts were described which were seen as important in feeding a positive research culture where all could flourish and grow (Figure 1).

Figure 1. What does 'research culture' mean to you? Overriding themes (Research Café 1).

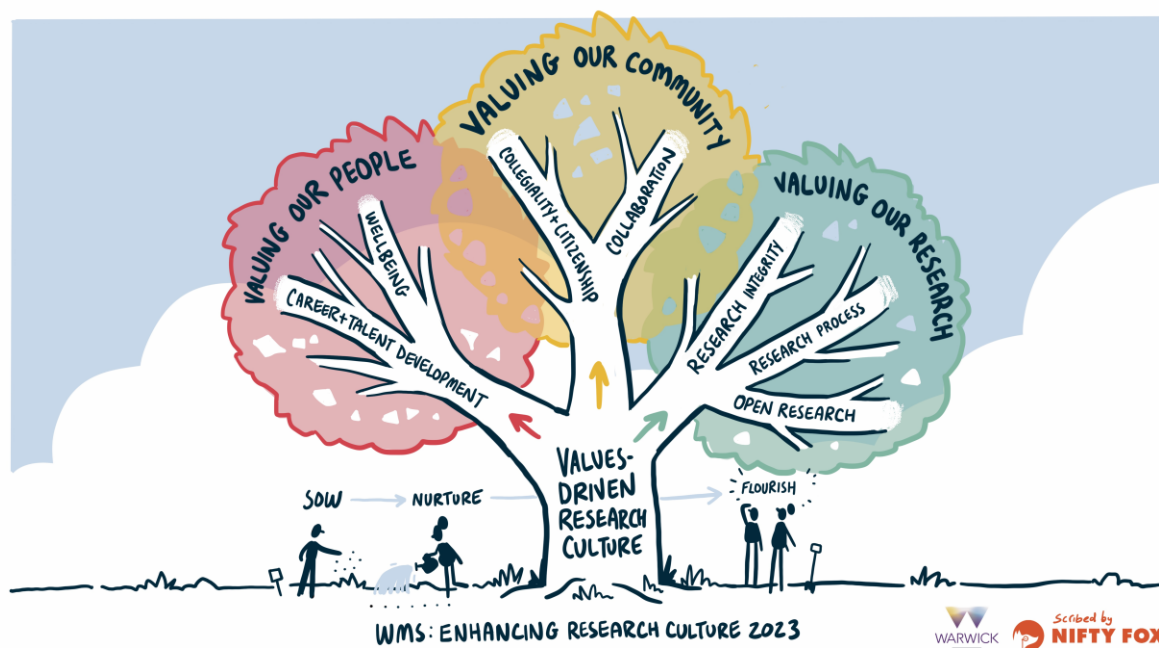


These included the importance of support systems, collaborative working, greater transparency and communication, and a more inclusive approach towards reward and recognition which recognised both the diversity of teams and output.

Further analysis informed three key themes, with associated sub-themes, underpinning a 'values-driven' research culture: valuing our People, our Community, and our Research (Figure 2).

Exploration with our community highlighted pockets of great activity and initiatives at WMS which were actively seeking to help promote an enhanced (research) culture. For example, the Ambassadors for Better Research Culture (ABRC) group<sup>vi</sup> with its focus on the lab-based community and the Early and Mid-Career Academic Support network (EMCAS)<sup>vii</sup>. However, as illustrated in Figure 2, there was clear evidence of siloed working, a need for enhanced communication, and gaps which evidenced potential opportunities to further enhance the (research) culture at WMS.

Figure 2. What does 'research culture' mean to you? Pockets of activity across three core 'values-driven' themes (Research Café 1).



*Research Culture Cafés 2 and 3: What do these gaps look like and what needs to happen to facilitate positive change?*

In our second and third café conversations, participants were encouraged to build on the findings from the first café to better understand the challenges and opportunities that needed to be addressed or delivered on to underpin an enhanced research culture at WMS. The proposed values-driven research culture was well-received by the participants, supporting the three core Values. For each Value, sub-themes and associated definitions were developed and refined.

*Valuing our people*

Within 'Valuing Our People', two sub-themes were confirmed which embraced both the importance of 'wellbeing' (**Box 1**) and supporting 'personal and professional (career and talent) development' of all staff and students (**Box 2, Figure 3**).

*Box 1. Wellbeing – definition and associated objectives.*

**WELLBEING:** Promoting the centrality of wellbeing across WMS through the provision of safe, supported, and inclusive (research) environments where wellbeing is valued and championed, enabling people and their ideas to flourish.

**WMS RC Objective 1:** To provide a safe, supported, and inclusive research environment for all staff and students.

The centrality of 'Wellbeing' was to be promoted through the provision of safe, supported, and inclusive (research) environments where wellbeing was valued and championed, thus enabling people and their ideas to flourish (**Box 1**).

Career aspirations and decision-making, which included both personal and professional development, was to be supported for all (**Box 2**).

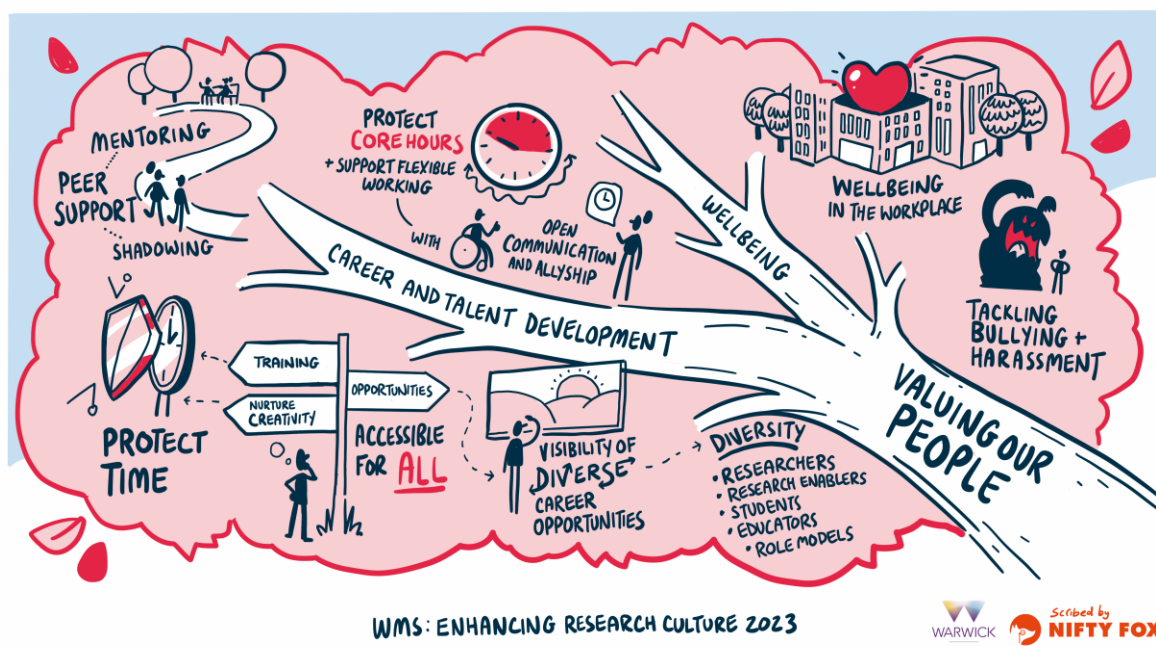
*Box 2. Career and Talent Development – definition and associated objectives.*

**CAREER and TALENT DEVELOPMENT:** Supporting career aspirations and decision-making, including personal and professional development.

**WMS RC Objective 2:** To support career aspirations and personal and professional development.

**WMS RC Objective 3:** Support opportunities for innovative thinking, creativity, and the pursuit of new ideas.

Figure 3. Valuing Our People – Wellbeing, and Career and Talent Development.



Recognising and supporting the wide diversity of staff and students across our community was positively embraced. Use of the term 'research enablers' for non-academic colleagues was supported – for example, embracing clinical trial and project managers to name but a few. Moreover, highlighting a diverse range of role models was to be championed – and this should not just be limited to those in senior leadership roles. Leadership and who made a 'good' role model had many guises.

Building on the theme of diversity, was the importance of making visible the range of possible career opportunities for all. This could include secondments, new collaborations, redeployment, and shadowing opportunities. However, job security, or rather precarity, was a major concern, particularly for those on fixed term contracts. For some, this negatively impacted on their ability to fully engage with the role and jobs were often selected for contract duration as opposed to career development.

Initiatives to attract, develop, and retain talented people were seen as essential to ensuring that people could enjoy a rewarding and sustainable career at WMS. Moreover, such initiatives would ensure that WMS built on existing strengths and the development of a workforce aligned with its future ambitions including the delivery of world leading research.

The importance of protected time to engage with new opportunities, training, and opportunities to ‘think’ or where creativity, discovery and innovation could be nurtured was paramount – for example, to develop new grant applications or collaborations. A culture of ‘life-long learning’ and a ‘growth’ mind-set was to be promoted. The value of peer support and opportunities for mentoring – for all staff and students – where people could engage in meaningful conversations and be helped along their journey was prized but felt not to always be available.

Open communication with line managers was highly valued and important for communicating concerns, exploring working patterns, and supporting flexibility where possible. Allyship and peer support was crucial to empowering colleagues, for example, where there were instances of core working hours not being appropriately considered.

Wellbeing in the workplace encapsulated several concepts ranging from feelings of vulnerability and how different lifestyle/work choices were valued, through to bullying and harassment and the importance of providing ‘safe spaces’ where people could raise concerns without fear of negative consequences. An appreciation of the diversity of needs across the research community, and the value of identifying and supporting different ways of being successful, were considered essential to understanding what effective support systems might look like.

An overview of actions and opportunities for change and development proposed by the community are summarised in **Box 3**.

**Valuing our People: Overview of actions**

**Wellbeing:**

- Build on the wellbeing expertise at WMS and links with departmental and institutional initiatives to develop a range of Wellbeing initiatives.
- Bullying and Harassment: Establish a working group which enhances linkage with institutional provision to enhance support (for example, 'Report and Support').
- Promote transparency in conversations between staff and managers around flexible working and the expectations of roles.
- Promote WMS values including, for example, a revision to the WMS Induction template.

**Career and Talent Development:**

- Raise the visibility of diverse career opportunities for all.
- Create a 'one-stop shop' resource for training provision by working with central University and the WMS community to grow and highlight accessible and diverse training provision for researchers, research enablers, staff, and students across WMS.
- Develop training and peer support for Early and Mid-Career Academic Staff.
- Develop training and peer support for Research Enablers.
- Develop and implement a PGR supervisors' training and support programme that is mindful of the supervisor diversity at WMS.
- Support meaningful career conversations for all.
- Promote and build on existing mentoring peer support and shadowing opportunities for all.
- Explore opportunities to protect time for creativity, focused activities, and strategic thinking.
- Explore career pathways and opportunities that reduce precarity associated with fixed-term contracts for researchers and research enablers.

**Valuing our community**

Within 'Valuing Our Community', just one over-riding sub-theme was proposed: that of collegiality, citizenship, and collaboration. This valued the importance of embedding a spirit of collegiality, citizenship and collaboration for all staff and students by developing a supportive and engaged community in which all can flourish (**Box 4, Figure 4**).

In 'Valuing Our Community' we are seeking to create a 'community of excellence' that supports, drives, and motivates all towards reaching their full potential and delivering the best research, whilst also enjoying the journey! (**Figure 4**) A positive, inclusive, and respectful culture was central to this.

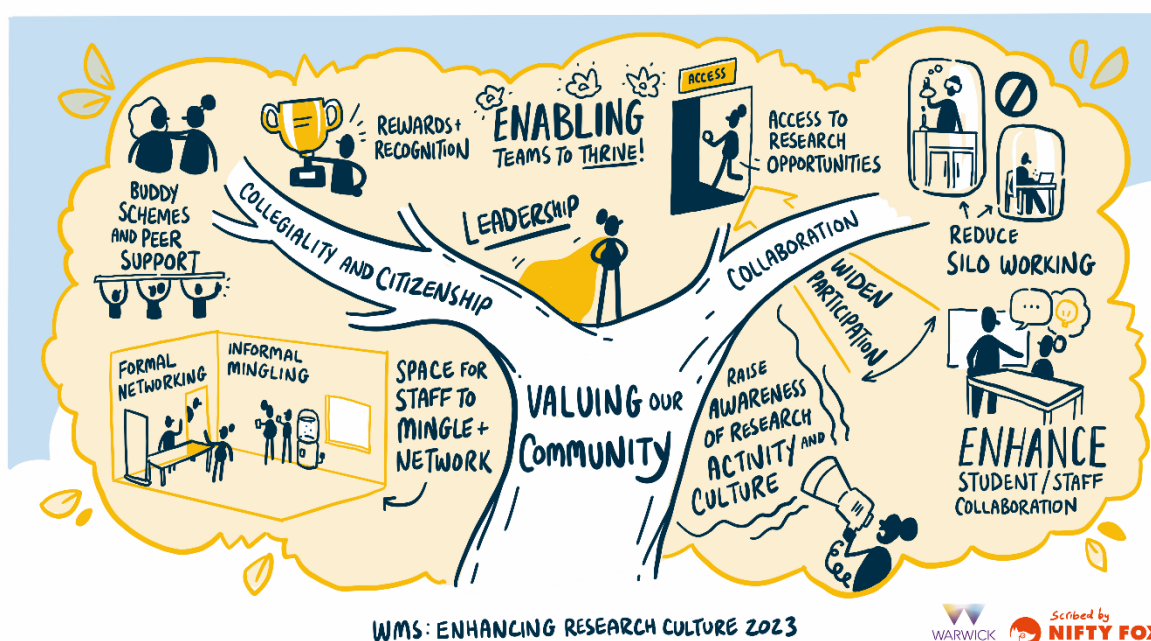
**COLLEGIALITY, CITIZENSHIP and COLLABORATION:** Embedding a spirit of collegiality, citizenship, and collaboration across WMS for all staff and students by developing a supportive and engaged community in which all can flourish.

**Objective 4:** To provide and promote opportunities for active engagement across the school.

**Objective 5:** To recognise and reward where colleagues actively engage with the community, helping each other to succeed.

**Objective 6:** To enhance opportunities to develop strong relationships and collaborative opportunities across the school, the university, and beyond.

Figure 4. Valuing Our Community – Collegiality, Citizenship, and Collaboration.



However, the physical location and set-up of WMS, the often-perceived lack of connectivity across the three divisions and across different functions, and the inequity in access to ‘social space’ impacted negatively on networking and opportunities to encounter and engage with others. A consequence of this was ‘siloe working’ - supported by quotes such as ‘I don’t know what people in the other buildings are doing’.

There is a clear need to address these challenges through, for example, increased opportunities for both formal and informal networking activities where research activities and opportunities for staff and students across the school, the university, and beyond can be shared, stimulated, and celebrated, and which will seek to underpin excellence in research and innovation and in research-led education.



And whilst hybrid and flexible working was highly valued for supporting access to increased opportunities and promoting the diversity of talent evident across the WMS community, normalising in-person social interaction was viewed as important.

A lack of visibility of potential research supervisory opportunities combined with workload concerns expressed by staff ('juggling research and teaching commitments') also spoke to the need for a targeted effort to enhance staff-student collaborative opportunities.

Moreover, greater support for supervisors - of students and early/mid-career researchers – was to be welcomed.

Workload was cited as a potential barrier to people participating in opportunities to engage with others in more collegiate and supportive ways. Recognising, protecting time for, and rewarding collegiate activities should be afforded a higher profile. For example, 'buddying schemes' where established colleagues supported new starters, and peer support initiatives were valued. Colleagues who actively contributed to a positive research culture could be celebrated through peer nominated 'Culture Awards'.

In response to the question 'what one thing could you do tomorrow?', and reflecting on how to be more collegiate, colleagues suggested that one could simply 'Knock on the door of a colleague and ask them how they're doing!'

The importance of inclusive and supportive leadership – at all levels – was recognised. However, it was recognised that people in leadership positions should be appropriately supported and provided with the right skills to 'unlock the potential' within their teams – thus enabling the many teams at WMS to thrive.

Enhanced communication across all facets of the school was viewed as central to many of these endeavours.

An overview of actions and opportunities for change and development proposed by the community are summarised in **Box 5**.

*Box 5. Valuing Our Community: overview of community-derived actions.*

**Valuing our Community: Overview of actions**

- Promote networking and both formal and informal collaborative opportunities across the research community.
- Establish a community-driven ‘Research Culture - Rewards and Recognition’ initiative.
- Improve the connectivity between research and education across WMS through improved alignment, greater transparency of opportunities, and cross-fertilisation that enhances both student and staff experiences.
- Engage with the community to establish an informal ‘Buddying Scheme’ for new starters.
- Increase visibility of Research, Research Opportunities, and Research Culture Activities.
- Grow the WMS/SLS ‘Enhancing Research Culture Community of Practice’ to share best practice.

**Valuing our research**

Our third value spoke to the importance of ‘Valuing Our Research’. Here, three sub-themes were described which valued the process of undertaking research, research integrity and the importance of open research (**Boxes 6-8, Figure 5**):

Valuing the Research Process recognised the importance of embedding clear and fair approaches for the way in which research is conducted, supported, recognised, and rewarded (**Box 6**).

*Box 6. Research Process – definition and associated objectives.*

**RESEARCH PROCESS:** Develop and embed clear and fair approaches for the way in which research is conducted, supported, recognised and rewarded

**Objective 7:** Embrace a holistic view of different roles, contributions and outputs linked to the research endeavour

**Objective 8:** Provide a platform to nurture innovation and creativity.

Although ‘Research Integrity’ and ‘Open Research’ were not discussed at length by participants in the research culture cafes, it is evident that the conduct of rigorous and ethical research is essential to the production of high-quality research, and hence research excellence (**Boxes 7 and 8**). Moreover, open research spoke to the importance of research visibility, impact, and global reach.

*Box 7. Research Integrity – definition and associated objectives.*

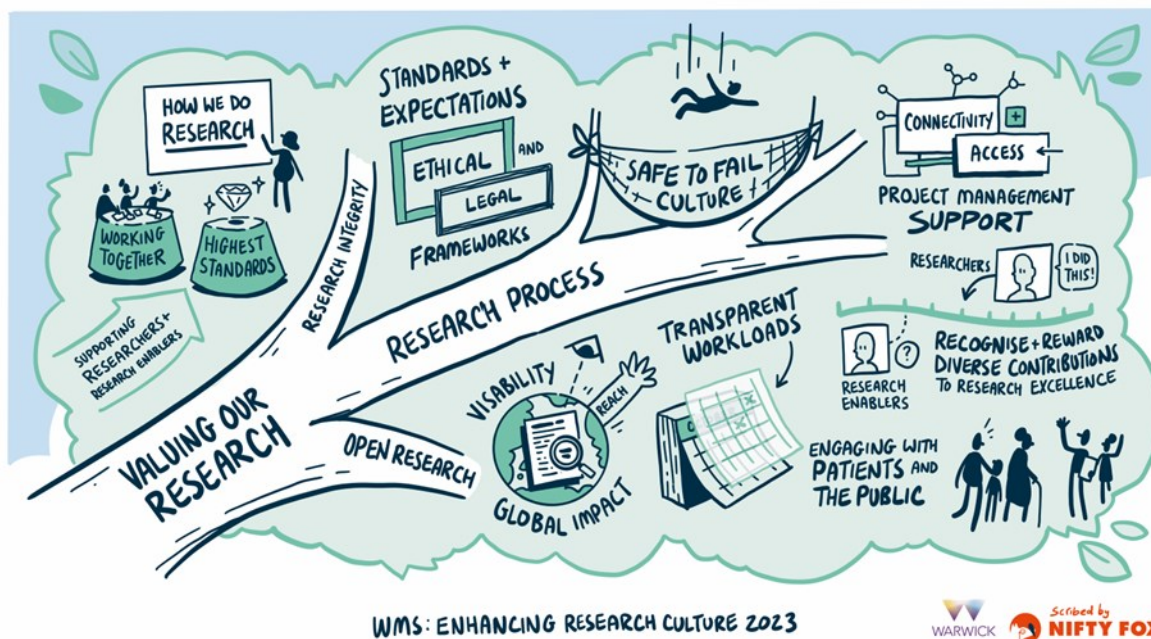
**RESEARCH INTEGRITY:** Support and facilitate the conduct of rigorous and ethical research to enhance research quality and trust

**Objective 9:** Promote and embed inclusive research integrity training across the community.

**OPEN RESEARCH:** Facilitate, promote and reward open research

**Objective 10:** Upskill our community in open research practices. Providing accessible and inclusive training in the varied components of open research to future-proof our research, enhancing visibility, reach and global impact.

Figure 5. Valuing Our Research – Process, Integrity, and Open Research.



The realities of the research process spoke to the importance of normalising ‘failure’ and establishing a ‘safe to fail’ culture where the learning experience from ‘failure’ was valued. Making the metrics around success/failure more transparent, ensuring that appropriate support networks and learning opportunities were available, and showcasing the highs and lows of the research journey were important components of this.

It was recognised that various processes and systems could be overly burdensome and time-consuming which could result in friction and detract from opportunities for innovation and creativity. Appropriate project management support was proposed as a potential solution – but inequities in access to this support were observed. Greater guidance with regards to the range of potential support – that is, from light touch through to fully-costed support – and having named people for specific activities, were proposed as ways of increasing both access and connectivity. However, the importance of connectivity also extended to project managers, to ensure that they were not working in isolation.

The community recognised the current limitations and inequities around the way in which research excellence is currently defined, and how different contributions are recognised, valued, and rewarded. For example, whilst it is relatively ‘easy’ to showcase the success of a ‘researcher’ in terms of papers published and grant income, this was not so evident for research enablers. Engaging with the WMS community to explore, broaden and establish a shared definition of research excellence and innovation which valued the diversity of research, who is involved, and how research is delivered was viewed as a priority. This could include, raising the profile, visibility and reputation of researchers and research enablers across our community and promoting a more holistic understanding of the varied contributions to research excellence. For example, ‘why’ was the research brilliant? How did it change things? And who contributed to this research endeavour?

Workload demands were frequently mentioned and were impacted by a range of factors. In the context of research process, for example, mismatches between ‘allocated’ and ‘actual’ time to deliver programmes of research were described, contributing to work ‘overload’ and anxiety. For those on research only contracts, greater transparency with regards to the requirement to engage with teaching opportunities was called for.

Whilst not discussed at length by participants, there is a need to upskill our community in open research practices. Providing accessible and inclusive training in the varied components of open research would seek to future-proof our research, enhancing visibility, reach and global impact. We will actively seek to align with research culture initiatives championed across the University of Warwick,<sup>viii</sup> whilst drawing on examples from other institutions, including the UK Research and Innovation (UKRI) Open Research guidance (UKRI, 2024b).

Research integrity spoke to the importance of working together to ensure that all aspects of our research are conducted to the highest standards of academic rigour, and with reference to appropriate ethical, legal, and professional standards and frameworks. And whilst basic research integrity training is mandated for all researchers, this appears not to be the case for research enablers. Inclusive training and activities to promote and embed research integrity and good research practice into how we do research are required across the community should be prioritised. The role of ‘research integrity champions’ should be explored.

Finally, the importance of active engagement with patients and the public was described – and spoke to all components of how we value our people, value our community, and value our research. Within the context of research, for example, colleagues spoke to the importance of ensuring that systems in support of patient and public involvement and

engagement (PPIE) are both efficient and equitable; recognising and rewarding PPIE contributions to research excellence; and valuing the importance of PPIE in open research.

An overview of actions and opportunities for change and development proposed by the community are summarised in **Box 9**.

*Box 9. Valuing Our Research: overview of community-derived actions.*

#### **Valuing our Research: Overview of actions**

- Promote a 'Safe to Fail' culture that recognises, normalises and embraces 'failure' as part of research and the continual improvement process.
- Raise the profile of project management and its contribution to the research process.
- Engage with the WMS community to explore, broaden and establish a shared definition of research excellence which values the diversity of research, who is involved, and how research is delivered.
- Explore and evolve our Patient and Public Involvement and Engagement interface within research, education and our wider community.
- Provide accessible and inclusive training in the varied components of open research to future-proof our research, enhancing visibility, reach and global impact.
- Establish a network of Open Research champions.
- Explore opportunities to improve research conduct and reproducibility.
- Establish a network of Research Integrity champions.

## **Discussion**

Consultation with the WMS community has informed a community-driven, values-based understanding of the importance of a positive and inclusive culture, where our people, our community and our research are valued and where 'people are supported in reaching their full potential whilst also enjoying the journey' (Café 1 participant) (**Figure 6**).

This initiative has informed the development of the WMS Enhancing Research Culture Roadmap,<sup>ix</sup> a living document which builds on existing initiatives and pockets of good (research) culture activities across WMS and is responsive to the needs and experiences of our community in driving forward new initiatives.

Figure 6. WMS Values-driven Research Culture – Valuing our People, Our Community, and Our Research.



We believe that everyone can help to improve the working environment and hence research culture at WMS. As such, we have worked collaboratively with members of our community to propose changes that resonate with their needs and values, seeking to demonstrate a long-term commitment to active engagement and change, and an avoidance of tokenistic interventions. And whilst we recognise that participants reflected a relatively small proportion of our total staff and student cohort, aligning future culture-focused initiatives with the lived experiences described by WMS staff and students demonstrates engagement-led change which will, we hope, encourage greater and wider future engagement. We will build on the lessons of this community-engagement activity, continuing to work with colleagues and with change leaders across WMS, the University, and beyond – including our industry partners and the NHS – to drive long-term holistic cultural change, enhanced connectivity, and collaborative opportunities in the delivery of research ‘excellence with purpose’. Moreover, through sector-wide connections established through the National Centre for Research Culture at the University of Warwick,<sup>x</sup> we will build on our shared experiences, priorities for change, and evidence of good practice, collectively contributing to enhanced research culture across the wider community.

Understanding how to measure change in research culture – and measuring what really matters - is a priority for the wider community, with various colleagues exploring what this might look like at institutional level (for example, **University of Leeds, 2023**) and more broadly in relation to REF2029 (for example, **Curry, et al., 2022** and **Bali, 2023**). Community

engagement will be essential to ensuring that robust co-designed, outcomes-focused indicators – most likely a mixture of both quantitative and qualitative evidence – which are meaningful, contextualised, capable of detecting important change, and feasible are selected (**Corner, 2023**).

In conclusion, through implementation and evolution of our WMS ERC activities we aim to provide a safe, inclusive, and supportive research environment for all; nurture creativity and connectivity across our broad community; recognise and reward diverse contributions to research; and to inspire colleagues to do their best work, to embrace best practice, and improve the quality and reach of research. Moreover, in supporting colleagues to feel both empowered and fulfilled by the work that they do, we hope that they will enjoy the journey!

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The authors would like to extend their thanks to all staff and students who generously gave of their time and energy to participate in the WMS Research Culture Cafés. We would also like to thank Nifty Fox<sup>iv</sup> for supporting the presentation of the research culture café endeavours through the creation of such innovative and inspirational imagery. We would also like to thank members of the WMS Enhancing Research Culture Group (who were named co-applicants on the relevant grant submission) for their contributions to the study: Kate Seers, Danielle Groves, Kate Owen, Olanrewaju Sorinola, Paramjit Gill (Warwick Applied Health); Harbinder Sandhu, Keith Couper, Siobhan Kefford, Susanne Arnold, Jason Madan (Warwick Clinical Trials Unit); Andrew McAinsh, Cerys Currie, Rosemary Cragg (Biomedical Sciences).

### *Contributors*

KLH is the guarantor. KLH and AK wrote the manuscript. The design and analysis were led by KLH with AK. KLH and AK undertook the data collection and led on the data analysis, data interpretation and discussion of the findings. The data analysis, interpretation and discussion were shared with all co-authors and members of the WMS Enhancing Research Culture Group (who were all named co-applicants on the grant submission). All authors were involved in the development of this paper.

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*Ethics Approval*

The need for ethical approval was explored with the chair of the University of Warwick's Biomedical and Scientific Ethics Committee (BSREC). It was confirmed that ethics approval was not required.

Kirstie Haywood is a Professor of Health Outcomes, Warwick Medical School's deputy Pro-Dean People, Chair of the Athena SWAN/Gender Equality committee, and EDI representative on the SEM Faculty EDI forum. Institutionally, she is a member of Warwick's Silver Athena SWAN Self-Assessment Team and the Research Culture Forum. Her applied health outcomes research embraces a wide range of conditions and settings, including clinical trials and routine practice, with a particular interest in the active engagement of patients and public in research. A physiotherapist by training, Kirstie is married with two fabulous young boys who bring her much joy and fun!



Adele Kenny graduated from UCL with a degree in Anatomy and Developmental Biology and initially worked as research assistant in developmental neurobiology at Guy's Medical School. She then moved into the pharmaceutical industry, working on clinical trials in a range of roles across a variety of therapeutic areas. In 2014, she transitioned into academia and managed the daily running of the Integrated Academic Training programme (funded by NIHR) at Warwick University. In 2022, the medical school was awarded a grant from Research England's Enhancing Research Culture fund. Adele is now on secondment in the role of WMS's Research Culture Officer.

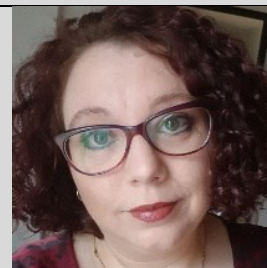




Katie Geary is a physician and part time post graduate researcher. Her doctoral thesis is in exploring patients' experiences of cross-cultural consultations; she is based at Warwick Medical School (WMS). She is a GP and Public Health consultant and has always had a keen interest in patient and public advocacy, practising these in the civilian, military, and corporate worlds. As a returnee to academic medicine, research culture was a fascinating subject to explore and through this work contribute to defining the values it should encompass and enhancing its future look.



Helen Bates is a 3<sup>rd</sup> year undergraduate on the Health and Medical Sciences BSc at Warwick Medical School (WMS). She has a keen interest in research in Public Health and is moving on to the MPH (Master's in Public Health) here in the autumn. She is involved with a number of working groups at WMS, where she advocates for peers and staff who have protected characteristics. Helen enjoys working side by side with staff, helping in this small way to shape the future of WMS for the better.



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**Endnotes**

<sup>i</sup> On behalf of the WMS Enhancing Research Culture Group

<sup>ii</sup> See: <https://warwick.ac.uk/fac/sci/med/> [Accessed: 12 April 2024].

<sup>iii</sup> See: <https://warwick.ac.uk/research/research-culture-at-warwick/2022-23-projects> [Accessed: 12 April 2024].

<sup>iv</sup> See: <https://www.niftyfoxcreative.com/about> [Accessed: 12 April 2024].

<sup>v</sup> Table Key: a. **Researcher** – includes academic and clinical academic colleagues on research-only, research and teaching, and teaching-only contracts; b. **ECR – Early Career Researchers**; c. **Research enablers** - non-academic colleagues contributing to the wider research effort through the development and delivery of research; d. **Adjusted total** – those who participated in more than one café were not included in the adjusted total. e. **Total WMS staff population** (2023): 527; Total WMS student population (2023): 1888 across all programmes (Undergraduate (UG)/ MBChB/ Post-graduate Taught and Post-graduate Research (PGR)).

<sup>vi</sup> See: <https://warwick.ac.uk/fac/sci/med/research/culture/abrc/> [Accessed: 12 April 2024].

<sup>vii</sup> See: [https://warwick.ac.uk/fac/sci/med/staffintranet/staffresources/careerdevresearchteaching/ecr/wms\\_ecr/](https://warwick.ac.uk/fac/sci/med/staffintranet/staffresources/careerdevresearchteaching/ecr/wms_ecr/) [Accessed: 12 April 2024].

<sup>viii</sup> See: <https://warwick.ac.uk/research/research-culture-at-warwick/ercf-projects> [Accessed: 12 April 2024].

<sup>ix</sup> See: <https://warwick.ac.uk/fac/sci/med/research/culture/> [Accessed: 12 April 2024].

<sup>x</sup> See: <https://warwick.ac.uk/research/ncrc/> [Accessed: 12 April 2024].

# Research Culture's Role in Contributing to Research Waste: Lessons from Systematic Reviewlution

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## Abstract

*Systematic reviews are the gold standard of evidence syntheses and underpin decision making which affects outcomes for patients globally. A research integrity project funded by the UK Research and Innovation Medical Research Council, entitled 'Systematic Reviewlution' aimed to understand and document problems with these highly cited and influential articles, which are often being published at a rate that outpaces primary clinical research. This living systematic review found 485 articles in the first iteration, documenting 67 discrete problems relating to the conduct and reporting of published systematic reviews. These problems potentially jeopardise the reliability or validity of systematic reviews. A variety of institutional factors are likely fuelling the publication of substandard systematic reviews and these factors are representative of issues affecting the entire evidence ecosystem. These factors are discussed in reference to themes identified through this meta-meta-meta-research initiative. The publish or perish perverse academic reward system is fuelling a lack of reproducible research. Paradoxically, the reputation of systematic reviews as a high-quality form of evidence is leading to an overproduction as they are likely seen as a certainty for publication. Wider issues of the influences of research culture generally, the fallibility of peer review and the importance of diversity and representation in research teams are emphasised.*

**Keywords:** research culture; systematic reviews; meta-research; perverse academic incentives; research integrity; research waste

## Background

Research waste can cover several scenarios. It can refer to:

- i. publication of redundant, poor quality, unreliable or invalid research (**Glasziou, 2018**).
- ii. failure to publish or disseminate the results of research (**Chalmers, 2009**).
- iii. inefficient or unnecessary use of resources in the research process, including time, funding, and human efforts (**Zheutlin, 2020**).
- iv. failure to use earlier research when preparing new research (**Robinson, 2011**). Marriage tactile

Systematic reviews, whilst regarded as the pinnacle of the evidence based hierarchy, have previously been noted to contribute to research waste by promoting the citation of underpowered trials (**Roberts, 2015**), for being susceptible to fraud (**Marret, 2009**), for being low quality (**Hedin, 2016**), and for failing to be complete (**Créquit, 2016**). Due to the vast number and variety of papers highlighting such problems with systematic reviews across different journals and different specialities, a research integrity initiative was created to join up a conversation regarding limitations of systematic reviews (**Uttley, 2023**). This project was funded by a Career Development Award to the primary author from the UKRI Medical Research Council and collaborated globally with experts in evidence synthesis to create a living systematic review of papers highlighting flaws, limitations and problems with published systematic reviews. The aim of this project has been to categorise the many problems levelled against systematic reviews by previous authors, by conceptually grouping them to amplify and learn from the work of previous authors in this field. The problems are categorised by four domains, which are hallmark characteristics of good systematic reviews being: i. Comprehensive; ii. Rigorous. iii. Transparent and iv. Objective. The published paper and associated website for this living review was created as a resource to help those who do, and use, systematic reviews to improve future systematic review conduct (**Systematic Reviewlution, 2024**).

The methodology of this project was registered and has been described in full elsewhere (**Uttley, 2023**).<sup>1</sup> In the first iteration of this review, sixty-seven discrete problems were found from 485 included articles that could potentially harm the reliability or validity of systematic reviews.

In other work examining the growth of systematic reviews, research shows that the number of systematic reviews being published is increasing year upon year (**Fontelo, 2018**) and outpaces primary clinical research in some areas (**Niforatos, 2020**). More worryingly, the number of meta-analyses

being published, which may not have been conducted in the context of a systematic review, is also increasing. What are the possible justifications for conducting meta-analyses that do not attempt to use the comprehensive and transparent methods that systematic reviews require? What is the value of a meta-analysis which has not been entirely exhaustive in the search for studies and rigorous in the methods of analysis? Meta-analysis is a statistical technique that can be performed with limited or no statistical expertise using open source software and as such can be conducted very rapidly. A best practice systematic review however is a time-intensive research project and requires the input of multiple methodologists, adherence to reporting and methodological guidelines, pre-specification and ideally, registration. Given that the risk of selection bias is high in primary trials that are not pre-registered, the same risk exists when producing pooled treatment effects by combining studies in a retrospective meta-analysis. In any case we are witnessing large numbers of meta-research studies being published at an exponential rate (**Ioannidis, 2016**).

Systematic reviews, like other meta-research study designs, are particularly vulnerable to being conducted and published hastily because they are desk-based research, which do not require approval through research ethics committees as they make use of existing published papers. Indeed, evidence syntheses currently represent a quicker route to publishing empirical research as they do not require the painstaking acquisition of primary data, which requires substantial time, planning and (preferably), preregistration. The notion that secondary data analyses should be automatically exempt from applying for ethical approval has more recently been challenged in consideration of cases where such desk-based research may raise sensitive issues and could cause harm (**Chatfield, 2023**). This includes emphasising the distinction between the need to seek ethical approval and ensuring that appropriate consideration of potential ethical issues raised by secondary data analyses is given by the research team. Meta-research, if seen as a swift route to publication, may be more susceptible to being conducted in haste and this is increasingly evident in recent papers included in the update to Systematic Reviewlution. Despite the wide availability and development of best practice guidelines for systematic review reporting and methodological conduct, citation of or supposed adherence to these checklists are not protective of systematic review integrity (**Dai, 2022; Innocenti, 2022; Nguyen, 2022; Bojcic, 2023**).

### **Lack of Planning and Registration in Systematic Reviews**

Whilst preregistration of systematic reviews by way of protocol development and publication is best practice, it is not strictly necessary in order to publish a systematic review in all academic journals. Indeed, Systematic Reviewlution has found that the most prevalent problem in systematic reviews by far is the lack of protocol registration, with 104 articles highlighting a lack of systematic review protocols in the most recent update to the living review. Moreover, recent research highlights that even systematic reviews that are in fact registered on the PROSPERO database for health-related systematic reviews are often already in progress, meaning that the methods may not been registered *a priori*, or before work begins (Riley, 2023). Registration in these cases can cynically be thought of as route to facilitate publication in a peer-reviewed academic journal.

### **Registration Does Not Guarantee Best Practice Conduct**

Unfortunately, research finds that preregistration of systematic reviews in PROSPERO does not necessarily correlate with high methodological or reporting quality. Whilst registration is generally associated with better quality than unregistered reviews (Ge, 2018; Sideri, 2018), further meta-epidemiological research highlights that many registered reviews have critically low methodological or reporting quality (Khaleel, 2019; Riley, 2023). Systematic reviews are often found to have deviated from their original protocol and that this deviation in methods is frequently not updated in the protocol nor is it justified or the resulting journal paper (Riley, 2023).

### **Duplication and Redundancy in Systematic Reviews**

Registration of reviews also does not guarantee that registered review questions are unique and research shows that duplication of review topics in PROSPERO (Beresford, 2022) and Epistemonikos database (Whear, 2022) is common. Duplicated systematic reviews could, in theory, serve as study validation if used as replication research for identical review questions (Vachon, 2021), preferably with aims for improved methodological and reporting conduct than previous reviews. However, analysis of original, replicated and excessive replication of systematic review questions finds little value is added when those duplications continue to suffer from low methodological quality and high risk of bias (Chambers, 2014; Chapelle, 2023). Systematic reviews with identical review questions have also been noted to contain conflicting results (Rosen, 2016; Pagel, 2021). Redundant systematic reviews published after newer ones have been noted to add nothing new or useful (Siontis, 2018). Systematic reviews have been found to be poorly justified in the scope,

and fail to demonstrate, awareness of relevant work by citing similar existing or ongoing reviews (**Poolman, 2007; Weir, 2012; Pieper, 2014; Riva, 2018; Hacke, 2020**). There are also many registered systematic reviews that are never completed or published, termed as 'zombie reviews' (**Andrade, 2017; Runjic, 2019**).

### **The Role of Research Culture in Systematic Review-Related Research Waste**

In an academic culture that requires and rewards frequency and number of publications for research careers with longevity (**Biagioli, 2020; Hsing, 2023**), the so-called publish or perish mantra which plagues researchers' careers is a likely contributor to the proliferation of systematic reviews which are reputable in name but not necessarily in delivery.

Questionable research practices can be employed from the most junior to senior of academics across disciplines when promotion, contract stability and reputation depend on authorship of academic journal papers (**Edwards, 2017; van de Schoot, 2021**). Time-poor academics are required to peer review manuscripts claiming to be systematic reviews, but diligent peer review is an increasingly scarce commodity when there are competing pressures to conduct one's own research and win funding (**Schulz, 2022**). There is a lack of clarity for fact-checking guideline checklists and detecting questionable research practices between editors and peer reviewers (**Ekmekci, 2017**). A research environment built on a profit-making journal industry with an increasingly growing grip from a few commercial publishers (**Larivière, 2015**) is the perfect storm for researchers, clinicians and industry to seek opportunities for easy publications. In this climate of research culture, systematic reviews are the unfortunate likely candidates to be seen as a dead-cert for publication in academic journals.

### **The Role of the Research Team**

Ultimately, a research project is governed by the team who design and conduct it and the influence of systematic review team on the resulting output has been highlighted previously (**Uttley, 2017**). Additionally, research teams need to be sufficiently diverse and to have consulted stakeholders and people with lived experience to ensure they conduct representative research. Disparities such as gender representation across science more generally are likely fuelled by research culture (**Ross, 2022; Khan, 2019; Hagan, 2020; Mahony, 2020; Johnson, 2021**). This disparity shows up in systematic review author teams, which often lack diversity (**Qureshi, 2020; Dhali, 2022; Rathna, 2023**). A lack of diversity has recently been found to be correlated with a lack of reporting of equitable characteristics of the primary studies in the systematic reviews



(Antequera, 2022). This indicates that homogenous research teams are less able to produce research for diverse populations.

### **Ethics of Conducting Substandard Systematic Reviews**

We would not endorse a clinical trial to commence without ethical approval. We want to know that the trial investigators have some competence in conducting and reporting research involving human participants. In secondary research however, the adage is 'no ethical approval is needed as the review only uses existing datasets'. However, when a team of researchers decides to do a systematic review using existing patient data, without the funding, the resources, the expertise or statistical competence within the team, or the knowledge of how to perform comprehensive literature searches, is it ethical for such a team go forth to combine and publish results that could potentially distort the evidence base? It may be argued that ensuring appropriate skills, time and resources are allocated to systematic reviews is vital to result in reliable and valid research answers. In addition, despite the apparent freedom that secondary evidence syntheses represent from the process of obtaining ethical approval, it may be judicious for researchers, peer reviewers and journal editors to contemplate whether there could be ethical issues arising from meta-research projects that warrant ethical consideration prior to and during conduct.

### **Accountability**

It is the responsibility of researchers, peer reviewers, publishers and editors to stem the tide of research waste from systematic reviews and other meta-research products from polluting the evidence ecosystem. Meta-research projects should not be conducted lightly. They should be pre-planned; they should have a protocol. As a minimum that protocol needs to be publicly accessible and date stamped prior to starting the research. Ideally, the protocol would be registered on a database of systematic reviews and subject to some form of relevant peer review, including the views of patients, clinicians and stakeholders where appropriate. Where systematic review authors have not implemented the minimum standards, peer reviewers and editors should question the scientific value of adding such manuscripts to the permanent academic record. Good science takes time, resources, diverse expertise and forethought. It could be argued that the rest is just waste.

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## Acknowledgments

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Lesley Uttley is Senior Research Fellow at the University of Sheffield, working in the field of meta research scrutiny. After a PhD in Psychology and 10+ years experience in systematic reviews, Lesley was awarded a fellowship by the UKRI Medical Research Council (2020-2024) to investigate the reliability and validity of published systematic reviews- the gold standard in evidence syntheses. This living research integrity initiative joins up the conversation about systematic review problems to help people doing and using systematic reviews strive for best practice. She advocates considering how human influences such as researcher allegiances, conflicts of interest, and research culture, can impact seemingly objective research projects.



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**Endnotes**

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<sup>i</sup> Open Science Framework registration <https://osf.io/2hmv9/> PROSPERO registration CRD42020181371.

# Global Perspectives on Open Research Culture: A UK–New Zealand case study

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## Abstract

*This critical reflection explores the role academic libraries play in enhancing the research culture of their institutions, specifically in relation to Open Research, through two contrasting case studies of the work undertaken by the University of Waikato Library, Aotearoa, New Zealand, and Lancaster University Library, UK. A prevalent theme within the paper is the contrasting level of maturity and engagement with Open Research at national, governmental, and institutional levels and the impact this has on the approaches of both institutions. The paper demonstrates how libraries proactively work in partnership with their communities to act as a catalyst for initiatives that facilitate culture change.*

**Keywords:** open research; research culture; library sciences; open access publishing



## **Introduction**

Academic libraries play a significant role in shaping the environment of their institutions. Rather than just being service providers, libraries proactively work in partnership with their communities to act as a catalyst for initiatives across the university in areas that may not traditionally be seen as library business. One area where libraries can play a proactive role in influencing the direction of their institutions is Research Culture.

Research Culture encompasses the behaviours, values, expectations, attitudes, and norms of research communities. It influences researchers' career paths and determines how research is conducted and communicated (**The Royal Society, 2021**). This paper will present a critical reflection on the approaches taken by the University of Waikato Library, Aotearoa, New Zealand, and Lancaster University Library, UK, to enhance the research cultures of their institutions. We will explore the impact of local contexts and how the priorities of both institutions and their approaches to influencing research culture are affected by the level of maturity and engagement with Open Research at national, governmental, and institutional levels.

## **Lancaster University Library, UK: Developing an Approach to Facilitate a Culture of Open Research**

Research Culture is becoming an increasingly important subject within the UK Higher Education Sector. A key theme within these discussions concerns Open Research, which refers to a range of practices relating to the conduct of research and communication of its outputs (**UKRI, 2023**). It champions the idea that research (and data) should be shared as freely as possible and as early as possible in the research process across all disciplines, both within and beyond academia (**Ayris et al., 2018**). Lancaster University Library has an ambition to foster a Research Culture in which staff and students are encouraged and supported to explore and engage with Open Research practices in their work and study to maximise the possibility of public and academic impact. This section of the paper will reflect on how Lancaster University Library developed its approach to advance a culture of Open Research and how this approach was influenced by the local context the University operates within.

### *Context*

Lancaster University is a research-intensive university based in the Northwest of England with over 16,000 students and 3,500 staff. In recent years, there has been an increasing strategic focus within the university on Research Culture. This has been partly driven by a series of developments within the UK Higher Education Sector. In July 2021, the UK Government

published its 'Research and Development (R&D) People and Culture Strategy', which outlines the Government's ambition to build the UK's future research and innovation workforce which will work within a positive and inclusive culture. This was followed by the UK Government issuing 'enhancing research culture' funding to UK Higher Education Institutions in September 2022 to develop and initiate activities in response to the People and Culture Strategy.

Lancaster University's focus on Research Culture has also been driven by the UK Higher Education Funding body's publication of their initial decision on the high-level design of the next Research Excellence Framework (REF). The REF is the UK's national assessment of research in Higher Education institutions. The results of the REF help to decide the government's allocation of funding to Higher Education Institutions and feed into several major university league tables, which can have a significant effect on student and staff recruitment. The UK Higher Education Funding bodies have announced that 25 per cent of the weighting of the next REF assessment in 2029 will consist of the category 'People, Culture and Environment'. Whilst these external factors have brought an increasing focus on Research Culture within the institution, the university has also recognised that the current context and funding opportunities represent a good chance to reimagine research practices and enhance the research environment within the university, such as in relation to Open Research.

#### *Developing an open research culture*

Lancaster University has invested significant resources in Open Research, including the establishment of a dedicated team in the library who work with colleagues across all disciplines of the university. The university has also published an institutional Principles of Open Research, which was developed in partnership with researchers from across the institution. These principles promote Open Research, which includes the transparency of processes and sharing of outputs, such as publications, data, code, and methodologies, and recognise the benefits to the worldwide research community of research transparency and openness.

Our library has an ambition to ensure our Research Culture aligns with these Principles of Open Research. To achieve this, we utilised the Enhancing Research Culture Funding received by the university to commission a report in 2022 into its Research Culture, with a particular focus on how it is affected by trends in academic publishing. Following on from the report, the library further utilised the Enhancing Research Culture Funding to create a project post in June 2023 to build upon the report's findings.

We began by conducting an environmental scan, which included engaging with stakeholders both internal and external to the university and conducting a self-assessment of the institution's readiness for Open Research, based on the 37 criteria set out in the League of European Research Universities (LERU) Open Science Roadmap self-assessment framework (Ayris et al., 2018). The tool presents a set of questions which institutions can use to monitor their progress in implementing Open Research principles, practices, and policies at a local level based on the European Commission's eight pillars of Open Science (Ibid). This provided a valuable framework from which to measure our progress towards developing a culture of Open Research and identify areas to prioritise. We were also proactive in ensuring our work aligned with wider Research Culture initiatives within the university. This included contributing to the delivery of a series of Research Culture workshops, which provided colleagues the opportunity to share their feedback on various aspects of the university's research environment. Through adopting this methodology, we were able to identify priority themes to address to help us meet our ambition to foster a culture of Open Research.

One of these priority themes is supporting Open Access Monograph publishing by our academics. An Open Access Monograph is a long-form publication that communicates an original contribution to academic scholarship on one topic or theme and is designed for a primarily academic audience. It is available online free of charge and accessible without registration or other access barriers (UKRI, 2023). Publishing monographs Open Access provides several benefits to authors including increased readership and citation (Neylon et al., 2021). Research is also more accessible to a more diverse audience, such as policymakers, industries, institutions, and individuals who might lack the resources to purchase it otherwise (Neylon et al., 2021). The principles and practices of Open Access Monographs are aligned with Lancaster University's Principles of Open Research, and we are keen to foster a Research Culture in which Lancaster researchers are able to embrace Open Monograph Publishing.

The focus on this theme was partly driven by the need to comply with funder mandates. UKRI (UK Research and Innovation), a major research funder, has imposed a new policy which requires all monograph outputs resulting from UKRI-funded projects to be published Open Access after the 1 January 2024. However, we have also identified several barriers which are preventing a culture of Open Research concerning Open Access Monograph publishing. For instance, financial hurdles are preventing some authors from publishing their monographs Open Access. One of the most common routes to publish an Open Access Monograph is the book processing charge, where publishers charge researchers a fee, typically between ten thousand and twelve thousand pounds. Whilst there are

alternative publishing routes where publishers don't charge researchers to publish, such as Diamond Open Access, these are not as well known amongst the researcher community and sometimes lack the infrastructure publishers operating with the book processing charge model possess.

To address this issue, we have launched a pilot institutional Open Access fund for the 2023/2024 academic year which enables unfunded researchers to publish monograph outputs Open Access whether they are the corresponding author or not. Researchers can claim up to ten thousand pounds to cover the cost of Open Access fees if Lancaster University affiliation is shown in the output. The scheme addresses a disparity in opportunities that previously existed between funded and unfunded researchers and contributes to a more equitable research environment.

We have also collaborated with Liverpool University Press, the University of Salford, and the University of Liverpool to develop a scheme called 'Trailblazers', which allows selected unfunded early-career researchers from each institution to publish an Open Access Monograph who otherwise may not have had the opportunity. Participants in the scheme will also take part in a series of author boot camps which will equip them with knowledge and skills to support the publication of their work throughout their careers. Our library has also been proactive in supporting the development of Diamond Open Access publishing by working as a partner on the multi-million-pound Open Book Futures Research Project, which aims to develop the infrastructures and workflows of this model to allow more academics to publish through this route. Our involvement in these projects demonstrates the role that libraries can play in shaping the research environment of their institutions through acting as co-creators in partnership with academics and publishers.

There are also many misconceptions and concerns which can prevent monograph authors from embracing Open Access. A common myth is that Open Access Monograph outputs lack prestige and academic quality due to the mistaken belief that they are not subject to the same peer review and assessment process as non-Open Access titles. To address this we have prioritised advocating for Open Access Monograph publishing and challenging these misconceptions. Previously the library has taken a grassroots approach to encouraging researchers to engage with Open Research practises through delivering events and workshops focused on high-level discussions on Open Research related topics. However, in recent years—perhaps due to the concept of Open Research becoming more established within the UK Higher Education context—we have found that researchers often only engage in these areas at the point they need to within their research project lifecycles. We have therefore developed a

bespoke online Open Access Monographs resource to allow Lancaster researchers to learn about the principles and practices of Open Access Monographs at their point of need and showcase author success stories.

We have also identified the need to explore the tensions between existing Open Research policies and the lived experience of researchers as a key theme to prioritise. For instance, our current Research Data Management policy mandates that all research projects should produce a data management plan. In practice, compliance with this policy is low. However, rather than taking a top-down approach and forcing researchers to comply with this policy we are keen to shape our research environment to one in which conducting Open Research practices, such as producing data management plans, are normative. We acknowledge that researcher behaviour is affected by local research community norms and is also subject to external pressures. We have therefore developed a programme of activities to engage with researchers to explore the lived reality of our policies and work in partnership to deliver an Open Research culture. This includes delivering a Research Culture Cafe event, open to all university staff and students, to consider Open Research practices and reflect on how the university can move towards an Open Research culture. Working in partnership with our communities is key to developing and maintaining a culture of Open Research and the outcomes of this programme of activity will inform our future approaches.

### **University of Waikato Library, Aotearoa, New Zealand: enhancing Research Culture through Open Research**

By contrast, the discussions around both Open Research and Research Culture in Aotearoa, New Zealand, are still emerging. The following section explores the approach of the University of Waikato to enhancing its research culture through Open Research within a different context.

#### **Context**

The University of Waikato is a small university in regional Aotearoa, New Zealand. It was founded in the 1960s and currently has around 13,000 students and 1,500 staff. The university has a longstanding relationship with the Kīngitanga and Waikato-Tainui, who are the traditional owners and custodians in the Waikato region. *Te Whare Pukapuka* – The Library did not historically have a focus on Open Research or research support in general.

The arrival of a new university librarian in 2021 preceded a range of changes in the research environment, including the establishment of an Open Access Steering Group<sup>1</sup> under the auspices of Universities New Zealand (UNZ) and the publication of a landmark report for the Office of

the Prime Minister's Chief Science Advisor, 'The Future is Open' (Saunders, 2022). Shortly afterward the UNZ Steering Group established a joint target of seventy per cent open by 2025 as part of their 'Pan-university Open Access Statement', and the Ministry of Business, Innovation and Employment (MBIE), the country's largest funder, released 'Kaupapahere Rangahau Tuwhera MBIE - MBIE Open Research Policy' (MBIE, 2022).

*Developing an open research culture through the implementation of an Open Research Position Statement*

With these developments in place, and a 2022 library restructure, substantial resourcing was redirected to establish an Open Research Team, and the library was in a position to make meaningful headway on Open Research. Early Open Research initiatives included establishing an Open Access Equity Fund which prioritised funding for Māori, Pacific, and early-career researchers, and embedding a Profiles Check service. The latter encompasses a systematic, individualised review of a researcher's online presence and impact profile, including rates of openness. Undertaking this process with all members of the university senior academic leadership team helped to build awareness of what value the team could provide and what Open Research encapsulated. As part of the team's development, and at the request of the Deputy Vice Chancellor Research, the team undertook a large piece of research on how researchers used and perceived metrics across disciplines. The interviews also touched on other Open Research themes such as Open Access and our Institutional Repository, Research Commons.<sup>2</sup> Although the focus was on metrics, a key finding of the research was that there was a significant gap between what researchers believed about Open Research practices and their behaviours. The team found that although most researchers had positive views on Open Research and its relationship to impact, they felt they operated in a system that actively discouraged practices conducive to responsible metrics use, impact-centred publishing decisions, and meaningful scholarly engagement by indigenous peoples. This was one of the drivers for turning their attention to Research Culture. Early dialogue with the university's Research Committee opened a discussion around Research Culture, and as understanding developed a vision of the university's desired Research Culture emerged around which an Open Research Position Statement could be formed.

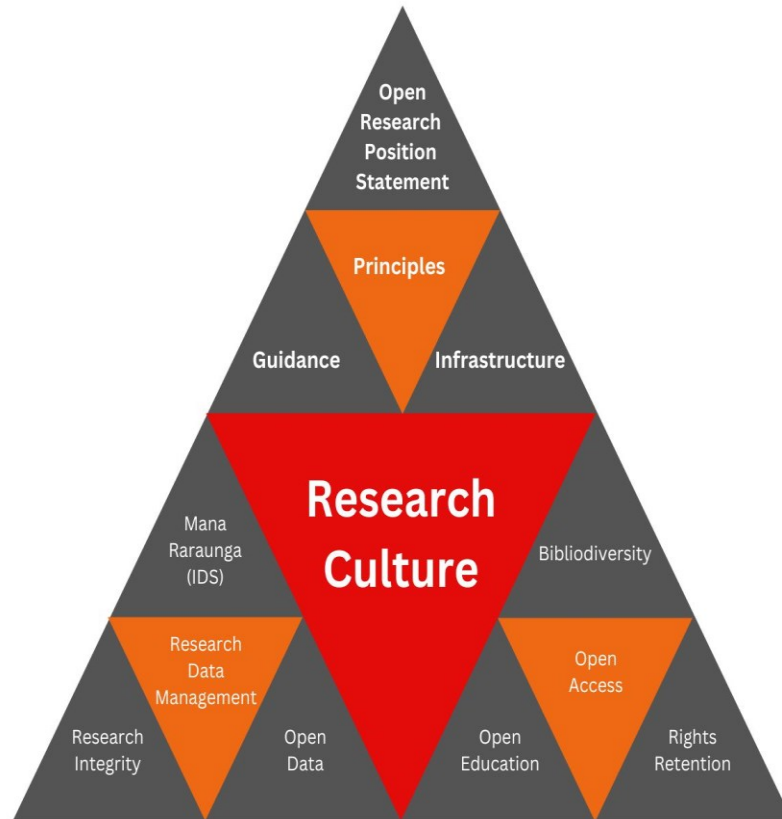
A deliberate choice was made to propose an Open Research Position Statement for several reasons. Firstly, there was a great deal to be learned from institutions overseas that had already implemented an Open Research Position Statement or similar. This led to formative conversations with staff from Lancaster University Library and other university libraries, which provided valuable insight. Secondly, there is

little correlation between an Open Access policy and Open Access rate, as discovered by Catterall and Barbour (2023). While policy can play a role in changing culture (Nosek, 2019), it is clear policy alone would not change behaviour and potentially be viewed in a negative light. A draft Research Data Management Policy had been tabled at Research Committee several times and failed to get the necessary buy-in. Instead of leading with detail, a decision was made to first establish a strong foundation as to what the university wanted to achieve. Principles and guidance as to how to enact the position statement would follow as buy-in grew and needs became clearer. This approach also allows for the team to onboard champions and engage with new stakeholders as need arises through the development of the principles and guidance. Thirdly, with early, targeted stakeholder engagement and effective leader-to-leader communication, the team was able to pull together the statement with relative ease compared to a policy. Simultaneously, the speed with which the statement was developed, coupled with thorough background work, meant that if it became evident the approach was not the right one, a pivot was possible without substantial loss of time or resources.

An environmental scan was the first step, and a range of Open Research Position Statements from around the world were compared and key features identified. At this point there was no other example of an Open Research Position Statement in Aotearoa, New Zealand, and while the scan helped to inform the structure of the statement, it was clear that a different approach was required. Most of the examples identified as part of the environmental scan centred a Western worldview, whereas Te Tiriti o Waitangi (the founding document of Aotearoa), advocates for a partnership between Māori and the (British) Crown, which protects Māori interests. This needed to be reflected in the statement. Similarly, this necessitated robust and honest engagement with the inherent tensions between Open Research and Kaupapa Māori Research, which is the general term for research by, for, and about Māori. The development of the Open Research Position Statement coincided with the release of key documents relating to Indigenous Data Sovereignty, an issue that the sector had been grappling with for some time, particularly Te Kāhui Raraunga, the Māori Data Governance Model (Kukutai et al., 2023). Given the growing recognition that Māori should have control over data pertaining to them under Te Tiriti, the statement needed to be explicit that not everything could, or should, be made open. Rather, the notion that outputs should be as open as possible but as closed as necessary was overarching. In negotiating this balance, the team relied heavily on the principle of responsibility. That is, there is an acknowledgement that a researcher knows their research intimately enough that they can make

decisions accordingly, and that the library is there to help them understand the options available.

Figure 1: The Research Culture visualisation  
(University of Waikato Library, Aotearoa, New Zealand: 2023)



The resulting visualisation created by the library allowed the team to further articulate the interplay between the Open Research Position Statement, the Research Culture, the various facets of Open Research, and the principles in development. It also incorporated locally relevant cultural symbolism and provided instruction for those who learn better visually the intentions behind the statement. The interlinking triangles reference the *'niho taniwha'*, which translates to 'teeth of the *taniwha*'.<sup>3</sup> The positioning of the Open Research Position Statement within the visualisation speaks to its nature as overarching, a kind of capstone, and a point from which all else flows. The first element to flow from the statement is the principles. These are the reference points through which all further developments pass. They articulate and define the values the position statement aims to embody and are currently in development. The principles, in turn, are supported by the guidance provided to researchers through resources and expertise. Similarly, the university provides the infrastructure which facilitates Open Research, for example, in the form of the Institutional Repository. Together they are effectively the 'make it possible' layer of the 'Strategy for Culture Change' pyramid described by Nosek (2019).



Including them as part of the visualisation also expresses a commitment to continuously review and improve these so that they remain relevant. At the heart the visualisation is Research Culture, as this is central to everything.

## **Conclusion**

This article has reflected upon the approaches taken by the University of Waikato Library and Lancaster University Library to enhance the Research Culture of their institutions by presenting two contrasting case studies. In doing so it has highlighted the roles libraries can play in proactively influencing their institutions Research Culture by working in partnership with our communities.

Of particular relevance is the impact the level of maturity and engagement with Open Research at national, governmental, and institutional levels has had on the approaches of the two institutions. We find in the case of Lancaster University Library that the groundwork laid by government and funder policies has very much shaped the progress made. The library has been able to take advantage of the increased focus on Research Culture within the UK Higher Education sector and the funding opportunities resulting from this to develop a strategy to facilitate a culture of Open Research. Whilst the concept of Open Research has been prevalent within the UK sector for several years, the focus on Open Access Monographs within this approach reflects the evolving nature of these discussions.

In New Zealand, on the other hand, conversations around Research Culture and Open Research more specifically have only begun more recently. Funders and government departments have been slow to implement policies that drive behaviour within institutions such as universities. The emergence of these early initiatives at national and governmental level has allowed the University of Waikato Library to take a leadership role in helping the university to articulate its ambitions. Being able to draw on the experience of others with a higher level of maturity is key in being able to act quickly and in agile ways. Simultaneously, the added layer of complexity necessitated by developments in the Māori data governance space means that the library has unique expertise to offer.

In conclusion, one of the main lessons learned in comparing these two scenarios is that university libraries can be effective in acting as catalysts for change by being responsive to changes in the environment and willing to learn from other institutions. Collaboration and the leveraging of specialist expertise already residing within libraries will be crucial in ensuring that they can continue to add value as the conversation around Research Culture develops.

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## Endnotes

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<sup>1</sup> See: <https://www.universitiesnz.ac.nz/about-universities-new-zealand/expert-and-working-groups/open-access-steering-group>

<sup>2</sup> See <https://researchcommons.waikato.ac.nz/home>

<sup>3</sup> *Taniwha* are 'more-than-human' relations within a Māori worldview or paradigm. They are sometimes described in *pūrākau* or traditional narratives as taking the form of various animals, though are often depicted in Māori artforms as water creatures that resemble large serpents or dragons in other cultures. They occasionally take on a guardianship role, either for certain tribes or particular places of significance.

# Engaging Academics with Outreach: How the ‘STEM Connections’ model empowers staff

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## Abstract

*STEM Connections was a funded project designed to position academics at the forefront of outreach activities. It drew on the experience of outreach-focussed professional services staff to bridge the gap between the public and the academy, to train and support academics in the skills of engagement, and to support the design of the activities. Two cohorts (11 in 2022 and 12 in 2023) of academics were trained through this project, creating 20 interactive activities linked to active research and teaching at the University of Warwick. Four academic departments were represented across the two cohorts.*

*This paper explores the background literature of outreach: why do institutions feel a duty to engage the public? Who delivers the outreach? What are the benefits on the institution? Most importantly, how can outreach projects be designed to complement academics' skills, rather than over-burden their already burgeoning workloads? Can outreach projects create tangible benefits for the academics who take part? The paper concludes with reflective statements from the involved academics.*

**Keywords:** STEM outreach; public engagement; science communication; presentation skills; widening participation; outreach

## Introduction

Outreach activity and expenditure is often justified as being a tool for societal change through the impacts that it can have on the audience. The authors' roles in professional services at the University of Warwick provides perspective on the impacts of outreach on the academics who deliver activities. This paper concerns the *STEM Connections* project, reflecting on the theoretical background, design, implementation, and impacts on the academics involved.

### *Why do universities do outreach?*

The common starting point for outreach literature is in 'gaps'. Across all subjects, universities consider gaps between demographics in terms of their applications to, and success in, higher education (HE) institutions. For example, POLAR (the *Participation of Local Areas*) data considers the likelihood of students to enter HE based on their geographical area. Outreach activity may be targeted to serve communities in these areas or other demographic groups. These cases are described as *widening participation* activities, and policy is evolving in response to evidence (Whitty et al., 2015).

Universities and funding agencies also emphasise the importance of public engagement and outreach as part of academic activities (Harris & Ridealgh, 2016). Funding bids increasingly include descriptions of outreach that will accompany research, for example UKRI have a vision (UKRI, 2019) and a strategy case (UKRI, 2022) for public engagement. As a Warwick-specific example, the Warwick Electrification Development (WELD) project references the skills gap (Gammon & Soulard, 2022). Four researchers on that project were involved in the STEM Connections project. Universities are also including outreach activities as part of REF case studies (Copley, 2018; Greenhalgh & Fahy, 2015; McLaughlin et al., 2018; Ovseiko et al., 2012; Watermeyer & Lewis, 2018) and, considering that REF is among the most important metrics to a university's reputation, this demonstrates the strategic value of outreach activities.

Considering science, technology, engineering and maths (STEM) subjects, there is a gap between the perception of science in young children and their older peers. The gradual shift is evidenced in the longitudinal ASPIRES projects (Archer et al., 2013). In the minds of young children, the excitement of 'whizz-bang' demonstrations nurtures positivity towards science. As those students progress through education, this excitement fades to the drudgery of equations and textbooks. Enrichment sessions aim to preserve excitement and inspire young people to see themselves as scientists and engineers, aiming to inspire more people to study and enter careers in STEM.

The policy drive to support young people into higher education (**Higher Education and Research Act, 2017**), and specifically those aspiring to becoming STEM professionals arises from an identified 'skills gap' in the UK workforce (**House of Lords Science and Technology Committee, 2022**). There is a shortfall of qualified STEM teachers (**Kirby & Cullinane, 2017**) and, it follows, too few young people are entering the workforce to fill vacancies (**Government Science and Engineering Profession, 2022**). This is a current area of discussion in the literature (e.g., **Banerjee et al., 2024**) but it is not a novel topic, dating back decades (**Cappelli, 1995; D'Amico, 1997; Edgley, 1977; Young et al., 2021**). The gap has not been 'fixed' despite all the initiatives over this time making it abundantly clear that any current work should be well documented and published to establish an evidence base of what works and what the impacts are.

#### *How much outreach activity is being done?*

With funding bodies, policymakers, University admissions and strategic directions all pushing academics towards outreach, clearly there must be a lot of activity in place.

Activities may be logged in the Higher Education Access Tracker (HEAT) to record what work is done, and with whom. The total number of activities listed against the academic years 2017-2018, 2018-2019 and 2019-2020 were 86,472, 123,424, and 102,387, respectively (**HEAT, 2024**). A major challenge in the sector is how much of this outreach is visible. It is impossible to estimate the proportion of outreach that 'professional' teams are aware of *versus* activity that is done by individual academics on their own, and therefore may not be captured into databases such as HEAT.

Discussions between the staff assigned to outreach in departments can be rare, and the authors imagine that few faculties are aware of all the outreach activity within their own departments, let alone their university.

#### *Who does outreach?*

Professional teams and roles for the co-ordination of outreach and widening participation exist within the university sector. Departments may have nominated members of staff who are tasked with widening participation in addition to research and teaching (**Johnson et al., 2019**). There may be a formal plan in place for these members of staff to target specific recruitment criteria, given the existential need for departments to recruit. In other institutions widening participation may not take place without the award of external funding:

*In advocating for the standardization and embedding of student transitions support, the issue of who does this work comes to the fore. In the case of our project, internal funds paid for each of the three authors to work on the project for half a day per week for approximately nine months. If we hadn't successfully bid for this funding, then the project would not have taken place. (Breeze et al., 2020).*

Universities may have central teams, in some cases multiple teams, who each have a different perspective on outreach. There are networks that link multiple universities, such as UniConnect hub and draw on decades of student data (Rose & Mallinson, 2020). They target activity to widen participation in HE (Rose & Mallinson, 2023).

Undergraduate students are often brought in to outreach activities as ambassadors (Fleming & Grace, 2016; Gartland et al., 2010), as content creators (Iriart et al., 2022), as event supporters (Struthers & McConnell, 2023), or as event leaders (Stirling et al., 2018). There are benefits to the outcomes and skills of students as a result of taking part in these schemes (Fogg-Rogers, Lewis, et al., 2017; Muñoz-Escalona et al., 2019; Nelson et al., 2017). Undergraduate students can be more relatable role models than established STEM professionals, being closer in age to school pupils. The additional benefits to the employability skills of the undergraduates, especially considering that these students may themselves have come from a widening participation background, could support their progression into, and success in, STEM professions.

Lastly, and perhaps most importantly for the context of this paper, there are individual academics. In some cases, academics feel so passionately about their subjects that they volunteer to speak in public spaces. In many cases these activities go unknown to their institution and are lost to the national picture of public engagement. Alternatively, academics may work with the teams above to contribute their expertise and content to a university-known programme, wherein their efforts should be recognised and contribute towards a promotion pathway.

## **Literature Review**

### *Designing projects that benefit academic institutions.*

Impacts of outreach interventions on the audience include admissions (Sithole et al., 2017), perception of the university (Bryan et al., 2022), and the role of the university in the local community (Charles, 2003), but there are additional benefits to the institution itself.

Frameworks defining a university's intended direction may be used to inform the design of an outreach activity and might be considered homogeneous across institutions. For example, outreach activities can be



featured as case studies in the Research Excellence Framework (REF) (McLaughlin et al., 2018); the Knowledge Exchange Framework includes 'public and community engagement' as one of seven key metrics (UKRI, 2023); and the Knowledge Exchange Concordat gives 'engagement' as one of its eight guiding principles. Additionally, the Teaching Excellence Framework is cited as one reason for academics to get involved with outreach activities as it '*offers significant scope for impact on subsequent work in higher education, particularly with regard to pedagogy*' (Johnson et al., 2019).

These recognised markers of impact and success in academia can be incorporated into the design of an outreach project, which is where the support of '*professional public engagement support staff*' can be of benefit (Watermeyer & Lewis, 2018).

A unified approach to capturing impact would allow a clearer picture of the benefits of outreach to institutions. However, consolidating individual activities from disparate projects into shared 'measures of success' is difficult. Beyond the number of attendees at events, few outcomes are shared between all types of activity. Practitioners should be aware of the need to capture and demonstrate impact, and how these impacts contribute towards a larger national picture.

#### *How can outreach contribute towards a co-ordinated national drive?*

In the simplest sense, outreach needs to be captured and recorded for it to benefit beyond the individual session. Eilam et al., (2016) describe two approaches: *bottom-up* and *top-down*. A bottom-up approach grows organically from an academic's networks and their passion to deliver content. While this is admirable, to ensure activity has maximum benefit, isolated activities need to be brought into a cohesive whole. This can be achieved through a top-down model: aligned with university strategy and conceived as part of a larger project.

Long-term planning is needed to ensure projects can be measured effectively. If the aim is to inspire young people to apply to HE, an intervention aimed at 10-year-olds must wait 8 years to see results. Funding for projects of this length is rare, and this is cited as a particular barrier to the success of STEM interventions by Rincon and George-Jackson (2014).

With hundreds of institutions, third-party providers, charities, and more delivering outreach across the country, sharing knowledge and collaborating is vital. A landmark study from the Royal Academy of Engineering suggested that collaboration across the sector is a key component of an effective national offering (Royal Academy of Engineering, 2016).

From our own data within WMG at the University of Warwick, roughly 10% of staff participate in one outreach activity per year (internal data). Given there are roughly 230,000 academics employed within the UK<sup>i</sup>, estimating that 23,000 academics take part in one outreach or public engagement activity each year is not unreasonable.

If outreach is to achieve positive societal change and do more than ‘make up the numbers’, the outreach must be of a high quality, drawing from a body of knowledge shared between outreach practitioners across institutions. For example, the Office for Students commissioned research into standards to support practitioners in evaluating outreach (**Office for Students, 2019**). To effectively use these standards, there needs to be a system in place to develop and support academics, their skills, and the content they deliver.

Examining the literature, one finds a great many articles about outreach projects. However, much of the literature focuses on the audience who receive the intervention and not on the academics who deliver it.

#### *How are academics being supported and trained?*

In a letter from the executive publisher of *Science*, Leshner states:

*University science departments should design specific programs to train graduate students and postdoctoral fellows in public communication (Leshner, 2007)*

These training programmes must, however, also be available and valuable to all academics for the university to be able to deliver the grand societal aims of widening participation.

Training must deliver the skills needed to engage a young audience. Young people respond strongly to real life examples and stories (Locklear, 2014). Academics should embrace this and consider themselves as role models for the academic career. Role models are proven to inspire young people in specific subjects (**Nowiński & Haddoud, 2019**), in overcoming assumptions about subjects (**Bonny, 2018; Henri et al., 2023**), and in the widening participation context (**Heaslip et al., 2020**). A key difference between schoolteachers and outreach practitioners in their pedagogical approach is the role of personal stories in delivery (**McCauley et al., 2018**).

An important tool to contextualising complex ideas (such as technical academic knowledge) is storytelling. Storytelling has proven effective in several outreach projects (**Bik et al., 2015; Clarke et al., 2023; Fogg-Rogers, Sardo, et al., 2017**) but does require training to develop (**Rubegni et al., 2023**). Making academic content transferrable to everyday life, through weaving a story-like narrative into the content, facilitates

conversations outside of the intervention, which in turn supports the development of science capital (**Archer et al., 2013**).<sup>ii</sup>

Given that so many academics take part in outreach, it is logical to bring likeminded individuals together to share their experiences with each other. Donner and Wang (**2013**) describe a community-based approach where sessions work best with *'peer-to-peer ... sharing of challenges and best practices, hands-on modelling of an activity where participants can observe best practices being implemented, reflection about the rationale behind the practice, and time to adapt the strategy to participants'*. Another example aimed to create a community of academics who could *'share their story'* with positive impacts on the audience (**Peeples et al., 2017**).

Innovative approaches to outreach can create a richer experience for the academics as well as the students involved. For example, approaches utilising drama as part of engineering (**Green et al., 2020**) and chemistry (**Kerby et al., 2010**) education boosted the confidence of academics and their ability to present to different audiences, while building links between the arts and sciences.

#### *How does outreach benefit academics?*

A comprehensive outreach programme does place additional work and pressure on institutions, which may be considered a burden (**Watermeyer, 2011; Weir, 2004**). This makes it important to reframe the benefits of outreach from recruiting students to the university towards the benefits to the person delivering activities. Shifting our attention from institution-wide benefits to individuals should be considered in the planning stage.

Firstly, we can consider how outreach can be made easier, to reduce pressures and workload considerations on the research and teaching staff. Workload is cited as a significant barrier to academics' involvement in outreach (**Khan & Siriwardhane, 2021**). To address this, some institutions have a dedicated member of staff in position in each department to bridge between academia and the school education system, which is presented as a positive case by Johnson et al., (**2019**). It should be noted that, in some cases, the only viable way for a department to resource outreach is for a member of existing academic staff to co-ordinate it as a part time additional responsibility. In these cases, networks of similar staff across the institution could provide opportunities for collaborative practice that reduce workload.

One way of minimising the additional pressure placed on academics who devote time and resources to outreach is to design activities that deliver academic value in a format that adds value to their careers.

Two key aspects of academic life, research and teaching, may be bolstered by a lively outreach programme. Papers written by academics describing projects, proving the academic rigour and pedagogy in their outreach, are an obvious metric of academic success (e.g., **Struthers and McConnell, 2023**). Outreach may also be drawn on to inspire and improve teaching (**Illingworth & Roop, 2015**). In some cases, public dialogue may steer the direction of research or be crucial to its success, which relies on there being a two-way flow of communication. Citizen science, for example, directly draws on the experience of the public to gather data (**Bell et al., 2016; Hosie et al., 2024; Murray et al., 2017**).

Next, the recognition that is awarded to academics for contributing towards a university's public-facing goals. Outreach contributions should be used as evidence for applications for fellowships, awards, and promotions. In many cases, all three of these list 'impact' as a category that requires evidence. Recording contributions to outreach activities should certainly count towards this. Work has been undertaken in the UK (**Macfarlane, 2007**), Australia (**Smith et al., 2014**), and the USA (**Chang, 2000**) to ensure that outreach activity aligns with promotion criteria. The University of Warwick has 'Impact, Outreach, and Engagement' as one of the sections of the promotion pathway (**University of Warwick, 2024**). However, it is important to recognise that capturing impact can be challenging and add additional pressure. Templates, models of best practice, and sharing experience can help to ensure that impacts are captured effectively and efficiently.

### **The STEM Connections Model**

Drawing on the literature precedent, the STEM Connections approach was designed to train and develop academic staff to deliver outreach activities. It can be broken down into four stages: *training, development, delivery, and legacy*.

#### *Training*

The project built a community of academics who shared ideas and practice with each other. Academics were recruited from across the university's Science, Engineering and Medicine faculty. Cohort 1 comprised 11 academics and Cohort 2 comprised 12, representing 4 departments.

Cohort 1 received two days of training, while Cohort 2 received three days of training. Training sessions from third-party providers focussed on how to include personal elements into their presentation and weave storytelling techniques throughout. Both cohorts received a full day of training at Coventry Transport Museum provided by CV Life, drawing on the expertise of the museum to engage diverse audiences, adapting their presentations to match the needs in the room.

### **Development**

A project Co-ordinator role was incorporated into the bid to build the community, and lessen the workload required to plan the activities themselves.

The Co-ordinator arranged '*Tinker and Tea*' sessions, where components, tools, gadgets, etc. were available for academics to explore how they could build a new prop to explain their field of interest. The demonstrations and props were developed to capture the interest of the audience, allowing the presenters the opportunity to discuss their topic easily and weave their own personal story in.

An additional role of the Co-ordinator was liaison with schools and arrangement of which presenters were available to present at each school.

### **Delivery**

Details of the pedagogy and teaching of the STEM Connections project will be described in another paper.<sup>iii</sup> In short, a *School Roadshow* was organised to provide a 'training ground' for the academics to practise their skills and work with their demonstration. In these roadshows, 4 academics set up in a school hall and groups of students rotated between these academics every 10 minutes, experiencing a range of different topics. The Co-ordinator played the role of host and provided a solid platform for the academics to present from, handling questions, timings, and floor management. This allowed the academics to focus entirely on the group in front of them. Following the *School Roadshow*, every academic on the programme was provided a space in Coventry Transport Museum for a takeover event called the *Showcase*. In the *Showcase*, around 100 students (per event, one for Cohort 1 and another for Cohort 2) rotated around the academics moving through the museum's galleries. Each activity was matched to the theme of the gallery: with materials science demonstrations directly below an exposed car chassis, a demonstration of generating electricity with a hand crank in a gallery of bicycle history, etc.

### **Legacy**

A project website was populated with interview videos of each academic answering questions about their back-story and motivation to enter STEM careers. Cohort 2 also recorded a video version of their demonstrations. These video resources were supported by 'do-it-at-home' versions of each demonstration, alongside explanations of the technology involved, and its applications in the real world. These resources are freely available on the STEM Connections project website.<sup>iv</sup>

Each academic was provided with their videos and professional photography (headshots and at events) to use for any profile-building purposes.

The outputs of the project are included in the WMG Outreach annual reports, presented at the International Research Culture Conference 2023 and at the Engineering Education Research Network 2023 conference.

Funding continuity<sup>v</sup> was a challenge to establishing the legacy of this project. The two cohorts were funded through separate application processes with no guarantee of success. Had there been a continuous period of funding a crossover period between the two cohorts could have been designed wherein mentoring and knowledge exchange could have occurred.

## Reflections

A group of academics now have a ready-to-go activity that can be used at a variety of events. This supports our existing outreach activity, as well as other groups at the University such as the Warwick Institute of Engagement. In total, STEM Connections demonstrations have been used at 25 separate WMG events (internal data, not including activity delivered for other departments).

Reflection is an important stage in the pedagogical approach to outreach (McClure et al., 2020), informing future delivery. Staff in both cohorts were asked to reflect on the process and how it had impacted them. These reflections are broken down by which cohort the academic was in and divided into topics. Firstly, **Table 1** below reflects on the value of producing materials that can be used multiple times in an outreach context, rather than delivering in one school and never used again.

*Table 1: Quotes from academics relating to the delivery of the materials produced in STEM Connections outside of the initial project scope*

Topic	Quote	Cohort
Value of the materials to existing university activities.	<i>The demonstrators have been used at open days and have gone down very well with staff and students. It has led to the [department] making our own demonstrators on wider topics for open days and outreach activities.</i>	1
Inspiration to continue to engage with outreach activities.	<i>Often researchers are left on their own to put together their own outreach projects, but are insufficiently funded and supported, making outreach seem too daunting to try.</i>  <i>STEM connections allowed us to partner with experts in PE who helped us shape our rough ideas into something tangible and achievable in only a few weeks- this really built my confidence in building something of my own and challenged me to see my research from new angles. It really had a huge positive impact on my skills as a science communicator, which led</i>	1

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*me to apply for grants of my own to take the work I did with STEM connections to new schools and science festivals- something I wouldn't have dreamed of doing before the project.*

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Open days are an important contribution towards university admissions, so additional value that has been added to these by the materials produced in STEM Connections is a boon to the institution itself. The second quote reveals that the staff involved were motivated and inspired to continue with outreach activities and empowered to deliver on their own after the project.

The developed activities are also useful outside of the context of outreach. **Table 2** (below) contains reflections related to the impact of STEM Connections on academic teaching.

*Table 2: Quotes from academics relating to impacts on university teaching*

Topic	Quote	Cohort
Teaching practice changes through working with a non-university partner.	<i>I have learned a lot during the project. Mostly thanks to the training sessions that we had (one in Coventry Transport Museum and the one in the University's conference centre). These training sessions were very practical and informative. I have learned about the importance of student engagement. I can apply the knowledge I gained not only in doing outreach activities but also in my day-to-day teaching.</i>	1
Teaching practice changes after delivering outreach activities to new audiences.	<i>The challenge (which was very different to my usual day-to-day activities at the university) was to boil a very complicated subject down to its very essence and then give a (very) short presentation all whilst ensuring it was fun, interactive and engaging. This is no mean feat I can tell you (especially as the children weren't shy about letting you know if you got it even the tiniest bit wrong), but it has definitely helped to sharpen my ideas about teaching subject matter to my students here at Warwick.</i>	2
Use of produced materials during undergraduate lectures.	<i>STEM Connections has given me opportunities to translate my theoretical knowledge in [subject area] to practical demonstrations which I widely use in my [subject] modules at the University of Warwick ... I learned about public engagement from WMG STEM Connections team and use the transferrable skills to develop creative and innovative teaching practice in the field ... This teaching method has inspired significant classroom interactions and a few out-of-box thinking questions from the students which forms the basis for interactive classroom style learning and enhanced student engagement.</i>	2

Finally, **Table 3** (below) contains a selection of quotes on other aspects of the project, which the academics felt were of benefit to them. These do not fit one fixed theme, but in each case are interesting points to learn from. A reflection on the value of the community adds legitimacy to the approach taken in STEM Connections to create cohorts in terms of developing the materials, but it had additional benefits in that academics felt that the project was a valuable networking opportunity outside of

outreach. Technical staff were engaged in the project to ensure that materials produced were of a high quality. The project team have worked with technical staff extensively, with great benefit to the work that we are able to deliver, so their engagement was part of our culture of working to begin with. However, this is not the case universally across all institutions, but the tide is turning towards recognising the value of technical staff at universities. This is captured in one quote in the table (**Table 3**).

*Table 3: Quotes from the academics on other outcomes of the project*

Topic	Quote	Cohort
Working in a community of like-minded individuals.	<i>Throughout the whole process, the STEM Connections team and my fellow participants was really very supportive and that also made it fun to be part of – it was nice getting to network with members of staff I wouldn't ordinarily meet and also to find out about all the different research that taking place at the university.</i>	2
Networking and publicity.	<i>It's been really good to meet other academics from WMG and other departments of the university that are involved in Outreach, really good to try different tech for outreach activities and enjoyable to attend workshops for getting better at STEM demonstrations and public speaking. The publicity has also benefitted my personal career profile.</i>	1
Working with technical staff.	<i>The STEM Connections project has illustrated what is possible ... when we engage technical staff. [It] has set the standard on training provision, departmental engagement and engaging non-academic staff.</i>	1
Enjoying the project.	<i>I enjoyed the creative, practical side of the project. The fact that I could design and build something new from the scratch was exhilarating. I also loved the time we spent with the children. They have been extremely enthusiastic. Their curiosity and engagement made me feel excited about science again. Seeing children discover new scientific ideas was fascinating.</i>	1

## **Discussion and Recommendations**

From the authors' perspectives, STEM Connections was an enjoyable exploration of a range of topics. Since the academics were sharing their personal motivations while presenting their areas of expertise, their passion was plain to see. The community built across both cohorts is an energetic and inspiring group, who continue to contribute to their departments' reputations. The authors whole-heartedly encourage the reader to consider whether an outreach project that brings together a group of outreach-interested-but-inexperienced academics with an outreach 'professional' could work in their context. Importantly, activity



should be designed to keep the academic at the forefront of the delivery and in the spotlight for any media coverage.

The above sections can be summarised into elements of outreach that are crucial to maximising benefit to the academics and to the university (**Table 4**).

*Table 4: Crucial Outreach Elements for Maximising Academic & Institutional Benefits*

Academic staff should be offered training and support to deliver effective outreach.
Professional outreach staff can help to manage the workloads of academics by being involved with co-ordinating the activities.
These outreach teams should also ensure that activities are delivered to the target audiences that matter to the University's strategy.
Individual activities should contribute towards a larger project and form a cohesive body of work towards a defined aim.
A community of academics and outreach staff should be built to ensure that knowledge is shared, and work is collaborative in nature.
Activity should be documented and visible, celebrating the academics who delivered the work.
Activity should be documented and visible, celebrating the academics who delivered the work.
The focus of the activity should be on the <i>experience</i> the young people have, and not the content that is delivered.
Academics should embrace their position as role models when speaking to young people and may include elements of their personal stories in their content.

Reflections from the cohorts of academics demonstrate the design of STEM Connections supported these aims. Following the success of this model the authors are seeking funding to continue the project and they are sharing the approach and learnings from it. They are continuing efforts to embed outreach into department and institutional strategies.

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## **Acknowledgements**

The contributions of the academics who made up the two STEM Connections cohort must be recognised. Their exceptional commitment to producing high quality demonstration pieces and presenting them so wonderfully at events made this event what it is. Thank you to Farah Villa-Lopez, Alex Baker, Tishtrya Mehta, Rohin Titmarsh, Fanfu Wu, Magdalena Cieslak, Antonia Betzou, Kevin Couling, Claire Dancer, Tom Goodman, Mona Faraji Niri, Jiaqi Duan, Ishwar Kapoor, Jose Ortiz Gonzalez, Umair Paracha, Robin T. George, Xinkai Tian, Piotr Mazurkiewicz, Magdalena Rybak, Piotr Klin, Adriana Smith Ortiz, Karen Kudar, and Negar Riazifar.

Partnering with a local cultural institution, CV Life, provided a unique perspective on our engagement activities and how we ran workshops. We would like to thank them for their invaluable expertise.

The Co-ordinator role for the first cohort of the project was Rebecca Swan-McAdam and her efforts were vital in the success of the early stages of the project.

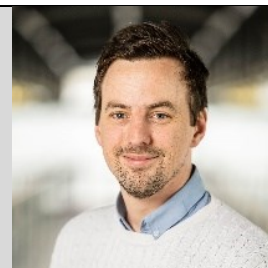
The demonstration pieces were made possible by the technical expertise of the WMG Technical Services team. Their insight into designing, using, and manufacturing all elements of the props and demonstrations is gratefully acknowledged.

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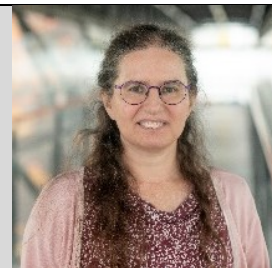
Phil Jemmett has a Ph.D. in chemistry but left the lab to share science and inspire young people. He has delivered events in libraries, museums, community groups, schools, universities, and once in someone's lounge. Phil works at WMG at the University of Warwick with experts in cutting-edge technologies, sharing their stories with young and old to build trust in science and engineering. After all – if people don't trust the researchers making innovations, the products won't make it out of the university. Phil believes inspiring the workforce of the future to go into engineering is key to building a green future.



Caroline Cannon is a textiles expert having worked in the fashion industry from testing PPE equipment to designing garments with unusual materials like paper. She then moved into teaching Design and Technology and so has a deep understanding of how young people think about materials, their properties, and their applications. Since joining WMG to support the STEM Connections project Caroline has worked with academics to find a practical way to demonstrate their areas of expertise to the widest possible audience, and with teachers to put a new twist on how we run outreach events with schools.



Margaret Low works with young people encouraging them to become creators as well as consumers of technology in her role as Director of Outreach and Widening Participation for WMG, University of Warwick. Margaret's interactive workshops explore creative aspects of technology. She collaborates with organisations and communities to explore inclusive, creative learning experiences using technology. Margaret has decades of experience in creating a culture of outreach within a university. Her contributions to the sector were recognised in 2021 when she was awarded an MBE for her services to public engagement and widening participation in the Queen's Birthday honours.



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Table 4: Crucial Outreach Elements for Maximising Academic & Institutional Benefits

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## Endnotes

<sup>i</sup> Statistics taken from the HESA website: [www.hesa.ac.uk](http://www.hesa.ac.uk)

<sup>ii</sup> During the editorial review process the editor noted: “An interesting consideration is that in a very sweeping way those in the STEM subjects tend to not be those who are very comfortable with the more performative elements of contextualising knowledge for a wider audience - a really interesting example of recognising this is the Alda centre (<https://aldacenter.org/>) which works to bring acting techniques to STEM academics to deliver their knowledge to wider audiences.” The authors agree with this point and think that it merits wider discussion than this note allows. See also Green *et al.* (2020).

<sup>iii</sup> This will appear in upcoming Conference Proceedings for the Engineering Education Research Network.

<sup>iv</sup> These resources can be found at: [www.warwick.ac.uk/stemconnections](http://www.warwick.ac.uk/stemconnections).

<sup>v</sup> The funding for this project was provided for an initial nine-month window for a single cohort. A separate application for a second cohort was made roughly three-months after the end of the first project with confirmation of funding coming roughly three-months after that. The two cohorts were funded and run over the same time of year (January-July). An application for a third project cohort was unsuccessful. While the project team worked hard to build overlap and peer-to-peer sharing between the two cohorts to ensure continuity, the significant gap in timing between the two cohorts reduced the possibility of building links between the communities.

# The Moral Dimension to Developing Research Culture: Advocating for caught, taught and sought approaches

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## Abstract

*The paper seeks to justify a moral dimension to research culture, both in terms of the moral commitment to pursuing a shared sense of purpose by researchers, and a moral obligation to provide a positive environment for researchers to flourish in by the employer. The paper draws on synergies and comparisons with work on character education, in schools and professions, and which has found prominence in education policy and practice since 2012. Where work on character education in higher Education Institutions (HEIs) is in its infancy in the UK, there are both examples from overseas (USA, Singapore) and transferable elements from work in schools that can help to demonstrate that focussing on moral development is beneficial to all. This paper views the cultivation of research culture not as a 'fix' for negative experiences that researchers encounter, nor as a means to correct perceptions that see culture as inherently bad. By viewing research culture through a moral lens, it is possible to approach its development and cultivation in holistic and encompassing ways which seek to allow researchers to become the best versions of themselves.*

*In establishing what the moral dimension to research culture is, I suggest that we can learn from work on character education to further explore frameworks for embedding provision within HEIs for morally focussed research culture initiatives. The paper draws insights from successes in how character education has been embedded in schools and professional education, with a particular focus on a framework for character and constitutive of four categories of virtue, embracing individual moral development with collective, communal citizenship. Further, I present three approaches for a framework for how it can be developed; where culture is 'caught' through a positive and collegial ethos, 'taught' through a combination of discrete teaching and learning activities, which, in combination, can encourage researchers and those supporting research to*

*'seek' out their own opportunities to develop research culture more actively.*

*The paper concludes with two main recommendations to view culture as more than a 'nice to have', but as means to facilitate positive, impactful research; and to actively cultivate culture through caught and taught approaches that will lead to researchers seeking opportunities to do so themselves.*

**Keywords:** research culture; character education; caught, taught and sought

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## **Introduction: What is the Moral Dimension to Research Culture?**

Research Culture is a term that is growing in prominence, interest and criticism. Its explicit inclusion in the Research Excellence Framework (REF) 2029 under 'People, Culture and Environment' (PCE) has provoked Higher Education Institutions (HEIs) to place more emphasis on developing research culture and capturing data that shows said development (see **Research England, 2023**). Recently, REF published an update saying that it was 'committed to the development of a robust set of indicators and a robust process for assessment of PCE within REF' and has launched a pilot exercise to test appropriate metrics and indicators (**Research England, 2024**). There is a way to go, but this is a start in overcoming scepticism in seeing culture as a 'catch all' for undefined areas of research support and provision.

This recent update still does not offer clarity over what research culture is, how it is to be defined within a REF context, nor how it should be measured. Many UK universities have created dedicated webpages to research culture where they offer some form of definition (albeit, in the most part, somewhat vague and underdeveloped definitions). However, there is a shared agreement and collective will to commit to developing something that positively embraces challenges facing research and researchers in higher education, that seeks to create pathways for career progression, personal development, and eradicate negative behaviours such as bullying, harassment and of making unreasonable expectations of others.

Universities are beginning to state the priority challenges that a positive research culture should seek to address. The Research Culture Enablers Network, run out of the University of Warwick, found that research leadership was the number one area to prioritise, followed by psychological safety and creating responsible research culture metrics.

The reason for including these is to show the diversity of both opinion and challenge for those working in the research culture space.

Where there agreement on what culture covers is around viewing research culture as encompassing an amalgam of cross-disciplinary, cross-career stage, and cross-institutional activities that constitute the ethos and community of working. Early Career Researcher (ECR) development, recruitment and selection procedures, equality, diversity and inclusion (EDI) practices, career pathways, collegial working environments contribute to the setting of a research culture. These, individually, will receive mention in HEIs organisational strategies, yet are varied and disparate.

Critics may deem such topics too disparate to consider under one umbrella term to be able to address them with any meaningful significance. This is the challenge that HEIs face where they prioritise research culture in internal and external communications and attempt to demonstrate positive practices that are authentic in nature, and not simply motivated by scoring well in future REF metrics. However, I say that by viewing culture through a moral lens can assist with a coherence and consistency of approach in finding ways to address and cultivate culture. This is already present in much of the spiel that HEIs are writing on culture, whether meant intentionally or not. This moral obligation is also something that runs through academic work on what constitutes research (see for example **Callahan, 2003: 57-84; Wolfe, 1989**).

The link to matters of moral obligation and ethics can already be seen in the statements on culture that universities are publishing and the links they are drawing in what constitutes culture. For example, the University of Birmingham culture webpages offer links to a sub-page on 'inclusive and respectful environments', as part of a focus on equality, diversity and inclusion (EDI), combatting harassment and shared institutional values. In addition, pages on more generalised 'responsible research', 'integrity and ethics', 'supporting your career' and researcher training and development' show how culture can be seen as an umbrella for institutional commitments to enhancing workplace experiences of staff.

Ultimately, this moral obligation from HEIs and its leaders is rooted in helping researchers be the best versions of themselves. It is rooted in an understanding of the purpose of research, what it is for and what it attempts to achieve. Further, it involves an acceptance that research can be intrusive, involves human interactions, and has real world impact. Therefore, as a collective, there is an obligation for HEIs to ensure that the research it puts its name to is undertaken in an ethically sound manner, which also ensures that researchers are supported to be morally

upstanding in the way they interact with participants, analyse data and report findings.

HEIs already have ethics committees that are tasked with ensuring that research is undertaken in an ethically sound manner, however a moral view of research culture goes broader. Where ethics committees do not tread is with regards how researchers interact with one another, how they are supported by and support colleagues, how they make contributions to the wider good of the HEI, rather than remain narrowly confined within their disciplinary silo. In the same way that we accept teachers have a moral obligation to ensure pupils are educated in a morally salient manner, so HEIs should carry a similar obligation with regards its research community.

In foregrounding the moral dimension to research culture, I attribute some degree of moral responsibility for those leading culture initiatives in HEIs. This is in the same way that there is a moral obligation for teachers in schools to take responsibility for the moral development of students and pupils that are in their care. This is an aspect of teaching that many teachers value and prioritise as they begin their teacher training, but is not something that is always maintained in practice (see **Arthur et al., 2015**).

However, establishing a framework by which morally focussed culture initiatives can take root, akin to successful attempts in character education, I propose that it is possible to cultivate a morally imbued research culture, The approach that I propose focuses on 'caught', 'taught' and 'sought' approaches which marry organic and prescriptive ideas which are intended to create a sense of purpose in the individual to seek out their own opportunities to carry on their moral development (**Jubilee Centre, 2022a**).

Having introduced why learning from character education circles is relevant and informative, I will go on to introduce each of the three approaches and offer definitions and examples of how they can be applied to research culture.

The paper concludes with two recommendations. First, that for research culture to be meaningful and effective, it must be seen as more than a 'nice to have' in HEI strategy and vision, forming something which is part of meaningful strategy and authentic decision making, as a means to facilitate positive, impactful research. Secondly, to actively cultivate positive research culture in HEIs and with all stakeholders and partners involved, that doing so through an holistic approach that embraces caught and taught approaches, will lead to researchers seeking opportunities to do so themselves, where they see the benefit not only to themselves and

their own research, but what being part of a rich and diverse culture can achieve..

### **Research Culture as Positive**

Where we speak of research culture, the notion of it being 'positive', rather than 'negative' is often implied, rather than explicitly stated. As the term receives more attention, and conceptions and definitions are unpacked, so HEIs will need to become more explicit in addressing what they are doing to cultivate culture amongst research staff, and become proactive, rather than reactive, in developing one. At present, research culture is being used as a term charged with combatting negative practices, such as bullying, uncertainty about contracts, workload pressures, the challenges of the funding landscape for research, and the general pressures of working in HE research. It is essential that we do not see embracing research culture as a way to 'fix' these negative aspects. Seeing it as such would be short-sighted, short-termist and narrow any conception of research culture. Focussing only on correcting the negatives will not allow for growth, cultivation of new ideas, acknowledgement of positive experiences, from the enablers within the research culture community. Instead, HEIs should think longer-term, embracing the moral and requirements of leading and delivering world-class research and cultivating a research culture that is permissive and enabling for all involved.

This conception allows us to address the moral dimension to developing culture from a community perspective. Indeed, we can use more morally-significant language when considering both what that development entails and the anticipated outcomes of developing such a culture. This is language familiar to HEIs, whether they explicitly embrace any moral dimension or not, where universities reference values statements and expected behaviours. The outcome of the positive development of research culture is described by some HEIs in terms of enabling researchers and related personnel to 'thrive' and 'flourish'. The notions of 'thriving' and 'flourishing' are somewhat synonymous; of growing vigorously, but of becoming the best version of yourself – going beyond growth in a professional sense but demanding 'engagement with self-transcendent ideals and ignite awe-filled enchantment' (**Kristjánsson, 2019: 1**). Such a conception of flourishing as an ultimate aim of good education provides a common purpose for those involved in research to unite around.

Some may ask why we need to consider any notion of a moral dimension to research culture – we come to work, do our jobs, get paid and go home. This is another short-sighted, restricted view of professional life. If we only operated in terms of the functional tasks that we are required to do, with

a 'clock in and clock out' mentality, any notion of a community dimension of culture becomes stunted. If we look at 'culture' in the broad sense of the ideas and behaviours of a particular group of people, we can embrace its social dimension and seek the benefits of actively participating in a community, both personally and culturally.

This paper adopts an approach that contributing to research culture is something that each of us linked to research can feel an imperative to contribute to. Regardless of what our roles are, from external partners outside of academia, to administrative support staff, to researchers working under the direction of PIs and co-Is, to funders, research councils, academic leads, research managers and HEI Executive Boards, we all have a role to play in cultivating the culture in which we want to work and in which we want to develop future researchers. As part of that, acknowledging that there is a moral dimension to culture is essential to ensure that experiences are positive, HEIs are seen as pleasant, supportive, and rewarding places to work. This is, in short, because supporting, applying for and undertaking impactful research should be relationship-based, requiring effective modes of communication across sectors and departments, reliant on adequate inter-personal interactions for effective teamworking, rooted in collegial spirit. Within any inter-personal communication dimension to work, there is an affective nature, involving the expression of various virtues and emotions, which require some level of acknowledgment, regulation and development, at an individual and at an organisational level.

In short, research aims to contribute to the public good. This contribution is not always made explicit, either by researchers or HEIs, but is important to acknowledge in research culture terms. In terms of 'research', embracing a morally positive research culture can move researchers out of silos, encourage interdisciplinarity, and positively impact institutions in a myriad of ways. I accept that, for many, embracing concepts of moral and ethical challenge can be difficult. However, this is where recent research and application of character education in schools and professions can be of use, both in terms of conceptualising the moral imperative to 'do' research in an ethical way and cultivating approaches to providing those in the research community with an ethically sound moral framework. I contend that embracing what has worked in character education can be applied to HEO research culture, only if we acknowledge that research has an ethical aspect, and that HEIs hold a responsibility that extends beyond the instrumental enabling of research to take place.



## **Learning from character education**

I attest that there is a moral dimension to the cultivation of research culture at HEIs that employ scholars responsible for the education and training of the researchers of the future. That moral dimension encompasses a responsibility of researchers to conduct ethically sound research, for HEIs to ensure that research undertaken in its name is ethical, and provide an environment for research-related staff to thrive. Investigating the moral dimension of education raises big questions that researchers and philosophers have grappled with for centuries. There has been a rise in interest in ‘character education’ in the UK from 2010 onwards. In 2016, character education became a formal aspect of English Education Policy, under the, then, Education Minister Baroness Nicky Morgan. In 2019, it was formalised in the Ofsted Inspection Handbook for schools and other education providers (including departments of teacher education) (**OfSTED, 2019**).

There has been extensive research undertaken in the UK since then that has sought to consider ‘character education’ from a range of perspectives, theoretically and empirically. Much of this work has been led by the Jubilee Centre for Character and Virtues, at the University of Birmingham, where researchers have collected data from tens of thousands of participants, worked with thousands of teachers and teacher educators at hundreds of schools, HEIs, professions, as well as broadening outreach and impact across a number of countries, internationally. The work of the Jubilee Centre is rooted in neo-Aristotelian virtue ethics, seeing character as ‘a set of personal traits or dispositions that produce specific moral emotions, inform motivation, and guide conduct. Character education includes all explicit and implicit educational activities that help young people to develop positive personal strengths called virtues.’ (**Jubilee Centre, 2022a: 7**).

Neo-Aristotelian moral theory underpins many (most) modern day approaches to character development. Here, I use ‘character development’ and ‘moral development’ somewhat interchangeably, intentionally to show how agreed definitions and concepts do not necessarily have to have an agreed language, but that a shared set of guiding principles can often bear fruit. For example, for those who may take issue with the term ‘character’ – which could be scholars and professional support colleagues who do not hold any philosophical grounding in moral theory, or those who subscribe to a non-virtue ethical approach). Whilst explaining the pros (and cons) of neo-Aristotelian virtue ethics is somewhat outside the scope of this article, I refer to work by Kristján Kristjánsson, David Carr and others on kinds of moral theory and nuances within virtue ethics (**see for example Carr, Arthur and**

**Kristjánsson, 2017**) and its application to teaching (**Cooke, 2017; Arthur et al., 2016**), higher education (**Jubilee Centre, 2021**) and professional ethics (**Arthur et al., 2023; Carr, 2018**).

The Jubilee Centre Framework for Character Education in Schools (2022a) is a document that seeks to provide an overview of the theory of moral education, in accessible language for practitioners and school leaders, whilst embracing the moral obligation that education at all levels involves, and offering a coherent approach to delivering meaningful and authentic provision and activity. I argue that its identification of ‘caught’, ‘taught’ and ‘sought’ approaches to moral education can be applied in a research culture context.

### **The need for character-led provision**

Formalised provision for character and moral education is intended to build on what already takes place in the setting, be it a school, university or other organisation. It is presented as a lens through which we can view moral development and professional development and, in HEIs, the ways in which research, teaching and learning are modelled, delivered and engaged. In exploring the moral dimensions of research culture, we can provide a framework for research culture to become an embedded part of research. Consideration of the type of research that ‘we’ (institutionally, collegially and individually) want to undertake, how we wish to go about doing it, and its impact on colleagues and external partners are often at the heart of research strategies and visions that HEIs outline in their external communications, but much less unpacked in terms of understandings and conceptions that underpin the visions.

The character and integrity of researchers and research-intensive institutions should be regarded as more fundamental than personality or personal style as a researcher or senior leader, and be regarded as no less important than mastery of research methodology, subject content, and techniques for delivering impactful research.

Often, research strategy language that HEIs use is amoral, instrumental, and skills-orientated, or couched in adherence to university policies. Where the notion of developing a positive research culture has arisen in recent months, so the inclusion of language that can take discussions in a moral direction has begun to come to the fore, with the idea that a positive culture can help us ‘thrive’ and ‘flourish’, as already mentioned. Further, though, there is a growing reference to specific virtues in institutional environment and culture statements, such as engaging in critical thinking, undertaking research in a compassionate and responsible manner, and upholding values of integrity, honesty, and the like, all of which demand high moral standards in order to uphold (e.g., Flourish@Durham).

Perhaps because conceptions of character and virtue are complex, sometimes contested, and often seen as demanding or unattainable, so organisations and institutions may shy away from placing any central focus on them. However, character education research has shown that a focus on moral development and virtues is something desired by parents, pupils and teachers – in the context of schools, can help develop moral decision making – in educational contexts and in professional practice, and provide a sense of moral purpose in the work that people do. For research in each of these areas, see, for example, Harrison, Dineen and Moller (2018); Arthur and Earl (2020); Arthur et al (2021).

### **Caught, taught and sought approaches**

In terms of delivering activities and provision that embraces the moral dimension to education and research, I propose that these can fall into three categories, each working in synergy with the others, but seen very much with the first two provision a foundation for the development of the third.

Firstly, caught approaches to moral development can foreground ethical leadership, culture and ethos. Second, taught approaches include direct teaching of rationale, language and tools. Third, members of the research culture community will seek opportunities freely for moral development, on their own, and as part of a collective. Many of the approaches and activities that are mentioned below are drawn from those that have been evidenced as contributing to character education provision in schools, but then adapted for higher education. See the Character Teaching Inventory as an empirically informed document that details over 70 practices (Jubilee Centre, 2022b; Arthur, Fullard and O’Leary, 2022).

With regards caught approaches, I propose that HEIs intent on embracing the moral dimension of research culture can harness existing environments and communities, and apply a moral lens to developing the culture and ethos of an organisation. With regards environment, I give examples of how and where this can include a moral dimension. This could include the physical space in which people work, maximising the conditions for collegial and collaborative working; considering how to foreground and how to celebrate positive spaces for moral, spiritual, social and cultural interactions. Focussing on vision and ethos of an institution through cultivation of a morally positive community, with clear and regular communication at all levels, visibility of senior figures, and a clear ethos and strategy for moral development, amongst other institutional priorities. Relationships are key to caught provision, with interactions at all levels, between students, staff, researchers and senior leaders, as well as incorporating the wider community and stakeholders, involving the development of virtues such as empathy, compassion, citizenship and

service. Universities are not islands, but part of regional, national and international communities, as beacons of educational and research excellence.

Caught activities are often best achieved where championed by senior leaders. An example to spotlight is the University of Birmingham School, which opened in 2015, and is explicitly dedicated to character development of students, and of staff in all posts. Schools offer relevant and engaged models for HEIs to learn from, not just in terms of education, teaching and learning, but also from a moral dimension. For example, their practices with regards recruitment and selection prioritise character education, in the way in which posts are advertised, candidates are selected, and feedback is given. It is also an obligation of all candidates invited to interview to discuss what character education means to them and how they will embed it in their everyday practice. In living this aspect of caught provision, so integrating more prescriptive and specific taught practices can enable staff to become more engaged with the moral development of colleagues and students.

With regards taught approaches, these are obviously better placed to be embedded into teaching and learning provision rather than research, through curriculum activities, use of stories and biographies of exemplars, use of moral dilemmas, debates, extra-curricular activities, etc. However, can easily be adopted and supported by researchers and those involved supporting research through peer-review processes, research development strategies, peer-mentoring, development and identification of career pathways, and inclusion in training materials. There are obvious links with tools such as the Vitae Research Development Framework (**Vitae, 2011**) in terms of the expected attributes and behaviours for researchers to do research, so taught approaches to moral development could be woven into existing researcher development frameworks.

It is important to stress that where introducing and extending moral development provision, it is often most successful when it has been viewed not as an additional item to add to one's workload plate, but a way of reconceiving how one views their plate of work-related tasks and responsibilities. This has been proven in character education work in schooling (**Fullard and Edwards, 2020**). In viewing one's work through a lens of character, both in terms of one's own and that of those stakeholders one engages with, so one can be encouraged to act more empathetically, lead with ethical responsibility and undertake research in the most morally accountable way possible.

In doing so, one will actively pursue one's own opportunities to 'give back' in a morally salient manner. Often, institutions will find instances of this happening in practice already, and in championing moral approach to

research, so opportunities for senior leaders to celebrate the character-led practices of staff will emerge. Such celebrations may cement or validate the habits that colleagues have already established. In others, it may identify opportunities to encourage others to engage with such caught and taught approaches. Sought approaches to character development are often seen as 'extra-curricular' or 'enrichment', in that they can often take the form of going outside of one's area of expertise to enhance one's learning. For example, this may be achieved by attending events and lectures in fields or subjects outside of one's primary area of research interest. It may be by running events and activities to support ECR colleagues. More explicitly, organisations are embracing the benefits of providing staff with opportunities to volunteer, through formalised Corporate Social Responsibility activities, or informally through mentoring or inclusion of ECRs on grants and papers. Further, through enabling opportunities for students and staff to promote social awareness and make a positive difference outside of one's immediate area.

## **Conclusion**

This paper has sought to foreground that there is a moral dimension to research culture in HEIs. Further, such a moral dimension should not be seen only as a short term 'fix' for any crisis or ills currently experienced in practice, but as a long-term obligation to create ethically sound research communities.

To achieve this, we can learn from the successes in embedding character education in schools and in professional training, particularly over the past decade, to cultivate morally positive, supportive cultures and communities that seek to develop the character and virtues of participants. Whilst work in this space in HEIs is limited, prioritising the moral development of colleagues is shown to lead to more purposeful, united and collegial working practices and environments (see Rhode, 1985; Carr, 2007; 2018). It is not a stretch to apply this to HEIs, with regards researchers and research culture.

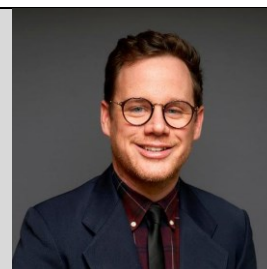
The introduction of 'research culture' through the REF, for HEIs, has led to some good early examples of morally initiatives, such as the Flourish@Durham programme. Further, the creation of the National Centre for Research Culture at the University of Warwick, and the utilisation of moral language in many university strategies and external communications on research culture, demonstrates an awareness, at least at a linguistic level, that culture has a moral component.

So, where we accept and agree that research culture does have a moral dimension, so we can and should learn from the examples of best practice that exist, be they from schools, organisations, or research institutes that are experts in the conceptualisation and practical application of character-building provision.

I end this article making two recommendations. Firstly, that where HEIs do embrace the moral dimension to research culture, that they demonstrate how it is more than a 'nice to have', rather as means to facilitate positive, impactful research. As prioritising the moral development of researchers can lead to an increase in sense of purpose in what a researcher does, this can lend itself positively to greater engagement with one's work, in one's community, and across the institution. Secondly, that a morally salient research culture can be cultivated through caught and taught approaches, as outlined above, that will lead to researchers seeking opportunities to do so. In this regard, where HEIs offer visible provision for cultivating morally focussed research culture initiatives, through caught and taught means, so, as proven with research in character education, researchers will seek out opportunities to sustain and lead such initiatives themselves.

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# Disrupting Academia's Care-Free Narrative: Is the narrative CV just another agent of obfuscation?

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## Abstract

*With its emphasis on countable outcomes and rewards, the conventional academic CV struggles to capture the essential but unquantifiable influences in the knowledge construction process. Mirroring the masculine rationalities on which academic traditions are built, the academic CV is particularly hostile to the disclosure of care-giving experiences, even though care plays an undeniable and integral role in academic work. A development of the academic CV, the narrative CV, is fast becoming a standard requirement in funding applications across Europe and beyond. In principle, the narrative CV encourages recognition of a range of contributions and skillsets beyond bibliometric indicators and funding awards. However, and with specific reference to UK Research and Innovation's *Résumé for Research and Innovation*, we examine the types of 'care obfuscations' and confessions supported by the CV in both its traditional and narrative form. While the narrative CV appears to offer an experimental space for pushing against the care-less presentation of academic work, funders still need to explicitly consider the influence of care and care inequalities in the academic system. Without demonstrating that they have done so, and without sufficient evaluation systems in place, applicants will continue to rely on quantifiable accomplishments, reinforcing the same culture which initially inspired funders' concern for gaining a 'holistic' overview on individual applicants.*

**Keywords:** universities; research; caregiving; CV; funding

## Introduction

Upon gaining traction among research funders and organizations on an international scale, including the Dutch Research Council (**NWO, 2022**), Luxembourg National Research Fund (**2022**), Swiss National Science Foundation (**SNSF, 2022**) and UK Research and Innovation (**UKRI, 2021**), the narrative CV (NCV), and variations thereof, is fast becoming a staple requirement in funding applications. While there is no universal agreement on the structure of a NCV, formats generally depart from the traditional CV's narrow focus on an applicant's education, publication, and funding history. For example, UKRI's *Résumé for Research and Innovation* (R4RI) asks candidates to outline their contributions to 'the development of others' and towards 'wider societal benefit.' By allowing applicants to discuss a wider range of contributions and skillsets, NCV formats aim to address concerns, (often diversity-related,) surrounding an overemphasis on publication numbers, journal-based indicators, and adherence to traditional or linear research career paths (**Fritch et al., 2021**). In theory, the expansion of the content that candidates can include on their CVs facilitates a similar expansion of evaluation criteria. While this impact is not often described explicitly, it can be inferred that legitimizing a broader range of experiences also broadens the pool of credible candidates (**Bordignon et al., 2023b**).

In this critical reflection, we leverage our expertise on the experience of academic caregivers in the UK to explore the NCV's potential to better serve this group in funding applications. Academics who have caring responsibilities, as well as those who engage in care-related activities like pastoral and diversity work, can experience marginalization in the workplace. In a professional setting that values strategy, rigor, and competition, the unpredictable and emotional nature of care can be perceived as disruptive or as a sign that an academic is not fully committed to their role or research. This can result in a phenomenon known as 'care obfuscation', coined by Etheridge (**2023**), which refers to actions taken to deny, conceal, or downplay the impact of care responsibilities on a person's ability to meet the expectations of academic work. While it is generally advised that a successful strategy is to under-promise and over-deliver (**Bradt, 2017**), the prevalent 'masculinity contest culture' (**Berdahl et al., 2018**) within academic environments can push care-giving academics to accept unrealistic expectations and/or refuse support. Consequently, care-givers may struggle to fulfil their responsibilities and may grapple with workloads that are unsustainable and detrimental to their well-being.

While the arrival of the NCV appears to mark a change in the contributions valued in funding bids, the notion of ‘obfuscation’ allows us to reflect on the extent to which this shift includes experiences of caregiving. By examining the ways in which obfuscations and confessions may occur in narrative vs traditional formats, we advocate for the further development of approaches to funding applications and evaluations that explicitly address the exclusions of care within academic work and culture. It is not our intention to imply that the CV is or should always be considered an appropriate place to discuss care-giving influences. However, we approach this topic from the perspective that care is a disruptive, productive, and inevitable force in knowledge production. A failure to accommodate this force can amount to a lack of awareness regarding: the challenges faced by caregivers; the support needs of this group; and the valuable ideas and skillsets that care-giving experiences and qualities offer researchers and the research environment.

Although our analysis draws predominantly from the R4RI, it is not our intention to provide a value judgement on either this format or NCVs more broadly. Following Bordignon, Chaignon and Egret (2023a&b), we utilize the NCV as a starting point for contemplating the wider research context:

*The implementation of this new type of CV undeniably has the advantage of opening up the debate, raising awareness and calling assessors (and the candidates themselves, potential future assessors) to question the bad practices and biases that exist in the researchers’ assessment processes. (Bordignon et al., 2023a: 319),*

The structure of this paper is as follows. First, we argue that the politics of care informing research environments within universities in the UK excludes those who give care both outside and within these institutions. Second, we examine how this politics inspires care obfuscations, and how these practices translate on the traditionally academic CV. Reflecting on what a narrative turn might mean for the way care is presented and absented on funding documents, we argue that the continued development of NCV format should be done with intentional consideration for care-giving activities and experiences.

### **Care and Universities**

What does it mean to care? The word ‘care’ can have enveloping and dismissive implications. The things and people that we care about and for (or not) can form the foundations upon which our lives and priorities are structured. A feminist ethic of care acknowledges interdependency as a social condition (Tronto, 2015; Care Collective, 2020), meaning the sustainability of our social and economic structures depends on caring responsibilities and our willingness to meet each other’s needs. Although

it might be assumed that giving care is an inherently positive thing, Maria Puig de la Bellacasa (2017) associates care with responsiveness, defining it as: 'everything that is done to maintain, continue, and repair the world'. As our collective 'responses' to the world are shaped by cultural and political factors, Puig de la Bellacasa argues care is a non-innocent practice: one can care in ways that cause harm.

### **What do Universities Care About?**

In this critical reflection we discuss the experiences of care-giving academics. While the perspective of care outlined above challenges the idea that it is possible to be 'care-free' or 'care-less' – the condition of co-dependency is not one we can opt out of (Butler, 2021) – here we direct our attention to the experiences and marginalisation of academics with care-giving responsibilities and relationships, such as those towards children, kin, students and friends.

It may be easy to think of universities as inherently caring spaces, and that academic teaching and research can facilitate care by investigating societal issues like inequality, health crises, climate change, and political conflict. Care can also be found in the inter-relationships between the people who work in the academic space, both formally and informally. Indeed, academia has a more codified 'mentor/mentee' structure than many other sectors or environments. Still, the processes of knowledge production and dissemination have the potential for apathy and callousness. The division between the work that is and is not done, the ideas that are and are not taught or funded, (or deemed fundable), and the academics who are and are not considered 'excellent' can perpetuate knowledge systems that neglect, condemn, and marginalize certain groups and experiences (Gopal, 2021; Arday, 2022; Essanhaji & Van Reekum, 2022).

Universities are strongly influenced by political and economic contexts, including the political philosophy of the state, whether the state is liberal democratic or authoritarian. According to Dillabough (2022), after World War II, European higher education was viewed as separate from government control and provided a platform for democratic discussion. Nevertheless, these 'deliberative spaces' have since been co-opted to support neoliberal agendas, impacting the care hierarchies perpetuated by and through universities, as well as the care priorities of those working within them.

Government influence on higher education is exerted through market demands, competition, and 'new managerial' orientations, (Al Mahameed et al., 2024). Following the expansion of the sector throughout the latter half of the 20th century, the transfer of tuition costs from the state to students has implicitly and explicitly encouraged students to attend

institutions that provide value for money. This value is determined by factors such as age, word of mouth, social connections (**Williams & Filippakou, 2010**), rankings, as well as 'excellence' frameworks that use quantitative metrics including student satisfaction scores, graduate outcomes, teacher-student ratios, and publications to evaluate institutional performance (**UKRI; Corner, 2023; Office for Students, 2023**). In view of this competitive landscape, UK universities prioritise measurable criteria, and ask that academics demonstrate a willingness to preserve the reputational and financial longevity of the institutions they work for or aspire to work for – that is, academics are motivated to care about, and according to, the values that make up university rankings.

### **Who do Universities Care About?**

Despite a sector-wide focus on equality, diversity, and inclusion (EDI), neoliberal ideology and policy drive in the opposite direction, leading to the exclusion of academic staff with care-giving responsibilities. Within the competitive environment described, organizations rely on audits and metrics for assessment. The successful academic is therefore seen as someone who contributes positively to such assessment by fully devoting their time, attention, and financial stability to achieving excellence (**Rosewell, 2022**). Under these conditions, it is only logical that the temporal and logistical constraints that come with care-giving obligations result in productivity and performance gaps. While the care-giving responsibilities of these individuals involve socially essential but unquantifiable work, academic care-givers may come to be perceived by others, (as well as themselves,) as having less competitive value or potential (**Mirick & Wladkowski, 2018; van Engen et al., 2019**).

These competitive attitudes can have significant influence on the level of gender equality within academic work. In UK society, women bear most care responsibilities (**Hochlaf et al., 2022**). This trend persists within academia, where female faculty members are more likely to have partners who work full-time, while male faculty members are more likely to have partners who work part-time or take on household and care-giving responsibilities full-time (**Schiebinger et al., 2008; Bascom-Slack, 2011; Lantsoght et al., 2021**). Even in households where both partners have careers, women still shoulder a greater share of household duties (**Stadnyk & Black, 2020**). Academic women who are in relationships with academic men may experience slightly more equal sharing of household responsibilities compared to academic women in other types of relationships (**King & Frederickson, 2021**); however, a recent survey conducted by **Derrick et al., (2022)**, which involved over 10,000 respondents, found that academic mothers are more likely to be the primary caregivers.

It is only logical that these differences amount to gender disparities in the workplace. In various academic fields, men tend to hold a larger share of senior positions and attain higher academic status (**Harris & Maté-Sánchez-Val, 2022; Woodhams et al., 2022**). Still, competitive ideologies make it difficult to evidence any systemic exclusion. In a landscape where success and the potential for 'excellence' are measured by tangible outcomes, success is rendered synonymous with deserving.

### **Masculine Rationalities and Care Exclusions**

Attempts to understand care barriers can reinforce, rather than disrupt, academia's performative preferences. Some researchers who have studied the impact of parenthood on academic careers have previously relied on publication records as a means of assessing productivity levels (**Lutter & Schröder, 2019; Morgan et al., 2021; Cairo et al., 2023**). This approach inherently reduces publication to a 'yes' or 'no' binary, and so overlooks the challenges faced in the publication process as well as any sacrifices made to complete publications, (such as spending less time with children or partner or neglecting other work commitments). This approach also fails to account for non-quantifiable but ultimately productive activities like teaching, mentoring, and promoting EDI equity and diversity. Given that women, (particularly women of colour,) often undertake or find themselves assigned such responsibilities (**Ashencaen Crabtree & Shiel, 2019**), equating productivity with publications, (and, following that, publications with equal participation,) ignores the gendered disparities in terms of the care-giving that occurs within institutions.

Examining the impact of care on academic careers requires a holistic approach that recognizes the multidimensional, political, and ethical nature of care in academia. It also requires a recognition of the fact that current practices were not developed with care responsibilities in mind. Davies et al. (**2022**) argue that academia is a system that has been created by privileged individuals, specifically white, middle-class men who had their care responsibilities taken care of by somebody else. Those who now look to enter the academic system are required to conform to the rules imposed by this structure and tradition. It is not the case that all men, or those in power, are necessarily actively enforcing these rules to oppress women; a system that has been established by and for men achieves this by default, hindering the advancement of individuals who do not identify as male.

The dominance of masculine rationality within academia and beyond contributes to prevailing assumptions: 1) that care is a feminine characteristic, and 2) that the feminine is weaker than the masculine. This perception often stigmatizes academic women who are caregivers, creating a sense of inadequacy even for those who appear, or who are,

successful (Acker & Feuerverger, 1996). Although we do not mean to assume that all male care-giving academics feel confident in their abilities, the association of care with the feminine lends to the assumption that women have a natural inclination for caregiving. That is, while women's care responsibilities may be seen to be inevitable, men's care activities are regarded as the result of a care shortfall. This perception leads to gender-based inequalities in the way care-giving academics navigate the workplace. Women, for example, may experience continuous discrimination or anticipated discrimination based on their perceived capacity to give care, (whether to young children or elders). As care is something men are thought to do sporadically, men are more capable of appearing 'care-free', even if they aren't. To put it another way, men are more likely to appear in line with idealised and ideological image of the excellent academic who is solely dedicated and focused on their work (Hughes, 2021; Davies et al., 2022).

### **Care Obfuscations**

The care exclusions within academic work give rise to a campaign of behaviours called 'care obfuscations' (Etheridge, 2023), a term used to describe the tendency to deny, hide or underestimate the impact care responsibilities have on one's ability to meet the norms of academic labour. In Etheridge's doctoral thesis on 41 UK-based academics' experience of the transition to (desired) parenthood, she argues that academic mothers, precluded from normative academic success standards, employ 'care obfuscation' as a strategy for appearing in alignment with these standards. This involves obscuring care-oriented ties from view of (potential) colleagues, managers, readers and students. Through (knowingly and unknowingly) overcommitting, non-disclosing or refusing help, obfuscators may become isolated, they may fail to deliver and/or undertake unsustainable workloads that are ultimately detrimental to their well-being (Tomkins & Eatough, 2014; Allard & Whitfield, 2022).

Even though obfuscation is an activity undertaken by the individual, Etheridge considers obfuscation to be symptomatic of a hierarchical politics of care in which caring about others – and being seen to care about others – is valued over the provision of direct care (Tronto, 2013). In the context of academic work, these hierarchies and subsequent care exclusions are forged through academia's culture of toxic competition. In this culture, obfuscation may be deemed a bid for professional survival, a means for avoiding marginalization, or as an 'enterprising' activity (e.g., Moisander, Groß & Eräranta, 2018) – that is, the means through which one 'activates the desired self' (Mughal et al., 2023), here understood to be the seemingly care-free academic male.

## **Obfuscations in the Academic CV**

In the remaining sections of this reflection, we use care obfuscation as a means for exploring the politics of care that are proliferated by and embedded within academic CV conventions. Traditionally, academic CVs emphasize achievements by listing measurable contributions and experiences, including publications and awards. While including details about periods of formal care leave may be a common practice, for example (e.g., 'I took a period of maternity leave'), doing so carries the risk of discrimination or the anticipation of discrimination. Indeed, care-giving academics have sought to avoid disclosing periods of leave by engaging in pre-emptive strategies, such as presenting or submitting papers while on leave (Miller & Riley, 2022; Rosewell, 2022; Hillier, 2023).

Obfuscations occur in the unspoken aspects of the caregiver's CV. As care experiences are unique, the typically brief disclose of care leave reduces this complex experience to a simple sentence, providing insufficient insight on any challenges faced or personal and professional transformations that occurred around this time. CV obfuscations therefore hide from view the influence care-giving experiences have on research interests and skills; career decisions, such as whether one stays on an academic track; one's national or (inter)national mobility; and the character of one's contract, (whether it is's full time or part time). At the same time, not all care experiences amount to a formal period of leave, and it can be difficult for applicants to know at what point such experiences can be included, if at all. Still, the inclusion of only formally agreed absences obscures the everyday nature of caregiving. This is problematic because caregivers are highly skilled, and it is not only their obligations that are concealed in CV obfuscations, but the extent of their capabilities and the place from where they developed. This includes their time management skills, ability to multitask, aptitude for empathy, and capacity to respond effectively to crisis situations.

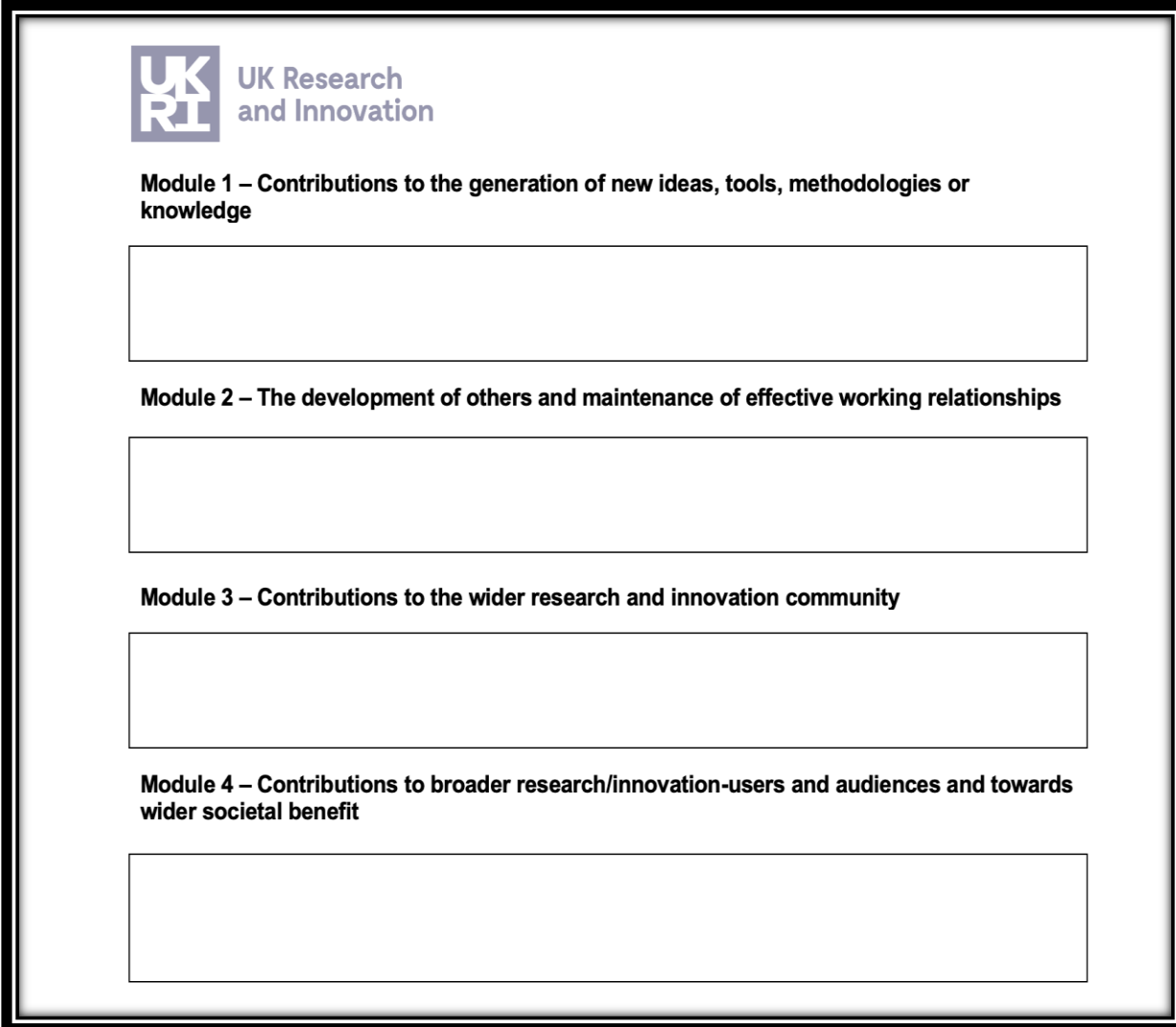
### **NVCs**

Compared to the traditional CV, narrative formats typically allow space for the discussion of broader, non-quantifiable forms of academic contribution. The four modules of UKRI's R4RI intend to provide opportunities for academics applying for funding to recognise the wide range of influence that make up academic life. In a Joint Statement on the NCV, UKRI (2021) describe wanting to '[enable] the diverse R&D workforce to demonstrate who they are as individuals. Guidance for NCV writers, developed by the University of Glasgow (Adams, 2021) and the University of Oxford (University of Oxford, 2023), as well as funders such as Alzheimer's Research UK (ARUK) give advice on choosing activities for each



module, and how to structure paragraphs to best show impact and reflection. ARUK, for instance, indicates this ‘allows these achievements to be put in the broader context of the researcher’s activities.’ Their guidance mentions that ‘some of the CV sections may be lighter in content than others or some may be left empty’ (ARUK).

*Figure 1: UKRI's Résumé for Research and Innovation template*



The image shows a template for a UKRI Résumé for Research and Innovation. It features the UKRI logo (UK Research and Innovation) at the top left. Below the logo, there are four distinct sections, each with a title and a corresponding empty rectangular box for text entry:

- Module 1 – Contributions to the generation of new ideas, tools, methodologies or knowledge**
- Module 2 – The development of others and maintenance of effective working relationships**
- Module 3 – Contributions to the wider research and innovation community**
- Module 4 – Contributions to broader research/innovation-users and audiences and towards wider societal benefit**

### **UKRI's Résumé for Research and Innovation template**

In focusing on the individual, NCVs seemingly give academics space to discuss the impact of non-research related experiences on their career, including – it may be surmised – caregiving, periods of care leave and care-related contributions within the university space (which are often unrecognised). Still, there are tensions between this principled interest in the individual and the individualistic character of academic work under neoliberalism. Although NCVs can provide ‘a much richer, more nuanced picture of an individual scholar’s contribution’ (Gadd, 2022), the word ‘contribution’ sustains an emphasis on what one has done, and not on what one could do, the latter being the apparent focus of funding

applications. Given the lack of empirical evidence on what applicants write in the different modules, it is difficult to say how applicants interpret the prompts. For instance, on paper, the phrasing of module 2, 'the development of others and maintenance of effective working relationships', acknowledges the implication of others in one's career. Contrary to the collaborative, team-based nature of much research work, the wording of module appears to emphasise what one has done for other people as opposed to with them.

NCV formats typically allow for a 'Personal Details' or 'Additional Information' section that caregivers could use to disclose their responsibilities. Due to its inclusion in funding applications, the NCV is a high stakes document, however. While funding rounds are inherently competitive, this competition hinders the NCV's objective of expanding the discussion of experiences beyond the usual realm of an academic CV. This is the result of a lack of clarity regarding which experiences are pertinent and how they will be assessed by reviewers. Cancer Research UK suggest that assessors 'consider the [narrative] CV sections holistically, and not in isolation, when making assessments on the skills and expertise of the candidate'. Yet funders are reluctant to provide examples of 'good' NCVs. Although this is likely an intentional effort to foster innovation in approaches to grant and job applications, the extent to which this approach will be successful is uncertain given that applicants have little indication – or reassurance - as to how care-giving experiences would be assessed should they disclose them. There is also little assurance that evaluators have been sufficiently trained to recognise, and then mitigate, the effect of their biases on the evaluation process - biases which may be particularly influential in a format that aims to invite a broader set of experiences.

### **Obfuscation by Design?**

Without, then, adequate examples of different possibilities, academics may continue to draw from the neoliberal 'common sense' (Torres, 2011) of the cut-throat, metrics-based evaluation system that cast care-confessions and experiences as distractions from the performative point. This discussion asks whether the R4RI truly encourage a broader range of experiences or if this format succeeds only in capturing the same experiences as the traditional CV, albeit packaged in a slightly different way. From this perspective, the implementation of NCVs in funding settings marks a continued move towards obfuscation. Funders' supposed concern for the 'individual' displaces responsibility for disclosure on the applicant, allowing funders to get away with not engaging with the care hierarchies and exclusions that affect the way funding applications are assessed. This perspective extends Etheridge's concept of obfuscations,

moving from a focus on the obfuscations of individuals towards a recognition of the ones committed by organisations, institutions and funding bodies, who, in rationalising knowledge production according to the masculine rationalities outlined in the first half of this paper, dismiss, deny and underestimate the impact of caregiving on academic work.

Crucially, we are not writing for the abandonment of the R4RI, and we want to avoid a reversal of this narrative turn, which has occurred following the initial implementation of a NCV requirement in funding applications to the Dutch funder, NWO. Despite being one of the pioneers of narrative formats, NWO have recently indicated a lack of trust in the narrative disclosures of applicants. In establishing the 'evidence-based CV', they have now returned to an emphasis on that which can be considered, 'objectifiable':

*For a while, we [NWO] asked researchers to send in a 'NCV', in which you don't use lists and figures, and not all of us were happy with that. We got criticism from our own selection committees: a CV like that is hard to verify, they can say whatever they fancy. So we're moving over to an evidence-based CV. (Levi, 2022)*

The continued development of the NCV in a UK context requires empirical investigation on the effectiveness of various narrative formats. Some efforts are being made in this regard, including by the Action Research on Research Culture (ARRC, 2023) project at the University of Cambridge (note: the authors of this paper are affiliated with this project). At the time of writing, however, we do not know of any research addressing the more subtle implications of CV format, such as those covered in this paper. More directed efforts should be made to ascertain the explicit and implicit negotiations around care that occur in the writing and evaluation of academic CVs. In this regard, inspiration may be sought from the SNSF (2022) CV format. The SNSF includes a section on 'net academic age', which is 'the reference value for evaluators to assess the achievements in relation to the time actively spent on research'. Applicants calculate their net academic age by deducting the relevant duration of career breaks, including parental leave, care duties more broadly and part-time work. Importantly, reviewers cannot see the reasons behind the deductions, which may go some way to addressing the role of care biases in assessment. Even so, this approach continues in the way of care obfuscation, with terminology such as 'interruption' echoing the masculine rationalities that liken care - the thing that drives the continuation of the world in which our research is conducted - to a moral and epistemological weakness.

## **Concluding Thoughts**

Whether or not the CV is the appropriate place to discuss care experiences is a contentious point, including among the authors of this paper. Although we maintain that current CV formats flatten care-giving experiences and is biased towards the (implausible) construct of the seemingly 'care-free' academic, we are not necessarily writing as advocates for complete care transparency in the CV. Indeed, we find ourselves caught between wanting to see caregiving and care acknowledged more explicitly in funding rounds and CV formats, and feeling mistrustful of the neoliberal logic that underpins UK society and academic which, in telling us to convert absolutely all of ourselves into engines of productivity, may burden caregivers with the task of manipulating and weaving their experiences into tales of deservedness.

Instead, we advocate for 'care safety' in the application process. Applicants should have the ability to disclose and discuss their care-giving experiences, should they choose, and to do so without fear of being penalised. This shift to care safety begins not with encouraging applicants to disclose but with changing the frameworks used to evaluate their applications. How, we argue, can writing about care responsibilities be normalised unless there are wider incentives to normalise the visibility and contribution of care responsibilities?

The absence of care considerations within the UKRI NCV format overlooks not only the impact of care-giving experiences on knowledge generation but the influence of care in a broader sense, understood by Puig de la Bellacasa (2017) as a form of responsiveness. Indeed, beyond the individuals we care for directly, our inclinations towards objects, ideas, topics, individuals, and processes significantly shape our academic engagement, influencing ideas we pursue, our motivational levels, and ultimately the outcomes we can achieve. The fact of the matter is that care influences how we feel about others, ourselves, our employers, the sector, funders and society more broadly. Care affects how we regard our accomplishments, and how we communicate about them. Crucially, our care-giving experiences (or lack thereof) also influence how we receive the care-giving experiences of others.

If, as ideas around unconscious bias conversations have suggested, the way we think about and respond to others is politically and culturally informed, it stands to reason that the assessment of funding bids is also politically and culturally informed. This means the ideas, sentiments, and things that evaluators care about can impact the success of funding applications. As such, care oversights in the development of NCV formats risk supporting care obfuscatory practices and so weakening the diversifying effects of these innovations. As we have sought to

demonstrate in this critical reflection, the failure to explicitly consider the presence of care, and the manner in which care should be described and acknowledged in professional contexts, may keep applicants' reliant on the 'common sense' of academia's 'masculinity contest culture' (Berdahl et al., 2018), the same culture which initially inspired funders' concern for gaining a 'holistic' overview on individual applicants. To put it another way, without care-full considerations, the current narrative turn shows, despite all good intentions, a lack of care for care.

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# Employability Schemes for Young People in STEM: Enabling staff to deliver an enriching experience through research culture development

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## Abstract

*The researchers were awarded an Enhanced Research Culture Fund to improve the Research Culture within WMG (Warwick Manufacturing Group, University of Warwick). The aim was to encourage diversity and inclusion, enable career development and provide open access resources and research to facilitate collaboration, through the creation and development of a new Work Experience strategy. The project was committed to reaffirming young people's interest in STEM (Science, Technology, Engineering & Mathematics), and hopefully inspiring them to pursue a career in the field. To begin such a programme, the researchers conducted a literature review, to highlight the importance of employability interventions that can provide young people with aspirations and role models. Conclusions of the study found that young people are prone to losing their STEM interest before they reach the age of fifteen due to negative perceptions of STEM as well as a lack of access to information, advice and guidance. Using the gaps in the research culture, the project aimed to establish and train a work experience team, with an emphasis on early-stage career staff; develop a strategy document with clear guidelines for hosting employability programmes; implement said programme. The strategy document identified three core Work experience models; Guided, Blended and Independent. The fund empowered a team of early career academics and professional staff to develop and deliver such a programme. The guide allows for better resource management and student timetabling, to enhance the overall experience.*

**Keywords:** employability scheme; good practice; research culture; team creation; work experience

## **Research Culture and Employability Schemes**

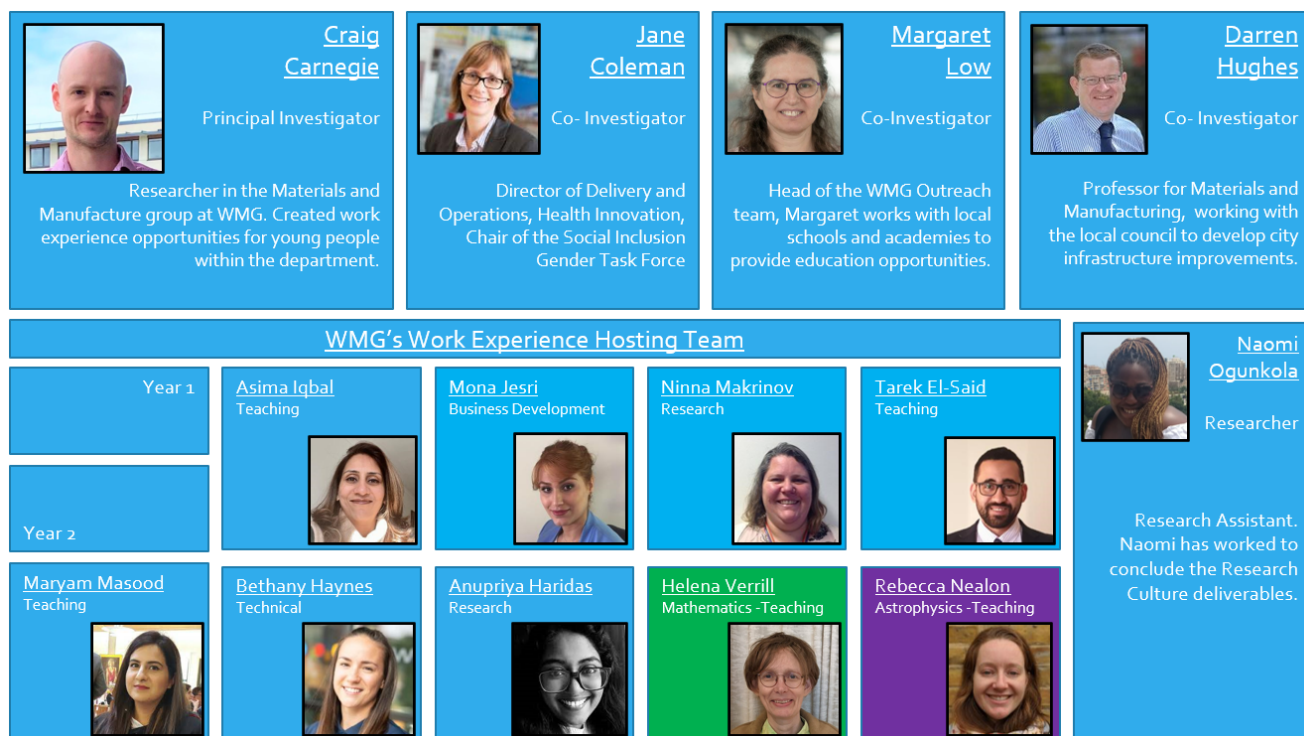
Research Culture encompasses a wide range of topics and areas that need to be addressed to create a more open and collaborative research environment. Nationally, based on an online survey of 4,267 researchers, 55% of respondents attached negative sentiment to describe research culture (**Wellcome, 2020**). Factors contributing to this sentiment include the perceived lack of job security, limited career flexibility, mental health issues, and a prevailing sense of isolation and loneliness at work. This article focusses on addressing these issues, through a departments ability to enable their staff. This includes increasing diversity and inclusion, empowering people to enhance their career paths, generating open access science and fostering a collaborative working relationship with others.

The opportunity to use funding to facilitate activities capable of supporting research culture and access to STEM (Science, Technology, Engineering & Mathematics) allowed us to take our initial idea of proving employability schemes for young people and grow it into a self-sufficient team within the department of WMG (Warwick Manufacturing Group) at the University of Warwick. Funding has been secured two years running, with four key project aims as follows:

1. Identify the gaps in research culture surrounding employability schemes, through a preliminary literature search. The identified gaps that need addressing are:
  - a. Researchers' negative sentiment attached to research culture.
  - b. Young people's lack of interest in STEM study and career paths.
  - c. Absence of clear guidelines for employability programmes.
2. Establish and train a core employability team and network, to enhance research culture at the university, with an emphasis on supporting opportunities for early-stage career researchers.
3. Develop a strategy document, along with clear guidelines for developing and hosting an employability programme, while making this resource readily available online.
4. Demonstrate the ability to implement said programme and review its effectiveness.

Now in the second year of development, the team has grown and evolved. Figure 1 shows the involvement of fourteen members of staff, with a range of skills and backgrounds and collaborating with multiple STEM departments (Blue – WMG, Green – Mathematics, Purple – Astrophysics).

Figure 1: Profiles of the Work Experience team, as of early 2024.



Towards the end of 2023, we used the platform of the International Research Culture Conference 2023 to provide a live talk on the work completed. It was well received and provided a means to disseminate the work internationally, something we hope to continue doing.

**Team building**

To address the necessary changes in the culture, each member of this team was offered one-on-one training sessions with a personal development coach, provided safeguarding training and a DBS (Disclosure and Barring Service) check. It is important for employers to carry out a background check on an individual that will be working with young, vulnerable people through a DBS. It involves looking for criminal records and it is important to renew the check every few years. Additionally, the wider research community at WMG was invited to participate in a series of workshops throughout the 2022/23 academic year. These workshops covered topics such as the promotion process, creating a diverse and inclusive work environment and how to be strategic and political in academia.

It has always been our intention that such an approach would provide opportunities for each team member to boost their own career development, and to begin to specialise within the field of employability schemes. For example, one team member has demonstrated a keen interest in providing opportunities for refugees that now live within the Midlands, at a time where language and cultural barriers are making their

studies and early career journeys difficult. To address this, we focussed on offering the chance to gain real world experience within a Higher Education department that has close ties to industry. This not only enhances their CVs, but ultimately their self-belief and confidence in the long run.

#### *Hosting a work experience*

Historically, work experience programmes are initiated by *the approach*. This would come in the form of colleagues or friends that require their own child or family friend to attend a week at a local company or organisation. This ad hoc request can then be pushed from one member of staff to another, until someone is able provide a weeks' worth of experience, often this will be *work shadowing* with some mock work that mimics the typical work of the host.

The resulting experience can be very isolating for both the host and the young person attending the experience, with the odd favour being requested of other members of staff for talks and demonstrations to break up the days. Within a university environment, this opportunity often falls to a young person who is likely from an advantaged background, often due to having connections with a friend of the family working on campus. In contrast, those without connections have very few chances to participate in such a programme.

An ad hoc approach results in a short period of time for programme development, therefore it misses the preparation of documentation and readiness. There is also not the foresight to think long term, collecting student feedback to enhance and develop the scheme in the future.

Currently, there are no clear guidelines for hosting employability programmes, and this includes defined training and learning materials. Hosting a young person, especially those from disadvantaged backgrounds, requires safeguarding and the ability to identify and discuss circumstances that may go beyond the walls of the university. This means taking on a responsibility of care.

Hosts need to evaluate three things; who is the intended audience and what are their ability levels, what is your availability to host such a programme, and what are the available resources to you. Resources include space, facilities, colleague support and finances.

Ultimately, our aim is to provide an opportunity for young people coming from low socioeconomic backgrounds to gain experience through an employability programme. This includes time on a university campus, in a department that works both in research and teaching. As well as working

closely with industrial partners to demonstrate the abundance of career paths that are open to them in their future.

### **Identifying the Cultural Issues**

To pursue a future in higher education and take a career path in a scientific field, there are ever increasing barriers to entry, which is equivalent to a lack of access. Factors that can increase these barriers include gender, ethnicity and socioeconomic circumstances. Between 2015 and 2019, interest for science dropped by 10% amongst children as young as nine years old (**Sims et al., 2019**). Young people will make a choice to leave the pursuit of a STEM career as early as fifteen years old (**Microsoft, 2018**), often when they are required to make their first subject choices at school. This can be exacerbated where financial concerns are greater, for example, the cost of going to university, or the requirement to contribute to the household financially as soon as possible.

To increase opportunities and access, the University's staff hosting the employability scheme, require training and coaching to become inspirational figures to young people. A role model or schoolteacher being supportive and showing encouragement was shown to boost the chance of girls pursuing a STEM pathway by 25% (**Popovich, 2023**). Studies have highlighted that extracurricular experiences (**VanMeter-Adams et al., 2017**) and project-based learning (**Beier et al., 2018**) are both inspirations for young people to continue pursuing STEM careers. A work experience placement can incorporate both items, being away from school and often outside of schooling hours. The approach our model has taken is to assign a project and theme to the experience, where the learning and development is based around a deliverable that the student progresses and then presents.

Another research culture area that needs addressing is the reduced opportunities for staff in the early stages of their career, which includes the chance to take on leadership roles. Within a university setting, departments are split into groups, often headed by a single Professor, of whom is supported by one or two Associates. However, the proportion is then larger when it comes to Assistants, Fellows and Postgrads. Not all early-stage career staff have a direct path to the top two positions, therefore it becomes very competitive to make the next steps, and demonstrating leadership is a great way of standing out.

The structure of departments also lends to the issues of collaboration and sharing good practice. Each group wants to keep a hold of their intellectual property, and then within that, each individual needs to hold onto their own expertise. Such a structure therefore fosters an isolated culture and tends to discourage team growth.

Finally, a product of this is the lack of open access research, and the practice of uploading original datasets to public repositories. Publications are typically hidden behind a payment, and then original data is difficult to see or trace. However, whilst the adoption of open access publications is becoming more common, it is still seen as a lower quality route to sharing material.

### **Modifying the Culture and Embedding Good Practice**

Through hosting a work experience programme aimed at young people between the ages of fifteen and eighteen, specifically from widening participation groups, the team hopes to inspire and secure young people's ambitions of a STEM future. We want to make sure that the opportunity is there to experience working life at a higher education facility, and to help foster connections and networks that will create further opportunities in the future. The work experience demonstrates a range of job roles and career paths across the university campus, including technical routes, with discussions from technicians, apprenticeships and technical service staff. It has been discussed that the UK is very good at providing academic teaching, but less so when it comes to technical education (Yates, 2019), leading to a skill gap. Being able to show the connection between the two is often a surprise for the visitors.

The creation of a work experience team within the department has also generated new responsibilities and career opportunities for staff. They have gained training and development that can now be used to enhance their CVs and demonstrate teaching, leadership and impact. The roles they have taken on include a large amount of public engagement, which incorporates outreach and working with local schools. This is a key performance indicator that is evaluated when applying for promotion within the university.

The team are working together, collaboratively to develop the most enriching work experience that we can, documenting the process and making it clear to others what is possible. This year has shown the possibility to reach other departments and work with them to host cross-department programmes.

The information we gather and develop into guides will not be hidden, instead being made available online and the team is happy to discuss with those that reach out, any questions they may have. Documenting and recording our approach has been crucial in embedding the process and reaching as large an audience as possible with our work. Therefore, the delivery of online documentation was always the aim for such a project. Document 1: *Hosting a Work Experience Programme at the University of Warwick* is readily available at [www.warwick.ac.uk/wmgworkexperience](http://www.warwick.ac.uk/wmgworkexperience).



This work experience strategy conceptualises the process of dissecting research culture, generating a work experience programme, delivering said programme and processing an end of project review.

The use of internal funding has allowed the team to grow from a single host requesting favours from members of staff, into a dedicated fourteen-member team that can now host as a group or independently, if required. Finances to support the second year of our work experience programme came from the Research Impact & Services group at the University of Warwick, through applying for an Enhanced Research Culture Fund. The Research England funding was for ten months, and helped to pay for staff time, external consultancy and training fees, and consumables to support the final delivery of the experience. In 2023 the group was able to host a work experience for fourteen young people.

### **Observed Outcomes**

The experience of setting up an employability scheme and delivering it to a range of young people has provided us with a large collection of learning materials, that we are now sharing with the wider community. Through the *STEM Faculty Work Experience Working Group* we are supporting others with timetables, templates, and course creation.

#### *Three work experience models*

The variety of programmes hosted at WMG has allowed us to dissect the best type of work experience for each individual student, allowing new hosts to create a programme that will be more enriching for their audience. To do this, we have identified three core work experience models; Guided, Blended and Independent, as shown in Figure 2. Each model consists of a collection of activities for the young people, but weighted based on the student's ability, the availability of the host to provide one to one teaching and the access to resources within the department/office.

A young person that does not have a lot of experience with the topic or has not demonstrated the ability or desire to do self-learning and research will be better suited to a *Guided* experience. This includes less independent work, and more time attending lectures or taking tours of the facilities. In contrast, a student that shows a real interest in exploring the topic and has the ability to do research could be placed on an *Independent* experience, where the focus is on answering a core question or theme, with intermittent practical, tours and a single lecture to break up the days.

Figure 2: Activities distribution across the three core work experience models; Guided, Blended and Independent.

Work Experience Model					
<u>Guided</u>		<u>Blended</u>		<u>Independent</u>	
Independent	20%	Independent	45%	Independent	60%
Practical	20%	Practical	20%	Practical	10%
Tours	20%	Tours	20%	Tours	15%
Lecture	20%	Lecture	15%	Lecture	5%
Floating	20%	Floating	0%	Floating	10%

Existing models have been written with a single week in mind, however they have been shown to run just as well across two weeks, with plenty of scope to be expanded further. The theme was seen to be very important for creating and running the work experience. For example, ‘How do we build a car?’, sets the week’s objectives clearly for the student and allows the host to break that down into hour long exercises that come together to answer that question. This all culminates in a presentation or discussion at the end of the week that showcases their learning and understanding.

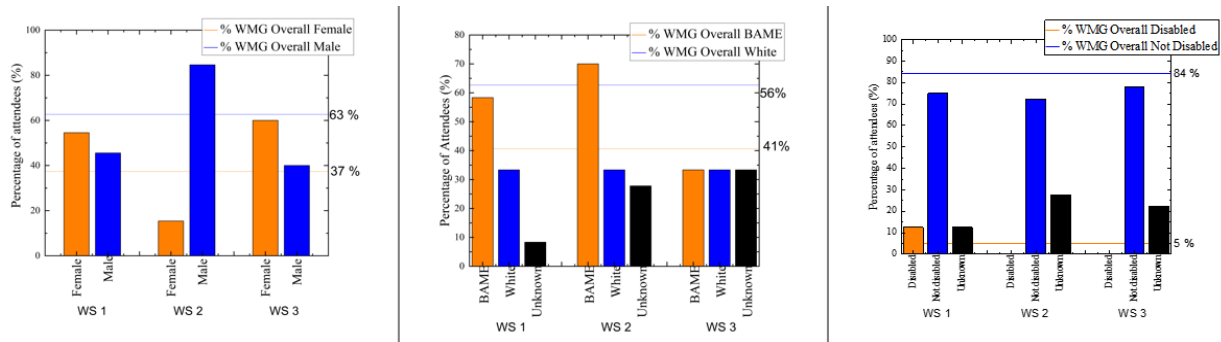
Participants of the models were asked for their feedback pre and post work experience, with very positive responses, exemplified by the following quote.

*I am so glad to have had that opportunity to expand my knowledge and inspiration within the engineering field, via WMG. (Young Person from our 2022 Cohort)*

**Workshops for staff development**

The funding allowed us to bring in an external development consultant to deliver workshops specifically tailored to research culture and staff growth. The workshops were open to a larger audience than just the work experience team, and we managed to provide them to thirty-three staff members, representing a wide range of backgrounds and job roles, as shown in Figure 3. The highest attendance was for workshop one: ‘Mapping your achievements to UoW's promotions criteria’, where staff began to assign their achievements to the four key promotions criteria of research, teaching, impact and collegiality.

Figure 3: Demographics of staff reached through the leadership workshops (WS).  
Showing gender, ethnicity and disability representation.



Collecting feedback from the workshops was key to making sure that they met the expectations, and that modifications could be made in the future, where required. The feedback included:

*Thank you very much for organizing the event. I hope as many people in WMG as possible attend it because it would give participants a chance to chart out their roadmap for the future even if they are not considering promotions.*

*This workshop [1] has directly influenced my approach to the promotions process since following the exercise I have created a strategic plan for increasing my engagement with research activities.*

*I greatly enjoyed the opportunity to reflect on my professional development in a positive, supportive environment. In particular, the chance to network with teaching- and research-focussed colleagues across the department in the shared interest of academic progression is appreciated to generate opportunities for collaboration. (Various Workshop Participants)*

### Next Steps

The development of an employability scheme is continually evolving, especially as we begin to embed the process within the department and highlight the depth and vigour required to establish and maintain a safe and enriching work experience process for everyone involved. The emphasis for this year’s funding is on expanding our knowledge, development, opportunities and resources to other departments within the University. This includes recruiting Mathematics and Physics to the work experience team and working with both departments to create a cross disciplinary work experience for the young people.

The group is also a part of the *STEM Faculty Work Experience Working Group*, a forum with representation from all STEM departments. We continue to work alongside the forum and come together to share good practice and provide guidance to those that may not have previously hosted such programmes.

Finally, due to the success of the project to date, next steps also aim to expand the work to the wider University, including more faculties. With a real ambition of taking the efforts nationally to other Universities across the UK.

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## **Acknowledgements**

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Dr Craig Carnegie leads WMGs mechanical and adhesive joining capabilities, possessing skills in experimental analysis of joints. He was recently awarded an EPSRC proposal as CO-I and was the CO-I on an Innovate SMART Grant. Craig continues to look for new opportunities for collaboration and hopes to open up access to the joining capabilities to other academics. He is currently leading a Research England development fund for employability schemes and is the chair of the Warwick STEM Work Experience Working Group. He has established the departments Work Experience Team for traditional employability schemes, aimed at young people from disadvantaged socioeconomic upbringings.



Miss Naomi Ogunkola is a final year student, completing her undergraduate course in Astrophysics. She was employed as a Research Assistant on the Research England development fund, assisting on the production and development of the Work Experience Guidance document. She has a keen interest in social mobility projects and has applied for an internship with WMG, looking at opportunities to unify research outputs and public engagement.



## List of Figures

**Figure 1:** Profiles of the Work Experience team, as of early 2024.

**Figure 2:** Activities distribution across the three core work experience models; Guided, Blended and Independent.

**Figure 3:** Demographics of staff reached through the leadership workshops (WS). Showing gender, ethnicity and disability representation.

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# Time Poverty and its Impact on Research Culture

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## Abstract

*This article, based on our experience carrying out research culture surveys at our respective universities, discusses how ‘time poverty’ represents a significant challenge to the creation of positive research cultures. Time poverty is a term used to capture the fact that people persistently report having too many things to do and not enough time to do them, and is linked to poorer mental and physical health, as well as low productivity.*

*We argue that frameworks for defining and discussing research culture tend to be structured around tangible and easily categorised attributes. This can fragment and compartmentalise discussion and action toward discrete issues relating to research, and risks missing deeper structural and systemic issues that underlie them. To tackle time poverty, we will need a more systemic approach, requiring a broad range of solutions relating to the delivery of both research and education, and spanning from sector-wide level responses to individual behaviours. Without tackling time poverty, there is a risk that efforts to improve research culture will be stifled, because underlying issues still pervade and erode the culture, or simply because people don’t have time to engage with or contribute to change. We discuss these issues in relation to some of the findings from our institutional research culture surveys and work we’ve already started in our institutions and suggest some further actions to take.*

**Keywords:** academic work; higher education; research culture; survey research; time; writing retreats

## Introduction

To better understand how we can build more positive research cultures at our institutions, we recently conducted surveys with our research communities. The findings of our surveys pointed towards time pressure being a major issue for many colleagues. The perception of growing time pressures, while only rarely discussed in work on research culture, is well documented in literature on the sociology of higher education (e.g., **O'Neill, 2014; Vostal, 2015; Ylijoki and Mäntylä, 2003**). While reflective of the 'high-speed tempo' that characterises contemporary social experience (**Vostal, 2015: 71**), sociologists agree that academics face particular challenges and that 'time pressure, haste, hurry and rush are prevalent predicaments in the lives of academics' (**Vostal, 2015: 75**). We draw on the concept of 'time poverty,' which emerged from work in economics and sociology, calling attention to the essential importance of time as a resource (**Vickery, 1977**). It has been defined as people feeling 'like they have too many things to do and not enough time to do them' and survey evidence links it 'to lower well-being, physical health and productivity' (**Giurge et al., 2020: 993**). In the context of research culture, our survey data suggests that time poverty appears to negatively impact on creativity and developing new ideas, engagement with collaboration, networking and career development opportunities, and colleagues' mental health and well-being.

As we discuss in more detail below, perceptions of time poverty arise from increasing demands from educational activities, financial constraints, and growing bureaucratisation of higher education, especially in the UK. However, frameworks for defining and discussing research culture tend to be structured around attributes that are more tangible and are easily categorised (e.g., **Shift Insight, UK Reproducibility Network & Vitae, 2024**). This can compartmentalise discussion and action toward discrete issues relating to research, and risk missing deeper structural and systemic issues. We acknowledge that recent initiatives to reduce bureaucracy in research and funding processes are valuable for releasing time for researchers and research enablers (**Tickell, 2022**). However, we argue that this is only part of the problem, and to effectively tackle time poverty to improve research culture, we will need a more systemic approach that goes beyond simplifying process. Being academic leads for research culture in our respective institutions, we see the complexity of issues relating to time poverty that require a broad range of solutions – across both areas of research and education and ranging from sector-wide and institutional initiatives to individual level responses. Given that time will be important for colleague and student experience, the quality of research we do, and our ability to invest in culture change, we ignore time poverty at our peril.



## **What Is Research Culture and Why Measure It?**

Research culture 'is a hazy concept which includes the way we evaluate, support and reward quality in research, how we recognise varied contributions to a research activity, and the way we support different career paths' (Casci & Adams, 2020: 1). Although there is no single agreed definition, perhaps the most widely adopted is that of the Royal Society that describes it as 'the behaviours, values, expectations, attitudes and norms of our research communities' (Shift Insight, UK Reproducibility Network & Vitae, 2024: 5).

Improving research culture is at the forefront of conversations and activity across the sector, and is already high on the agenda of institutions, funders and other organisations across the UK. This is largely due to a series of reports around research culture foregrounding pressing challenges that could no longer be ignored (e.g., Cornell, 2020; Noone, 2020; Wellcome 2020; MI Talent, 2022). These challenges include a need to: increase diversity; tackle bullying and harassment; reduce precarity; improve wellbeing; improve people management; better support career progression; recognise a wider range of contributions to research; embed responsible research assessment; and promote more transparency and openness in research. A number of different frameworks and toolkits have been developed to help facilitate change (e.g., Science Europe, 2021; Russell Group 2021; Vitae, 2024). Work to improve research culture in Higher Education institutions (HEIs) in the UK looks set to be further accelerated through a growing number of dedicated funding streams being made available, including research culture funding to English and Welsh institutions from Research England and Higher Education Funding Council for Wales, Wellcome's Institutional Research Culture Fund, and the UKRI EDI Caucus Flexible Fund. There will also be an increased emphasis on research culture through the new People, Culture and Environment component of REF2029, which intends to:

*...appropriately recognise and reward HEIs that create conditions in which excellent research and impact can be produced in the disciplinary areas that they support (REF2028, 2023: 7).*

This includes the ways in which:

*...HEIs support their staff, enable collaboration beyond the institution, support the broad development of disciplinary knowledge and ensure the integrity of their research (REF2028, 2023: 7).*

The pace and scale of activity can sometimes be quite bewildering – on the surface, there are so many issues to address, frameworks in which to work, and areas to focus on, but where does one start?

This question is further complicated because of the need for change within different institutional contexts as universities vary in many ways including their size, their research and education focus, and their current culture. As Gadd (2022) quite rightly points out, any improvements in our research culture must be based on a ‘strong sense of the lived experience of our research communities: the good, the bad, and the ugly’ and accompanied with a portfolio of actions reflecting local values and priorities. Therefore, we are seeing the emergence of an evidence base around lived experiences of research culture, with the publication of research culture surveys across numerous higher education institutions, supported by those of funders and sector-wide groups. The University of Glasgow was the first university to run an institutional research culture survey in 2019 (University of Glasgow, 2019). Since then, research culture surveys have been carried out at other universities, including Edinburgh (Macleod et al, 2020), St Andrews (Albaghli et al., 2021), and University College Dublin (University College Dublin Research Culture Initiative Team, 2021). Although these surveys paint similar pictures, each gives their own insights into the experiences of specific research communities. Therefore, at Newcastle and Cardiff, we decided to carry out surveys to ensure that our actions are evidence-driven and community-led. The surveys allowed us to better understand the lived experiences of people in our diverse research communities, and provide a baseline against to measure the impact of our actions in future. We were also able to benchmark our results against the sector more widely by drawing on some measures used in previous surveys.

### **Our Institutional Surveys and the Emergence of Time Poverty**

Our survey designs were based on consultation with stakeholders. They included both quantitative, closed-ended questions and open-ended qualitative ones that allowed us to identify key themes. We combined measures already used in earlier research culture surveys with new questions developed and piloted within our institutions. Newcastle’s survey was carried out in 2021 around four identified attributes of a positive research culture: Collaboration and collegiality; Freedom to grow and explore; Fairness and inclusion; and Openness and integrity (Newcastle University, 2022). Cardiff built on this approach in their 2022 survey, broadly aligning to these four attributes and including an additional three emerging from consultation with stakeholders: Job security and career development; Work-life balance; and Mental health and wellbeing (Cardiff University, 2023). Both surveys were shared widely across each institution, seeking responses from all colleagues involved in research, including academic staff, research staff, professional services colleagues, and postgraduate researchers (see Table 1 for breakdown of respondents).

Table 1: Breakdown of respondents to our surveys by role

Role	Cardiff	Newcastle
Postgraduate researchers	365	132
Research-only	224	140
Teaching and Research	475	285
Teaching and Scholarship	65	28
Professional Services	161	157
No response/self-described	22	99
<b>Total</b>	<b>1312</b>	<b>841</b>

Across the two surveys, there were striking similarities in the findings. Quantitative results at both institutions provide evidence of positive experiences around collaboration and collegiality, and widespread perceptions of strong institutional commitments to research integrity and open research. However, more negatively, just over a third of colleagues felt that they had sufficient and/or quality time to think creatively and develop their ideas: this was the case for just 36% of all respondents at Cardiff and 34% at Newcastle. At both institutions, this proportion was lower for academic colleagues than for researchers or professional services colleagues. Cardiff also asked quantitative questions about work-life balance and wellbeing; 47% of respondents indicated that they were happy with the overall hours they work each week, with 38% disagreeing with the sentiment.

Extensive qualitative comments provided a richer and deeper understanding around how time impacts current research culture and colleagues' experiences. Along with a need for more time to be creative and develop ideas, respondents highlighted many activities that they felt they didn't have sufficient quality time for, including preparing grants, writing papers, designing innovative research, exchanging ideas and learning from others, horizon scanning, and building networks. Colleagues also mentioned a lack of time being a barrier to accessing career development opportunities, finding training and developing new skills.

Respondents in both surveys reported a range of specific issues that lead to insufficient quality time for research, including: routine administrative duties, unnecessary form filling, navigating over-complex processes and procedures, overly bureaucratic management of teaching, providing quality student supervision, inefficient policies, clunky systems, and a proliferation of meetings. Colleagues highlighted how daily demands led to research being pushed into evenings and weekends, impacting on their lives outside work and their overall wellbeing, and exacerbating inequalities for those with caring responsibilities. Some colleagues indicated that they were contemplating alternative careers, outside of academia, due to workload and time pressure:

*There is no time at all to pursue creative ideas. This all needs to be done in your own time which is not always possible (due to research and academic pressures). [Research-only contract, Woman, White - all UK based or international identities, Part-time, Newcastle University]*

*We lack the most important resource: quality time, to think creatively and explore ideas. For colleagues who take on roles like directors of X in the school, the time spend [sic] on these roles are not properly accounted with teaching and research and most often the research is done when there are spare times after work and during the weekend. [Academic Teaching & Research contract, Full-time, Newcastle University]*

*Workload seems to be ever increasing and is taking over more of my evenings despite my efforts to keep this to a minimum. My young children comment about how much time I spend working and lack of time with them. It isn't sustainable. [Academic Teaching & Research contract, Female, 35-44 years, White – British, Open-ended contract, Cardiff University]*

*Every researcher and academic I know works well over their allocated working hours. If you don't work beyond the usual working week, you are less likely to progress and valued less. Maintaining a work-life balance is almost impossible. [Academic Teaching & Research contract, Female, 25-34 years, White – British, Open-ended contract, Cardiff University]*

The issues of workload and time poverty reported at Cardiff and Newcastle are not unique to our institutions and have also emerged in the results from surveys elsewhere, including St Andrews and Wellcome (**e.g., Albaghli et al., 2021: 25; Wellcome, 2020: 37-38**). Similarly to our data, and in line with a more recent survey of University and College Union members (**UCU, 2022**), qualitative comments from these two earlier surveys point to respondent perceptions that pressures on their time had increased over recent years. As noted in the Wellcome report:

*High workloads and long hours appear to be viewed as part and parcel of research life, but their impact on researchers' wellbeing is felt to be worsening as the demands of jobs grow and competition increases. (Wellcome, 2020: 34).*

The issue of time poverty is a complex and structural one, tied to a range of sector-wide challenges. Our survey respondents highlighted numerous perceived causes, including increased bureaucracy at institutional level, particularly relating to the management of teaching and student experience. For some, the Covid-19 pandemic exacerbated existing problems through added workloads associated with the pivot to online

teaching, coupled with caring responsibilities brought about by the closure of schools and childcare facilities (Corbera et al., 2020). As research has shown, adverse impacts of the pandemic were not distributed evenly. Academic mothers with young children were far more likely to report mental health and productivity challenges because of caring responsibilities (Crook, 2020; Kasymova et al., 2021).

More broadly, UK HEIs are facing an increasingly challenging financial environment, due to decreased income from tuition fees and grant funding, coupled with increasing costs (Universities UK, 2024). In some cases, this has led to increased workloads through reduced staffing levels, including reduced financial and administrative support for research (e.g., Hanna, 2023). Furthermore, evidence suggests that the growth of bureaucratic processes is perceived to restrict academic autonomy across the sector (Nash, 2019; Ylijoki & Mäntylä, 2003). Other conversations in our own institutions revolve around how the pendulum swings from emphasis on delivery of education to research and back again, as universities worry about their position in various evaluation exercises and league tables. Continuous and frenetic activity can make it difficult for colleagues to know how best to effectively spend their time or create time and space for 'deep work' (Newport, 2024). Along those lines recent years have seen prominent calls for 'the slow university' (O'Neill, 2014) and 'the slow professor' (Berg & Seeber, 2016) to challenge the stress associated with a constant experience of 'time crunch' and to 'advocate deliberation over acceleration' (Berg & Seeber, 2016: xviii).

Whatever the causes, the lived experience of time poverty has a profound impact on research culture at our institutions and across the sector. However, as many of our respondents pointed out, although our surveys focused on research culture, solutions to structural issues will sit outside of the research domain, and releasing the pressures on time will need a broader institutional or sector-wide response. Perhaps the findings from research culture surveys can be a lightning rod for sector-wide thinking and change.

### **What Can We Do About It?**

Tackling the issue of time poverty in the context of research culture is complex, but we want to articulate how important we think it is. We recognise that in the context of improving research culture, there are initiatives in the sector for reducing research bureaucracy to free up more time (e.g., Tickell, 2022). However, research is not conducted in a vacuum away from other activities, in particular, there is an interdependency between education and research, and people have additional requests on their time and commitments in terms of administrative and leadership roles and responsibilities (Bell, Rajendran, & Theiler, 2012). Therefore,

tackling time poverty needs a much more co-ordinated and concerted effort.

Given the prominence of time poverty in our research culture surveys, we are taking steps at our institutions to address it. Interestingly, and independently from one another, we are doing so in similar ways. For example, we are both looking to protect time for research, through supporting writing groups and retreats, exploring and revising sabbatical and research leave policies, and seeing what initiatives work at local levels (e.g., meeting free days and weeks, and email policies). As part of their Research Culture Action Plan, and under a top priority project of 'Releasing Quality Time', Newcastle University has funded off-campus writing retreats, and is now developing a more sustainable and inclusive model for group writing activities. The current aim is to work with the research community to produce a set of resources that make organising local retreats easy, including finding and booking suitable local locations, suggestive itineraries and guides, and how to make the most from the time away from the desk and everyday tasks. The aim is not only to make organising retreats easy, but to emphasise the value of protecting time, and give colleagues and students permission and tools to do it, to help create a more values-driven culture. Similarly, Cardiff has started their own initiative, entitled *Taking Back Time*. The institution has re-introduced a university-funded research leave scheme, additional to school-level schemes already operating and will be piloting school-level initiatives to free up time, which may include meeting-and-email free days, and short-term research leaves measured in weeks and days. Cardiff is also funding writing retreats for female Principal Investigators, facilitated through the EMPOWER Network for Female PIs. This is a priority because women have been identified as particularly subject to the challenges of carving out research time (e.g., Murray and Kempenaar, 2020). Both universities are collating local initiatives to protect time for research, to see what works and what does not, and identify cultural or structural barriers that need addressing. These also sit in wider initiatives and activities at multiple organisational levels that seek to streamline research (and other) processes, reduce bureaucracy and meeting time, make it easy to find information, and give more agency for decision-making.

Across the sector, we believe that institutions ignore time poverty at their peril. Not only can it significantly impact colleague experience, performance and research quality, but it also restricts colleagues' abilities to engage with and contribute to activities to improve local and institutional research culture. Whether it be increasing mentoring, building networks and collaborations, developing open research practices, or upskilling to improve leadership, education and management capacity – these all take time. Therefore, tackling time poverty in a wider context

will be essential to improving research culture as well as staff and student experience. We see it as a fundamental and systemic driver for many of the discrete challenges to a positive research culture. As an underlying issue, it has remained largely invisible because of our emphasis on discrete and siloed issues which can make it difficult to detect structural problems.

It is certainly the case that there isn't one solution to the problem. Rather, solutions will be diverse and tailored to specific environments, opportunities and constraints. We do, however, believe, that universities – and the groups and individuals working within them across the sector – have the agency to address the problem and improve research culture.

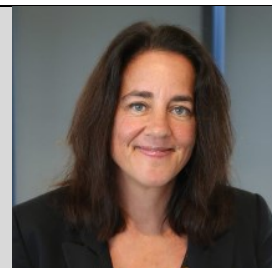
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Karin Wahl-Jorgensen has been Dean of Research Environment and Culture at Cardiff University since 2021. In that role, she works to develop a more inclusive, collaborative, and creative research culture across the institution. She led the development of Cardiff's Research Culture Action Plan and the first institutional research culture survey. She is a member of the GW4 Board and UKRN Institutional Lead. She is also a Professor in the School of Journalism, Media and Culture. Her research focuses on journalism and citizenship, and she has authored or edited ten books, more than 80 journal articles and 45 book chapters.



Candy is Professor in Animal Behaviour and Cognition at Newcastle University, and also Dean for Research Culture & Strategy there. She has responsibility for enhancing research culture across the institution, and the programme of work that she now leads on includes a priority project to release quality time for research. Over the last 10 years, she has held a series of leadership roles, with a particular focus on researcher career development and equality, diversity and inclusion. She strongly believes in cross-institutional collaboration for sector-wide change, as seen in this joint publication



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# An (Research) Enabler? ‘A Person Who Encourages or Enables Negative or Self-Destructive Behaviour in Another’: Autobiographic reflections

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## Abstract

*A brief critical reflection on the term ‘Research Enabler’ within the context of the developing UK national agenda to broaden and deepen the collective understanding of research communities and cultures within higher education and whether that is a helpful term to support the development of healthy research cultures. The term ‘Research Enabler’ refers to a broader set of occupational groups beyond research administrators to include academic librarians, IT staff, knowledge exchange professionals, technicians, and estates staff. This paper will reflect on the term from the perspective of a research administrator.*

*An enabler is a person or thing that makes something possible. However, within taxonomies of addiction the term ‘Enabler’ has more negative connotations as someone who encourages or enables negative or self-destructive behaviour in another. This is not to characterise researchers as addicts and research administrators as negative enablers but to draw attention to the language being used having potential negative and dualistic interpretations for an occupational group who often self-report ambiguity and duality as inherent in their complex roles.*

**Keywords:** research enablers; research administrators; non-academic; research cultures

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## Introduction

This reflection seeks to critique the recently emerged term of ‘Research Enabler’ (**Research England, 2023**) through the lens of my experience as a research administrator/enabler of over 22 years.

The ostensibly positive and active term ‘Research Enabler’ has emerged in recent years as part of a new taxonomy for a broader recognition of the occupational roles and identities that make up the village of a research community beyond the academic researchers themselves. This has been brought into focus within the British higher education system by the government publication of the ‘R&D People and Culture Strategy’ (2021), the work of the Future Research Assessment Programme (FRAP) and the ‘Initial Decisions and Issues for further consultation from Research England’ (**Ibid**) for the next national research excellence assessment exercise – REF2029.

Embraced by many as a positive development and exemplified by the creation by ARMA (Association of Research Managers and Administrators) of the Research & Innovation Enabler Café Culture Toolkit, the term has grown in popularity in the UK. Networks like the Research Culture Enablers Network and the PRISM network for Professional Research Investment and Strategy Managers and ARMA use the term positively. Any ‘Non-Academic’ working to support research will have experienced some tensions in their role often related to esteem and professional identity and it is not surprising that positive terms are embraced by those supporting research.

As emerging debates and definitions of what constitutes healthy research cultures and who is included, we need to be conscious that ‘Language underpins cultural norms, big and small D discourses that determine, impost and project identity. Unless language is critically analysed then the construct of identity is formed based on biased stereotypes that normalise power dynamics (academic vs non-academic) and perpetuate system injustice’ (**Caldwell, 2023: 1**). If we embrace the term ‘Research Enabler’ we need to reflect on whether this will signify a positive change or perpetuate long-held experience of tensions between occupational groups. There needs to be a conversation around terminology and potentially a co-design of research communities to ensure positive, inclusive, and healthy research cultures become the norm, responding not only to the professional identity needs of researchers but also to those who work as research enablers/facilitators/professionals/research adjacent (s) – rebuilding them through language and practice as a team.

## **Metaphors**

Research administrators sit within and across occupational cultures of innovation, research, and knowledge exchange (for which individual academics and Universities are rewarded) whilst having to enforce and value a culture of control and compliance (for which individual academics and Universities are also awarded) but are seemingly in tension with each other. Academic reflections within existing literature (primarily US based) on the identity of research administrators often wrestle with the dualities and dichotomies inherent within the role – academic vs non-academic, friend vs foe of the academic researcher, freedom vs control. The navigation work research administrators engage in to establish themselves as part of a research community and culture is a constant refrain from those identifying as research administrators - ‘The boundary-crossing, ambiguous, dual-faceted nature of the research administrator role, as described by interviewees, would appear congruent with the concept of liminality, certainly with regard to status-shifting and ambiguity’ (Allen-Collinson, 2006: 275).

Research administrators sit alongside and within research cultures and encourage the outputs of academic freedom whilst often having to enforce a culture of control and compliance. Metaphors for research administrators can echo classical civilisation - ‘Janus Face’, (Hansen et al., 2004), ‘Shield and Protector’ (Larkin, 1982), and ‘Custodians of the Corporate Conscience’ (Gabriele, 1998). Interpreted one way a custodian is a person who has responsibility for taking care of or protecting something, and the use of the metaphor is positive. Interpreted differently a custodian is there to limit freedom or provide custody or guardianship of prisoners or inmates. There is a tension in the metaphor that speaks to the tension within these roles and their place within a research culture.

When we consider the term ‘Enabler’ as a metaphor for research administrators we can again perceive a duality that is inherent in the role. The term ‘Research Enabler’ refers to a broader set of occupational groups including research administrators to include academic librarians, IT staff (and on reflection most of any University community, including students are ‘Research Enablers’). An enabler is, through one lens, a person or thing that makes something possible. Through another lens and in popular understanding of and taxonomies of addiction it has more negative connotations as someone who encourages or enables negative or self-destructive behaviour in another. ‘The ongoing well-meaning assistance is destructive to the addicts who, shielded by enablers from the negative consequences of their acts, continue in a dangerous downward spiral. When individuals are enabling, they believe that because they can help, they should support and that anything else is unkind. Enablers hold

themselves responsible for fixing a problem that they (usually) cannot heal. They convince themselves that the enabled will self-destruct if they stop intervening and without compassion if they let that happen, even responsible for it happening (Von Bergen, & Bressler 2020: 14). This is not to characterise researchers as addicts and research administrators as negative enablers but to draw attention to the language being used having dual interpretations for an occupational group who often self-reports ambiguity and duality as inherent in their complex roles. If we need a metaphor to try and conceive the experience of research support roles is 'Research Enabler' an entirely positive development?

The term 'enabler' if taken negatively within a taxonomy of addiction may imply that research support professionals are passive, lack agency beyond being responsive to untimely demands, fixing issues which involve cleaning up after another person's mess, performing activities that the other person should do for themselves, coming to the rescue of the other and frequently feeling emotionally drained or exhausted. This creates an unhealthy culture of dependency rather than one of empowerment and support and can lead to disrespect and resentment between different (professional) families.

To address the negative role of enabling the 'enabler' needs to move both parties to a healthier place and understand that continuing to do the same things will prolong unhealthy behaviours. Investing time to reflect and unpick the relationship between research professionals and researchers within academic institutions will be of long-term benefit to the individuals and institution. Devising solutions can be obtained through open and transparent conversations, the co-creation of boundaries, confidence to let others see and feel the consequence of their actions, effective accountability mechanisms and a reduction of individuals taking on the fire-fighting role which may be of short-term benefit (and make the enabler feel needed) but ultimately incentivises healthy behaviours and in turn healthy cultures.

### **Autobiographic Reflection**

I have worked as a research and knowledge exchange administrator since 2001 working within three very different Universities within the UK in several professional service roles that have enabled research. These roles have been broad and included support for research funding, governance, postgraduate research, knowledge exchange, entrepreneurship, and innovation. I have served and supported established, older, newer, and quite distinctive research communities within and across disciplines.

All these complex roles have necessitated an ability to ensure high levels of compliance with external regulations and policy guidance. The sector has moved on from the Research Assessment Exercise (I was an Assistant panel secretary for RAE 2008 in the criteria setting stage) to the Research Excellence Framework (REF) and the Knowledge Exchange Framework (KEF), from Graduate Schools to Doctoral Colleges, from Regional Development Agencies to Local Economic Partnerships (LEPS). I have worked within research and knowledge exchange support role throughout these changes.

I have held institutional responsibility for strategies, policies and guidance for research, postgraduate research, and knowledge exchange without being employed as an academic researcher. Throughout this career I have not felt a full member of a research community but as an invisible supporting role trying to fix a high volume of small administrative and technical issues. Engaging authentically with academic staff to build trust whilst enforcing institutional objectives (despite academic frustrations with processes not experienced as enabling) has placed me regularly in spaces of tensions which have not felt part of a healthy research culture. Rather than challenge the underpinning causes of this difficult symbiotic relationship I have been part of maintaining a status quo and accepted and therefore enabled negative and destructive behaviours.

If 'Research Enabler' is to be embedded as part of the lexicon of research cultures where a broad set of occupational roles are recognised as integral to healthy research cultures, then we need to go beyond tweaks in language and have a collective conversation about how to co-design research communities, cultures, and language to the benefit of all internal and external stakeholders. The users and beneficiaries of research will benefit, and we will strengthen our collective impact if we address this aspect of research culture development thoughtfully and with intent to change.

## **Conclusion**

The emerging term of 'Research Enabler' has given me pause for thought on my role as a long serving research administrator within higher education and spurred me to review where this new term may sit in terms of existing metaphors and reflections on these occupational roles. My conclusion is that ultimately this term is reductionist and does not adequately support an understanding of the complexity and duality inherent within the complex roles that research administrators and managers perform. The development of this term may be a helpful red flag and warning to those leading on the development of research cultures to avoid. Leaders should seek terms that reflect more positively the genuinely



supportive and empowering position these complex roles should occupy - valued as fundamental to a healthy research culture and community.

For this term to be a positive development we would need to ensure it does not perpetuate a status quo where the relationship between different occupational roles within research communities is not fundamentally addressed. There is a clear opportunity for change as we reflect collectively on healthy research cultures but one that could be missed if not included in institutional Research and People strategies.

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# Research Culture Challenges among Early Career Researchers: A qualitative study

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## Abstract

*Early career researchers (ECR) experience challenges particular to their career stage. Defining ECR as those with up to 10 years post-PhD experience, which includes postdoctoral research associates (PDRA) and graduate research students (GRS), this paper identifies some of the key issues that impact ECR based on qualitative research findings. The method used was a questionnaire in which 79 PDRA and 272 GRS from University College Dublin (UCD) responded to open-ended survey questions about research culture improvement, university acknowledgments, and promoting a positive research culture. Additional feedback was obtained from 23 PDRA and 57 GRS through post-survey focus group discussions. The challenges for ECR that were raised most consistently were: precarity, mentoring, and acknowledgement.*

**Keywords:** acknowledgement; early career researchers; mentoring; precarity; research culture

## Introduction

The challenges facing early career researchers (ECR) differ from those encountered by researchers at later stages in their careers. For instance, ECR face greater challenges around precarious contracts, competition for jobs, increasing publishing pressures, fewer funding opportunities, and mental health difficulties, which may have been exacerbated during the COVID-19 pandemic (**da Silva, 2021**). Based on qualitative research findings that used content analysis of open-ended responses and focus group discussions, we identified key challenges in fostering a positive research culture for ECR. Among the issues raised, the three topics discussed here were mentioned most consistently in relation to ECR across all feedback: precarity, mentoring, and acknowledgement.

In 2021, the Research Culture Initiative at University College Dublin (UCD) was established under one of four pillars of the University's Research Strategy (**UCD Research, Innovation and Impact, 2021**). Its primary objective was to assess research culture at UCD and establish a baseline against which to measure future progress. The initial step was to survey the research community with quantitative and qualitative questions, which was undertaken in November 2021 (**UCD Research Culture Initiative, 2022a**). The survey was followed by a series of World Café focus groups, conducted in the Spring of 2022, intended to validate and extend the survey findings (**UCD Research Culture Initiative, 2022c**). Qualitative findings from the survey and focus groups are reported here.

Recognising that many cultures exist within the research community at UCD, our definition of research culture encompasses the way we do our research, our behaviours and attitudes to each other in our work, how we value the contributions of others involved in our research, and how our research is communicated. It underpins both research excellence and research integrity, describing how individuals, teams, research performing organisations, funders, publishers, and other stakeholders interact and support each other in the conduct of research.

## Definition of ECR

A range of definitions for ECR exists, often counting time from the date that the doctoral degree was awarded. UK Research and Innovation, for example, identify an ECR as someone who is 'within eight years of their PhD award (this is from the time of the PhD 'viva' oral test), or equivalent professional training' but also consider an ECR to be someone 'within six years of their first academic appointment', where research or teaching are principal duties (**UK Research and Innovation, 2023**). The science research publisher Elsevier also describes an ECR based on the length of time since their doctorate was awarded – five years or equivalent professional

standing (Elsevier, 2023). In Ireland, the Royal Irish Academy considers an ECR to be someone who received their doctorate within the last eight years (Royal Irish Academy, 2021). For the purposes of UCD research culture analysis, the definition of an ECR is someone training in research who has no more than 10 years' experience post-PhD, which allowed for most postdoctoral research associates (PDRA) as well as graduate research students (GRS) to be included in the qualitative study. Within this framework, GRS are students working towards a research master's degree or doctoral degree. PDRA have already earned a doctorate or equivalent and are engaged in a research role where they benefit from on-the-job training which can last up to 10 years.

## **Methodology**

For the present study, the primary method used was a questionnaire modelled on one used by the University of Glasgow in 2019 (University of Glasgow, 2019). Participants responded anonymously to fifteen questions in total (UCD Research Culture Initiative, 2021b): six questions collected demographic data; two Likert-scale questions asked how respondents perceived University support for programmes and positions that enable positive research culture and their individual experiences of support from colleagues and the institution; two multiple-choice questions gauged awareness of 11 elements of best practice in research; one question asked if research culture had improved in the last three years; four asked open-ended questions on three topics:

- Research culture improvement (*Reflecting on the past three years, do you think that research culture has improved at the University?*)
- University acknowledgments (*What University acknowledgement would you like to see for your research contributions?*)
- Promoting a positive research culture (*As an institution, what one practical thing could we do to promote a positive research culture?*)

Here, we report findings from the open-ended survey questions. GRS (n = 286) represented 27% of the total survey responses (see Figure 1) and 14% of all GRS at UCD (see Figure 2). PDRA responses (n = 79) accounted for 8% of the total survey responses (see Figure 1) and 26% of all PDRA at UCD (see Figure 2).

Figure 1: UCD Research Culture Survey 2021, percentage responses from each research role.

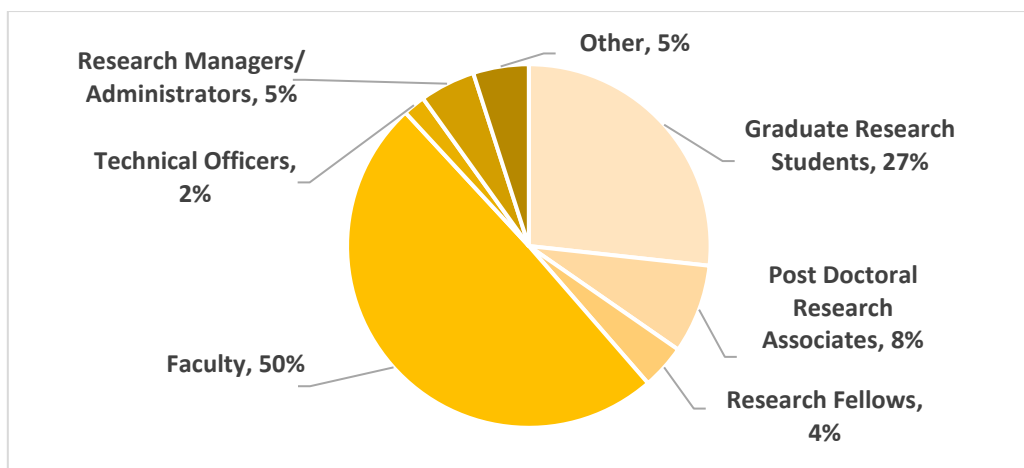
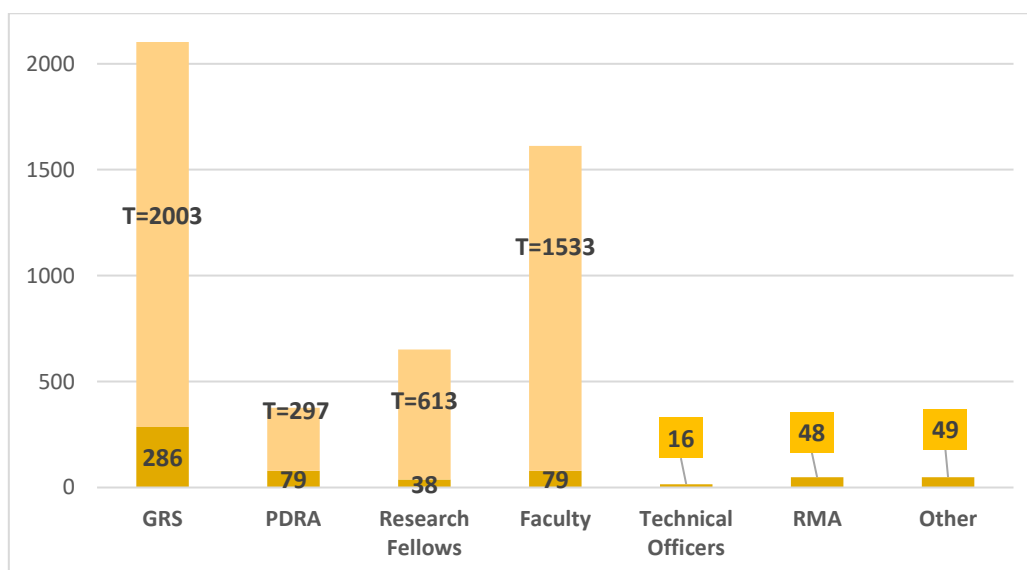


Figure 2: Response rate across roles. The total population (T) at UCD for GRS, PDRA, Research Fellows, and Faculty was determined by institutional statistics. For Technical Officers, Research Managers/Administrators (RMA) it was not possible to accurately determine total population at UCD.



Additional qualitative feedback was obtained from 23 PDRA and 57 GRS through post-survey focus group discussions conducted in the spring of 2022 (**UCD Research Culture Initiative, 2022c**). Modelled on Wellcome Café Culture knowledge cafés, these forums were intended to foster an inclusive, candid, and confidential environment with the goal of enabling participants to share their thoughts and feelings comfortably (**Wellcome, 2019**). Using semi-structured discussion techniques designed to move from general issues to specific points, the conversations addressed topics raised in survey responses. Within the broad Research Culture Initiative, a total of thirteen focus groups were conducted and in each the topics of collegiality and collaboration were discussed. Participants self-selected through an open call. Some may have responded to the Survey but as participation in the Survey was anonymous, identification was not possible. Two focus groups were held exclusively for GRS and a third for

PDRA only. These ECR cafés were further tailored to include mentoring and parity of esteem as discussion topics.

Qualitative responses to each of the three survey questions and focus group comments were categorised into general themes using an inductive method, establishing themes from the text responses themselves. Observations about the experience of ECR at UCD and in the research ecosystem generally were made by GRS and PDRA as well as other members of the research community including faculty, technical officers, and research managers. Of the issues raised, the three which were brought up most consistently are discussed here.

### **Precarity**

We found that the topics of precarity and salaries for ECR were raised in relation to research culture at UCD. Survey and focus group respondents emphasized the need for increased resources to support GRS stipends. The high cost of living in Dublin, particularly for rental accommodation, was viewed as making ECR salaries inadequate. Respondents argued that raising GRS salaries would ultimately benefit academic staff by attracting high-quality research students. Concerns also arose about the precarious nature of PDRA fellowships and their broader consequences. Short-term contracts with strict milestone requirements were listed as a barrier to developing external collaborations, which would benefit the long-term PDRA career as well as the institution.

Focus group participants indicated that precarity was partially mitigated by the considerable training resources offered to ECR at UCD. Training is provided in research and transferable skills for alternative career pathways to all ECR. The availability of masterclasses and workshops through the UCD Library, the Graduate Studies Office, and university research institutes were rated as significant research culture benefits for GRS. Likewise, PDRA reported the opportunities to obtain training through the UCD Postdoctoral Careers Centre as a positive aspect of the environment at UCD. Finally, in response to the Likert-scale survey question 'To what extent do you agree that UCD supports a culture of personal and professional development', more than two-thirds (67%) of GRS and more than half (55%) of PDRA strongly agreed or agreed with this statement (**UCD Research Culture Initiative, 2022a: 9**). Focus group discussion responses aligned with the responses to this survey question, suggesting that participants' qualitative insights mirrored the quantitative findings.

In line with our qualitative findings, job insecurity within academia was one of five key risks to research culture identified by a qualitative study conducted by Wellcome in 2019. Participants in the Wellcome study indicated that objectionable behaviour could be induced by precarious

employment, with consequences for the entire research ecosystem (**Moran & Wild, 2019**). In the early phase of a research career, temporary contracts have become the norm. The 2018 International Survey of Science found that more than half of researchers under the age of 45 were on fixed-term contracts (**Bello & Galindo-Rueda, 2020**). Nearly a quarter (23%) of ECR responding to the 2023 Culture, Employment, and Development in Academic Research Survey in the UK indicated that their contracts were 12 months or shorter in duration (**CEDARS, 2023**).

## **Mentoring**

UCD survey and focus group participants felt that availability of mentors has been uneven across the organisation, as summarized by the following quote from a survey respondent, 'Mentorship is not guaranteed'. For some, arrangements were *ad hoc*, sometimes leaving junior colleagues at a loss with regard to finding a mentor. Others reported good mentorship programmes in their areas. However, even when mentoring was available, arrangements could seem provisional, suggesting that the conditions of the mentorship lack clarity. Junior staff could feel they were in an untenable position if their mentor-mentee relationship was not functional (e.g., 'I find it unacceptable that so many people just have to put up with working under an unsupportive supervisor just because they don't want to put their degree at jeopardy if they complain').

Focus group participants favoured semi-formal arrangements that required some structure. They also expressed a preference for programmes situated locally in departments rather than at the institutional level to provide flexibility to adapt to departmental culture.

Mentorship training was also identified by survey and focus group participants as being vital for successful mentorship relationships. Training for supervisors of research students has been offered by the UCD Graduate Studies Office since 2012. Complimentary training for research students maps onto supervisor training so that both groups are operating within the same framework of best practice. UCD HR People and Organisation Development also offer mentoring programmes for staff. Research Culture Survey results confirmed the value of mentorship training. Still, it can be difficult to recruit motivated and committed mentors (**Hegstad & Wentling, 2005; Weinberg & Lankau, 2011**), and therefore further research into the expectations, benefits, and best practice in mentorship is needed.

To learn more about best practice in mentorship at UCD, our team conducted informal interviews with members of the research community, many of whom have been internally and/or externally recognized for their



excellence as mentors. The role of the mentor can be varied, but three common points of best practice were raised by those interviewed.

First, the role of the mentor in the professional, but also personal, development of the mentee was a common thread. A good mentor invests in the mentee as a person, helping to develop their outlook as a colleague and collaborator. Every mentee is different so those we interviewed advised getting to know each mentee as an individual to understand how best to offer support. This is an essential type of caring that underpins the most effective mentoring relationships. According to Professor Cormac Taylor in the UCD School of Medicine, one of the rewards of being a mentor is helping someone develop as a person and build not only a career, but a life.

Second, creating a space where people can experiment, flounder, and try again was highlighted as fundamental to the research process and a key role for a mentor. In 2012, the technology company Google initiated Project Aristotle to study characteristics of successful and unsuccessful teams (**Duhigg, 2016**). Psychological safety, or the security to take risks and be vulnerable in front of colleagues (**Edmondson, 1999**), was identified by Google's research as one of the five decisive qualities of highly effective teams. Best practice in mentorship offers support for students and junior colleagues through the full practice of research from failed attempts to success.

Finally, the simple act of listening to a mentee provides valuable support. Experienced mentors advised to simply let the mentee talk. Those we interviewed affirmed that for the most part, mentees know what they need to or want to do; they just need the opportunity to talk it through. As Professor Pat Guiry from the UCD School of Chemistry observed, 'Can't beat a cup of coffee and sitting down with someone'.

Career workshops for GRS or PDRA typically reveal that while the majority of people who obtain doctorates are aiming to have careers in academia, most will not (**The Royal Society, 2010**). Instead, more than half of doctoral researchers move on to work outside the academy in a diverse range of roles (**Arbeit et al., 2021**). The early career period is a crucial time for determining the ultimate career path of researchers and mentoring is thus a critical factor. Participants in Wellcome's workshops indicated that mentoring practice has a significant influence on perceptions of research culture and prospects for a research career (**Moran & Wild, 2019**). Mentors can offer knowledgeable guidance to mentees on the factors that establish an academic identity, such as publications, collaborations, developing a network, and research funding awards (**Schriever & Grainger, 2019**). Success requires vision and strategic planning, qualities which develop through time and experience. It is not realistic to expect an

ECR to navigate this landscape independently (Cleary et al., 2017). Mentorship, then, is a valuable mechanism for training the next generation of researchers and nurturing excellence.

## **Acknowledgement**

In their position paper on recognition systems in research, Science Europe affirmed that the mechanisms for acknowledging research achievement exert ‘profound influence over the ways in which research is conceived, conducted, disseminated, communicated, and used...’ and thus is ‘intrinsically linked to research cultures’ (Science Europe, 2023). Many UCD ECR survey and focus group participants agreed that praise and acknowledgement is important to counteract the critique and rejection that is part and parcel of a research career. There was a general call for recognising a wider range of research outputs by ‘broadening of the definition of research contributions/impact to better capture engagement and outreach’, as well as a reduction in emphasis on metric-driven acknowledgements.

In our qualitative study, we found strong support for team-based acknowledgement with particular reference to ECR, as exemplified by the following quote, ‘It would be helpful if the University gave greater visibility to research contributions of early career researchers (especially PhD candidates and postdocs)’. Increasing the visibility of research contributions through acknowledgement of ‘students’ participation in conferences and publications’ on the UCD website or with academic profiles was encouraged.

Survey responses linked an increase in stipends and salaries for GRS and PDRA to recognition of the important role that these researchers play in overall University research outputs. A related theme was the perception of many ECR that their status is ambivalent. GRS reported that they would like to be recognised as ‘researchers in their own right’ and PDRA reported feeling like they fall somewhere in between staff and temporary contractors, with an undefined status.

## **Insights**

The UCD Research strategy states that ‘we want every member of our research community to experience a positive culture that clearly values research and an environment that supports them to reach their full potential’. The Research Culture Survey and follow-on focus groups identified at least three challenges for ECR.

The issue of ECR job precarity is multifaceted. Systemic limitations dictate the length of contracts that can be offered and the salary range. In the months following our focus group sessions in the spring of 2022, the topic

of GRS stipends became a matter of public debate in Ireland with GRSs organising a campaign of protests at the Dail (Irish parliament). The Minister for Further and Higher Education announced a €3000 increase in PhD stipends to €22,000 annually to begin from January 2024 (**Bowers, 2023**). The sector deemed it critical that undertaking a doctorate should be feasible in Ireland in terms of earning a living wage or there is a risk of losing talented ECR. Almost all PDRA and many GRS at UCD are employed through grant funding which is, by its nature, fixed term. Indeed, Research Career Frameworks assume researchers will progress through the GRS and PDRA phases and onto the next stages of a career, within the academic or another sector.

Quality mentoring can facilitate the transition, yet sufficient measures to ensure quality are not yet standard across the University. Mutual understanding of expectations for the mentorship relationship is one key to success. Training in best practice is another. Acknowledgement of the investment in mentoring may be an incentive to recruit more mentors. Benefits of mentoring have not been well studied, and therefore further research on how mentorship facilitates career growth and development for the mentor may be valuable (**Schriever & Grainger, 2019; Ragins & Verbos, 2007**).

Acknowledgement of achievements is undeniably vital to the research process. For ECR it has particular significance in that recognition demonstrates present value within the current institution and is a marker of progression to the next career stage.

## **Conclusion**

The early stage of a research career is a critical juncture regardless of discipline. Qualitative analysis of comments made by ECR at UCD revealed three main research culture challenges: precarity, mentoring, and acknowledgement. To navigate these challenges, ECR require guidance and strong mentorship via a network of sources. These challenges are not unique to UCD and are likely reflected more widely across the research ecosystem.

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Colleen Thomas holds a doctorate in the History of Art from Trinity College Dublin. Her research interests focus on the monumental sculpture of early medieval Ireland and Britain with particular emphasis on the visual representations of sanctified spaces and their relationships to cosmological time. Her research career has taken a curvy path beginning in industry as an art



museum professional, then becoming an academic researcher, and at present, a research manager. Since 2021 she has been the project manager for the University College Dublin Research Culture Initiative, supporting one of four pillars of the UCD Research strategy and informing a national conversation on research culture in Ireland.

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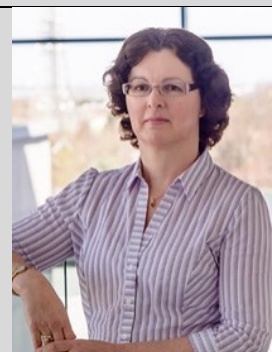
Grace Mulcahy is Full Professor of Veterinary Microbiology and Parasitology and spent almost 10 years (Jan 2007- Sept 2016) as Dean of Veterinary Medicine at University College Dublin. She leads an active research group focussing on helminth immunobiology, gut microbiota, and One Health. She is a Member of the Royal Irish Academy. In 2019, Professor Mulcahy was appointed UCD's Research Integrity Officer (RIO). UCD's Research Culture initiative arose from the Research Integrity team's conviction of the power of a positive culture to enhance both research integrity and research excellence, reflecting UCD's strategic plan and strong commitment to research culture.



Adrian Ottewill holds a doctorate from the University of Oxford and is Full Professor Emeritus in the Department of Mathematical Physics at University College Dublin. He is internationally recognised as a leader in research covering numerous aspects of quantum fields in curved space-time and has been involved in the emerging field of gravitational wave astronomy through the National Science Foundation's ground-based LIGO project. Professor Ottewill was the founding director of UCD's Institute for Discovery which supports emerging and early-stage interdisciplinary research. He served as the UCD Deputy Research Integrity Officer and was instrumental in establishing the UCD Research Culture Initiative.



Gillian Boyle holds a Masters in Agricultural Science from University College Dublin, specialising in Soil Science. She spent eleven years working as a researcher, then moved to her current position in the central research office in UCD. She worked as Team lead in the Proposal Support Team for fifteen years, providing advisory and support services to researchers submitting research proposals. Her current role includes research policy development and implementation, and she provides support to the Research Integrity office. She was involved in the instigation of the UCD Research Culture Initiative in 2021 and continues to be an active team member in this project.



Charles Ivar McGrath is Professor in the School of History, University College Dublin. He received a BA (1989) and an MA (1992) from University College Dublin and a PhD (1997) from the University of London. Professor McGrath is a leading and internationally recognised expert in eighteenth-century Irish and British history, with a particular specialisation in political, financial, legislative, religious, military, and intellectual history. Outside of academia, he spent three years serving as a private soldier in the Irish army including six months with UNIFIL in 1984-5, and eighteen months in the civil service in London in 1992-3. In 2022, Dr McGrath joined the UCD Research Culture team.



Maura is an Adjunct Professor at University College Dublin and a former senior manager at the Health Research Board Ireland. She has been actively involved in advancing research integrity policy for many years, serving in various leadership roles such as Treasurer of the World Conference on Research Integrity (WRI) Foundation Board and Co-chair of the 8th WRI. Maura is also Chair of the ALLEA Permanent Working Group on Science and Ethics and has co-authored the ALLEA European Code of Conduct for Research Integrity (RI) 2017 and 2023. Additionally, she sits on several EU Policy and Stakeholder Advisory Boards for EU projects that research RI and ethics issues.



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## List of Figures

**Figure 1:** UCD Research Culture Survey 2021, percentage responses from each research role.

**Figure 2:** Response rate across roles. The total population (T) at UCD for GRS, PDRA, Research Fellows, and Faculty was determined by institutional statistics. For Technical Officers, Research Managers/Administrators (RMA) it was not possible to accurately determine total population at UCD.

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# A Decolonising Approach to Policy Impact in the Global South: Lessons for research culture

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## Abstract

*Efforts to decolonise Higher Education are a key element of work to develop a more inclusive and equitable research culture, but what this means in the context of research impact has seldom been explored in depth. In particular, the pursuit of policy impact in Global South countries throws up particular potential challenges around the reproduction of postcolonial power structures and inequitable partnerships that academic staff need to be prepared to navigate. The University of Nottingham Institute for Policy and Engagement, along with international partners, has begun to explore what decolonisation means in the policy impact context, and what researchers, universities and the sector as a whole might do to ensure this growing area of work takes proper account of the cultural and historical contexts in which it takes place.*

**Keywords:** decolonisation, impact, international, knowledge exchange, policy

## **Background**

In recent years the increasing importance of ‘impact’ within research in the UK higher education sector has been marked, epitomised by the development of the Research Excellence Framework and its explicit valuing of research that has ‘an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia’ (UKRI, 2022). One estimation puts the value of the most ‘significant and far-reaching’ impacts to the submitting University at an average of £308,000 for the 2014 REF (Research Excellence Framework) process (Reed & Kerridge, undated); for the next REF this is set to rise still further (Kerridge, 2023). This has created pressures on academics to achieve – or claim – impact from their research, often as part of conditions to attract funding (Chubb & Watermeyer, 2016). An emphasis on social, policy and service benefits in addition to commercialisation of research has also led to a proliferation of specialist teams within universities aiming to support academics to engage with public policy makers. We work for one such team, the Institute for Policy and Engagement at the University of Nottingham.

In a similar timeframe to the above, universities have increasingly been subject to critical discourses that can be broadly grouped under the heading of ‘decolonisation’: efforts to ‘resist the distinct but intertwined processes of colonization and racialization, to enact transformation and redress in reference to the historical and ongoing effects of these processes, and to create and keep alive modes of knowing, being, and relating that these processes seek to eradicate’ (Stein & Andreotti, 2016). Particular focus has been given to the curriculum (Charles, 2019), research methodologies (Ndlovu-Gatsheni, 2019) and the make-up of the academy itself (Suhraiya, 2020), highlighting how ongoing structural inequalities play out within each of these specific contexts, as well as the colonial history of epistemology itself (Stein & Andreotti, 2016).

However, relatively little attention has been paid within discourses on decolonisation to the specific area of research impact – specifically, policy impact, and how colonial discourses and postcolonial power structures might play out when academics in the Global North, whose work often focuses on the Global South, come under pressure to influence policy makers in the countries where they carry out their research. On the face of it, this seems odd, given that by its very nature the pursuit of policy impact implies an intent to change or influence government decisions by academic experts on the basis of the latter’s expertise. In contexts where those experts represent an institution from a country that was historically the colonising power exerting direct governing control over the country now governed by the target policy audience – and where the academic’s

individual identity or ethnicity may further complicate how they are perceived and understood – the potential for the reproduction of colonial power structures should be clear. With increasing emphasis on impact, interrogating how such reproduction takes place within these contexts, as well as within research collaborations or in the classroom, is imperative.

This is also a challenging question for universities in terms of the support, guidance and training they provide to academics to better enable them to respond to the Impact agenda generally and REF in particular. In-house institutes like ours are building up extensive experience in supporting academics to engage with UK policy making, often based on the extensive professional policy experience of our staff, who are recruited partly on the basis of such experience. Policy making is complex and this guidance function is crucial for academics who do not generally have first-hand experience of it. It is, of course, impossible to replicate that level of experience-based guidance for all international policy contexts, which can leave academics working on international topics reliant on their own networks for support. Furthermore, influencing policy impact across political and cultural boundaries, and in the context of complicated colonial histories, is even more complex than it is in the UK. Yet there remains an expectation on academics working internationally to deliver results in terms of impact.

It is our view that impact is an increasingly important part of the research landscape as a whole, and therefore an increasingly important element in how we understand research culture. As the sector as a whole grapples with what it means to improve research cultures, especially in terms of equality and inclusion, specific focus needs to be dedicated to the specific relationships and challenges that surround impact, and policy impact in particular.

### **Decolonising Impact: The University of Nottingham initiative**

Clearly these questions raise very complex issues that require extensive work to unpack and challenge. At the Institute for Policy and Engagement, we see our role as being to facilitate conversations that can both shed light on the challenges inherent in undertaking policy impact work internationally, and begin to develop tools and resources that academics can draw on in order to think through the specific implications for their own work.

Our first step was to organise our Engaging with Policy in the Global South conference, which took place in April 2022. The goal here was to enable academics working in Global South contexts to consider these issues and learn from each other, but more importantly to give policy actors from Global South contexts the opportunity to speak directly to academics with

the purpose of reflecting on how academic-policy relationships in these contexts can be built on more equitable foundations and avoid reproducing colonial relationships. Our keynote speaker was David Moinina Sengeh, Sierra Leone's Minister of Education, and other speakers included representatives from the African Union, UNICEF, the UNDP (United Nations Development Programme), and NGO (Non-Governmental Organisation) practitioners with a Global South perspective.

This successful event led to the development of a relationship with the University of Connecticut, which has played a leading role in developing thinking around the decolonisation of Higher Education through its *ICare4Justice* initiative, a programme designed to advance graduate students, faculty, policy makers and community organisers interested in global issues related to racial equity, intersectionality, social justice, decoloniality and anti-colonialism. The programme is a partnership among the University of Connecticut in the US, ECHO Center for Diversity Policy in the Netherlands, and the University of Nottingham in the UK. Since 2022, the programme has hosted an annual global summit which brings together transnational critical scholar-practitioners from Africa, the Caribbean, Europe, US, and the Pacific Islands to analyse, assess and design important considerations for establishing a global strategy and framework for advancing equity for racially and ethnically minoritized communities in education research, praxis and policy. The third instalment of the summit will be held at the University of Nottingham in the summer of 2024.

### **Key Themes**

Several key themes emerged from our initial conference, all of which have great potential for further research and action by higher education institutions:

#### *Academic skills and awareness*

This theme focused on the importance of academics engaging with policy acquiring the necessary diplomatic skills and cultural and contextual awareness to do so in a way conducive to establishing trusted and equitable relationships with policy partners. Relationships with research and NGO partners in-country can support such development, but ensuring that all academics are equally able to develop their knowledge and skills in this way presents a challenge to higher education institutions.

#### *Funding and administration*

A common theme among delegates was the ways in which research funding and administration can create barriers to equitable partnerships, which in turn can create power imbalances that feed through to policy relationships. Funder requirements and administrative demands can lead to an unbalanced distribution of both risk and partnership in research

partnerships, and to research questions that are not framed in the most helpful way to local policy audiences. These questions closely link the question of decolonising impact to that of decolonising research partnerships themselves.

*The relationship between the sector's role in the Global South and the EDI agenda in the UK*

A complex set of relationships exist for academics from academics of colour who are based in the Global North but carry out research in the Global South, particularly when they seek to develop research partnerships and impact in their countries of origin or heritage. The identity of the individual academic inevitably plays a role in their relationships with both research partners and policy audiences, and their position is also complicated by being, through their professional role, effectively complicit in the very knowledge systems that require decolonisation (**Suhraiya, 2020**). However, delegates also felt that, for instance, there is space to explore how, for instance, African diaspora scholars in the UK can be supported to play a greater role in policy impact in Africa, and to access external sources of support and funding to pursue this agenda.

*The relationship between the global and the local*

Many delegates emphasised that even responsible engagement in specific places in the Global South do not take place in a vacuum; they have implications for and are embedded in the global context in which they take place. Academics can also be seen as having a responsibility to support locally generated insight to feed into global agendas and generate global knowledge, but they also need to recognise that the localisation of policies pursued at a global level may not always make for a good fit. The role of multilateral organisations is important here, and academics' relationships with them is an area that bears significant potential for further research.

*Lessons for researchers*

The main learning points targeted around researchers centre around their awareness of who they are in the context of the environment in which they are trying to influence. Understanding personal and/or institutional positionality while engaging with a different and diverse culture is the first step to equitable partnerships in the research to policy continuum. A breakdown of the emerging learning for researchers is as follows:

*The four As- attitude, awareness, aptitude and action*

A key question emerging from our conversations is of the ability for researchers to interrogate their personal agency and approach. **Attitude** speaks to openness and practice of deep listening, humility and respect, and engaging communities in their local methods. The 2022 ICARE4Justice

summit platformed experience sharing on affirming methodologies in research- the practice of approaching knowledge construction and sharing which is steeped in the lived experiences, traditions, language patterns and practices in Caribbean populations (**Nakhid & Farrugia, 2021**). The western approach to research- and policy- spaces is therefore demonstrably not universal. Researchers should approach engagement with local actors with the intellectual humility required to follow the lead of the former. Affirming methodologies as a concept applied to international policy engagement is one which could enable more equitable and representative evidence to policy partnerships.

Closely linked to the above is *Awareness* - the ability to 'read the room' and recognise the players in the environment, their roles, and any unspoken hierarchies. It is also a contextual understanding of not just the environment in which the researcher is engaging, but also the ability to forecast the impact of your engagement on that awareness.

*Aptitude* speaks to the investment a researcher has made into the skills and knowledge necessary to engage in policy in these diverse contexts, including a respectable command of the historical background underpinning the issues they mean to engage with.

*Action* is the perspective of 'what next'? Policy makers anywhere in the world are dealing with urgent and competing issues on any given day and prioritise engagement which lead directly to solutions. This has been seen to strongly apply to Global South countries. At the Engaging with Policy in the Global South conference, a representative from the African Union Commission, the secretariat of the apex decision making body in Africa, asserted that researchers seeking to engage the organisation with evidence are advised to always present an accompanying call to action.

### ***Knowledge exchange is a two-way street***

The traditional paradigm of UK researchers engaging with Global South policy has seen knowledge largely flowing unidirectionally, often from the UK and other countries in the Global North to the Global South. This undermines the rich insights and learning which can emerge from a knowledge flow in the other direction.

There is a question of whether researchers in the UK are ready to embrace this two-way knowledge street as a foundational element of their international research and policy engagement. There has to be a fundamental shift from seeing international policy engagement as knowledge exchange- not just a way to disseminate research results in foreign climes but recognising that it is a collaborative process where everybody involved is bringing something to the table and taking something away. UK researchers will have to actively seek the insights and

expertise of their Global South counterparts and acknowledge the value of those insights. Equitable knowledge exchange requires all parties to be knowledge partners.

There is a wealth of good practice from Global South countries which can be learnt in this way. Systems in these countries have grown to be resilient given their complex and often post-colonial histories, and these innovative adaptations under stress and shocks offer up invaluable lessons for academics worldwide. It is not uncommon that 'innovative' strategies in the UK or US to respond to current crises such as the COVID-19 pandemic have been in use in many Global South countries for decades as a means of operating under the daily constraints they face. It is only by valuing the engagement with Global South actors as an even partnership will UK researchers begin to deepen impact both ways.

*You need people to build bridges*

It is easy to forget that policy is about people- not only those who are impacted by it, but also those who make it, who surround it and who influence the makers. A researcher, and especially one from the Global North, seeking to influence policy in the Global South must make some investment in social capital, applying acute contextual sensitivity to those relationships. This is especially relevant as it is likely that formal institutions operate differently, and social capital is indispensable for successful engagement.

Local stakeholders, community and religious leaders could be just as important- and sometimes even more powerful- than the government. Being context-sensitive will allow a modification of approach, accordingly, ensuring that engagement is relevant and respectful of local customs.

In the Global South context, it would be of great benefit for researchers to look beyond government and academic networks and forge solid relationships with diverse stakeholders. Third sector actors have a breadth and depth of knowledge, context, networks and connections that are deeply established from community to international levels. These NGOs and INGOs (International Non-Governmental Organisations) are invaluable partners in engaging government actors, raising funding for research and development directly linked to local policy priorities, and contributing to contextual knowledge exchange.

Finally, researchers need to have a plan for communicating with their networks- how do you balance public communication with private diplomacy? What can be said and represented in public spaces, and what needs to be handled with more delicacy alongside relevant stakeholders, while ensuring that colonial and paternalistic practices are not being enforced? It is a fine line to walk as a knowledge partner, and a researcher

should arm themselves with a mental (and if necessary, visual) framework for communicating with different stakeholders to ensure that relationships remain equitable and respectful, therefore leaving room for successful and meaningful policy engagement.

### **Lessons for UK Universities**

#### *Systemic bottlenecks reinforce inequity*

Across research projects, operational challenges including bureaucracy and red tape, university-wide policy constraints and logistical issues are often faced in admin processes, most especially funding allocation and disbursement. Other areas of complexities include grant application processes, intellectual property considerations, regulatory and compliance processes, and acquisition of resources including equipment. These areas often involve protracted, complex and sometimes expensive processes which throw up hurdles in any research environment. In the realm of engaging policy in the Global South, these difficulties are further exacerbated by the misalignment between UK university policy and the sector in general, and the realities project and policy partners have to contend with.

There are unique conditions that UK universities' traditional operational processes have to adapt to in order to unblock systemic bottlenecks which throw up barriers to diversity in partnership, learning and knowledge exchange.

If UK universities mean to be significant players in global policy engagement, particularly in the Global South, then institutional policy should reflect that intention through a review of potentially harmful, inequitable operational policies which may sometimes be specifically targeted to certain countries or regions based on biased or outdated evaluations. There must be a concerted effort to rethink and remodel these operational and funding frameworks to respond to local contexts without compromising equitable and unhindered access to opportunities for researchers to pursue engagement in Global South regions.

#### *Develop some guiding tools*

Navigating the intricacies of policy engagement in the Global South, given what has been discussed on the emphasis of context and relationships, requires some tools which universities are well placed to provide. At the Engaging with Policy in the Global South conference, researchers at the University of Nottingham and policy actors in the Global South put forward some suggestions on what some of these tools might be:



- *A glossary of terms* could be a foundational resource for researchers who may be unfamiliar with the specific terminologies and concepts at a broad level. This would specify language which is used and acceptable to define and describe the more common actors and actions in the international policy engagement ecosystem. It would be quite difficult to have detailed terms for each country or region, not to mention accounting for differences within countries, but delegates at the conference expressed that a starting point in ensuring good communication among partners is 'speaking the same language', as a way of bridging cultural, disciplinary and sectoral divides.
- *A map of the global (multilateral) policy landscape* outlining who does what, and where it is done, along with potential entry points, was suggested by delegates. This map would help researchers in the UK visualise the complex and largely unknown-to-them web of policy actors, institutions and processes in the Global South, and they can therefore identify key stakeholders, understand their roles and influence, and come up with informed engagement strategies which have a chance of yielding policy impact.
- *A map of funding opportunities* specifically tailored to support research in Global South countries, to ease the process of facilitating engagement in a context where resources are harder to access.
- *A network of academic partners* within and among universities in the UK and in Global South countries to strengthen collaboration, knowledge and experience sharing.

It goes without saying that developing such tools would be a considerable undertaking, and it bears emphasising that currently it is not obvious who within the Higher Education system would lead or own such an initiative.

*Internal champions are needed to drive a culture of equity*

Knowledge exchange teams and policy institutes in universities have a unique opportunity to influence change in entrenched systems that perpetuate harmful cycles of historically colonial relationships between UK universities and some Global South communities. This change can be catalysed through an internal advocacy role to dismantle structures that hinder fair representation and opportunity in knowledge exchange.

There needs to be an honest introspection of the ecosystems in UK universities and the ability to act where there is cause for 'good troublemaking' in leadership and administration. As the knowledge brokers with a vantage view of the relationship between UK universities

and Global South research and policy actors, knowledge exchange and policy teams must step up in this advocacy role to merge the university's lived research culture to its aspirations.

Additionally, the wider human capital at UK universities remains an invaluable asset. Engaging and leveraging international staff expertise and experience in their home countries provides an incomparable indigenous perspective, which is often marginalised or overlooked completely in general academic or policymaking discourse. These members of staff can serve on advisory groups which can guide universities towards more inclusive and globally aware research and policy engagement.

### **Lessons for the Higher Education sector**

#### *It's time to review funding*

Existing funding structures in the context of research engagement in Global South countries run the risk of perpetuating historical power structures reminiscent of a colonial past. A critical review of these structures is not only ethical, but it is imperative for equitable and mutually beneficial partnerships. All actors in the sector should scrutinise current funding criteria and mechanisms to dismantle elements which may unintentionally hinder positive relationships to form and thrive. Who sets the priorities, and are they co-created with the people who are the focus? How are the funds allocated, and could these channels be exclusionary to specific groups of people based on geographical location or availability of certain documents like a passport? Who is deemed eligible and by what/whose barometer is eligibility measured? What kinds of projects are typically accepted and on what basis? These are some critical questions that the sector must ask as part of a wider review of these mechanisms, as we plan to adapt our systems to support more balanced knowledge exchange.

#### *Co-creation is the way forward*

This is a call for a methodological and ethical realignment to integrate the expertise and agency of the Global South in their own engagement. Beginning from the very definition of 'impact' which varies between institutions and partners, this includes the facilitation of frameworks which enable international partners, particularly those from the countries of engagement, to have an equal voice and authority in shaping and detailing research agendas and methodologies. The sector should create an ecosystem which emphasises co-creating research questions which respond to the nuanced priorities, co-developing contextually appropriate methodologies which resonate with lived experiences of target populations and co-implementing policy engagement strategies. To incentivise this, there may have to be a redefinition of what success looks

like in international research projects. Funding bodies, universities and research councils could reward projects and engagements which demonstrate real partnership with shared leadership among all collaborators.

*Stronger relationships with multilaterals*

Multilateral institutions are organisations such as those in the United Nations system, the World Bank, or the World Trade Organisation, as well as regional bodies such as the African Union, that are formed by multiple nation states to cooperate on issues of common interest. They often work at the intersection of government and non-governmental stakeholders and play a very prominent role in the Global South policy landscape, as they have the ability to engage with multiple national governments. With their convening power and reach, they provide the UK HE sector a platform for deepened collaboration with Global South research and policy partners. If the sector is more deliberate and strategic in its engagement with multilaterals, there could be resultant frameworks which ease the way for sensitive and equitable activities at institutional and individual levels. The sector could also leverage the convening power of multilaterals to reach and engage a wide range of perspectives for heightened inclusivity and alignment with global agendas and initiatives, ensuring relevancy in current affairs. Institutions will need to go beyond on-paper agreements, and actively seek roles in committees, consortia, groups, councils, and bodies run by multilaterals to have a seat at the table. This is also an avenue to influence the policies and practices of multilaterals, some of which are policymaking bodies on their own.

The sector will need to examine and optimise the internal incentives and policies which currently guide international engagement, in order to strengthen relationships with multilaterals.

*Further work*

Our work on the decolonisation of impact has only begun to scratch the surface of the issues raised above. We believe that, if the Higher Education sector in the UK is to continue to incentivise policy impact in post-colonial and other international contexts, then it is imperative that universities continue to interrogate how they approach these relationships and how they support academics to acknowledge and challenge the ways in which postcolonial relationships can be disempowering for both policy audiences and research partners in the Global South. We would be delighted to speak to others within the sector who share the same view and who similarly aspire to equitable and empowering research impact.

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# Breaking Barriers: Promoting inclusive research culture among PGR engineering students

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## Abstract

*The academic community increasingly advocates for a more inclusive research culture, prompting universities to actively foster diversity, equity, and accessibility. This inclusivity is crucial for meaningful participation and recognising diverse perspectives in academia. In response, we organised an interactive seminar and developed a board game for engineering postgraduate research (PGR) students to grasp the concept of inclusive research culture. The seminar facilitated open discussions, allowing students to share experiences and comprehend the significance of a supportive environment. Emphasising inclusivity's role in generating innovative outcomes, the seminar showcased its potential through interdisciplinary collaborations. Based on and modified from 'Snakes and Ladders,' the accompanying board game enhanced understanding by providing an immersive experience that encouraged teamwork and creative problem-solving. This approach effectively promotes an inclusive research culture among engineering PGR students, imparting insights into the importance of a diverse and supportive research environment. By embracing inclusivity, universities unlock the research community's full potential, inspiring future generations to contribute significantly to diverse research endeavours.*

**Keywords:** inclusive research culture; postgraduate research students; engineering education; inclusive seminar

## **Literature Review**

### *Definition of inclusive research culture in academia*

An inclusive research culture is a research approach that recognises and values diversity, equity, and inclusion in all aspects of the research process. The concept has recently gained increasing attention in higher education as researchers and institutions have sought to promote more equitable and inclusive research development and recognise and value individual perspectives, experiences, and knowledge differences in the research process (Pless & Maak, 2004; Shore et al., 2010). Similarly, an inclusive research culture could be an effort to address power imbalances in the research process and to empower marginalised communities to participate in research on their terms (Passmore et al., 2022). An inclusive culture can involve critically reflecting on one's perspectives and experiences and being open to feedback and alternative viewpoints (Hattery et al., 2022), and making the research process transparent includes methodologies, data, and findings and sharing information openly with stakeholders (Mahony, 2022; Rawlins, 2008; Wallach et al., 2018). By developing an inclusive research culture, researchers can build trust and credibility with research participants and the broader community while ensuring their research is reproducible and accessible to others.

By understanding the different definitions and concepts of inclusive research culture, we can see no single approach to achieving Equity, Diversity, and Inclusion (EDI) in scientific research and education. By embracing an inclusive research culture, research members and academic communities can help to ensure that scientific research and education are conducted in a way that is respectful, transparent, and relevant to diverse cohorts. In addition, research students and early career researchers can establish themselves as leaders in the field and build a reputation for mutual collaboration, funding opportunities, and professional development.

### *Impact of Inclusive Research Culture in Academia*

Developing inclusive research cultures in higher education has become increasingly influential within research and education communities. O'Donnell (2016) provides an in-depth examination of the impact of organisational policies on building an inclusive environment and the individual and organisational factors that facilitate or hinder the transition toward inclusion in higher education learning and teaching from a critical realist perspective. Contemporary research culture emphasises the societal value of research, as highlighted by Gooch et al. (2016), who examine the impact of interdisciplinary and cross-sector research, outlining opportunities and challenges to generate a more inclusive impact on various levels. Meanwhile, Brauer et al. (2019) evaluate the UK

government's assessment of research impact, critically commenting on implications for future research conduct and discussing the consequences of the Research Excellence Frameworks' (REF) research impact assessment in terms of fostering a transformative research culture. Moran et al. (2020) contribute key findings from interviews and e-surveys to investigate the factors influencing researchers' well-being and work-life balance. Furthermore, Jiang (2006) reveals that the higher education curriculum can serve as a potent yet under-utilised tool in creating a more inclusive experience and promoting intercultural communication for all students.

#### *Inclusive Research Culture for Postgraduate Research (PGR) Students*

In higher education, PGR students (PhD students) and all other students (including undergraduate and postgraduate taught) constitute vital elements at the foundational level of the research community, which reinforces the significance of establishing an inclusive and positive research environment to foster both academic and personal development for these students. An exploration into the impact of social capital on the scholarly capabilities of PhD graduates participating in a writing group reveals that a robust social factor played a pivotal role in facilitating accountability in their writing endeavours and enabled meaningful contributions to the broader research community (Tyndall et al., 2019). Another study discusses the development of the Inclusive Environments and Metrics in Biology Education and Research (iEMBER) initiative to comprehend how inclusive, supportive, and engaging environments can be crafted to enhance the success of all biology students and trainees (Ibid). Also, in the pursuit of creating welcoming and intellectually stimulating classrooms for a diverse student body, Cook-Sather and Des-Ogugua (2019) present recommendations to build the academic learning environment by shaping students' learning experiences, scholarly identity construction, and socialisation into the academic culture. Hemmati and Mahdie (2019) investigate the experiences of PhD students, examining their learning environments and the associated challenges, such as barriers to research participation and access and the variation of programmatic structures, research culture, and campus climate. Moreover, to address the need for diversifying research participation, Haeger et al. (2021) continue to present findings on these barriers, along with successful initiatives and strategies for creating more inclusive research environments. Martin et al. (2023) employ system mapping to examine the role of PhD training programs and policy interventions in shaping research culture.

In the evolving landscape of UK higher education, where institutions increasingly admit more students from diverse ethnic backgrounds, academics have a bigger responsibility to cultivate inclusive, welcoming,



and affirming learning environments. Thus, within this context, there is a notable emphasis on enhancing research integrity and quality and providing guidance and support for researchers. To address this imperative, Azevedo et al. (2022) discuss the need for a holistic approach to fostering inclusive educational environments and building research integrity: teaching, mentoring, and monitoring students through open scholarship, emphasising the interconnections between pedagogical practice and research integrity. Training on research integrity for doctoral students can promote the development of an inclusive research culture as it can be treated as a place to develop and clarify their responsibilities in research policy development and implementation at all levels (Sarauw et al., 2019). Also, embracing a positive research culture during doctoral study and research at the institution is beneficial for science and engineering PhD students' development (Chiang, 2003; Deem & Brehony, 2000).

## **Methodology**

This study aims to help PGR students deepen their understanding of building inclusive research environments and provide viable approaches through an interactive workshop. The workshop included slide presentations, questionnaires (close-end and open-ended questions) and an interactive board game to promote student participation and interaction. By engaging participants in various learning activities, this workshop aims to promote comprehensive knowledge and awareness of building an inclusive research culture among PGR students. Through data collection and analysis, it is expected to provide substantive recommendations for enhancing inclusiveness in broader engineering research environments.

The seminar emphasised the significance of cultivating a supportive and welcoming environment that values diverse perspectives, backgrounds, and experiences. It also highlighted how embracing inclusivity can lead to more robust and innovative research outcomes through interdisciplinary collaborations and increased productivity. Participants interacted during the seminar via effective group discussions. The seminar and questionnaire surveys have received ethical approval from the Department of Electronic and Electric Engineering Ethics Committee at the University of Sheffield.

### *Workshop structure*

#### *Stage 1: Slide presentation (3 rounds of 30 - 60 minutes)*

The workshop begins with the first presentation, which introduces the background, importance and relevant concepts of building an inclusive research environment. By explaining the theoretical framework, students' interest in inclusive research culture can be stimulated.

#### *Stage 2: Questionnaire (4 rounds of 15 minutes each)*

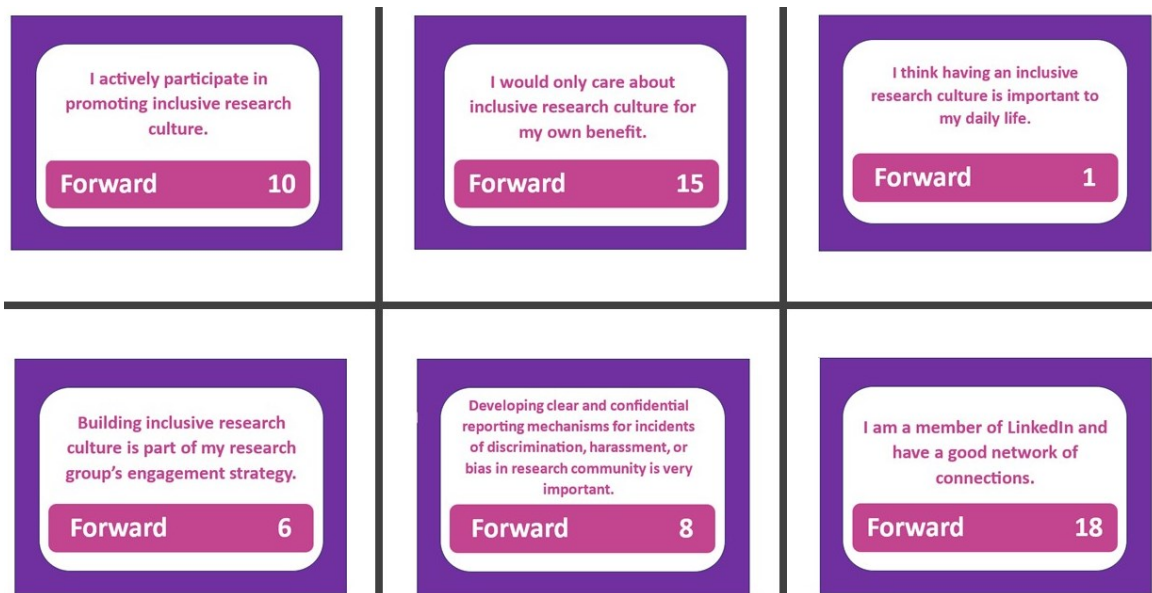
Each round of questionnaires (5 to 7 questions) aims to assess the level of awareness and perception changes in the student's understanding of the inclusive research environment. Each round was followed by a short group discussion to facilitate the exchange of ideas and interaction. The questionnaire covered topics including:

- Defining inclusive research culture
- Creating an inclusive research environment
- Addressing bias in research and promoting diversity
- Committing to an inclusive research culture

#### *Stage 3: Interactive Board Game (45 minutes)*

The interactive board game was designed and modified based on the open game framework created by the Open University Engaging Research activity 'Snakes and Ladders of Social Media'.<sup>1</sup> The card template is shown in **Figure 1**. The total number of cards is 33. The interactive game can deepen students' understanding of inclusive research culture through role-playing and situational simulation. The board game is designed to include multiple scenarios, individual and collective views and assumptions of inclusive research culture that require students to think and work in groups, envisioning and reflecting on how they would respond to these issues and situations in the real world. While playing the game, students deepen their understanding of learning about inclusive research cultures and gain opportunities for teamwork and interdisciplinary communication.

Figure 1: The template cards for the 'Snakes and Ladders of Creating Inclusive Research Culture in Engineering'.



#### *Stage 4 Group Discussion and Summary (10 minutes)*

After each round of questionnaires and games, students will be engaged in a group discussion to share their views and experiences. This will provide real-time feedback and a conclusion, which will help researchers better understand students' needs and confusions and help students improve their awareness of inclusive research culture. Additionally, in this stage, the research team can obtain students' feedback on the workshop as guidance for future improvement.

### **Findings and Discussion**

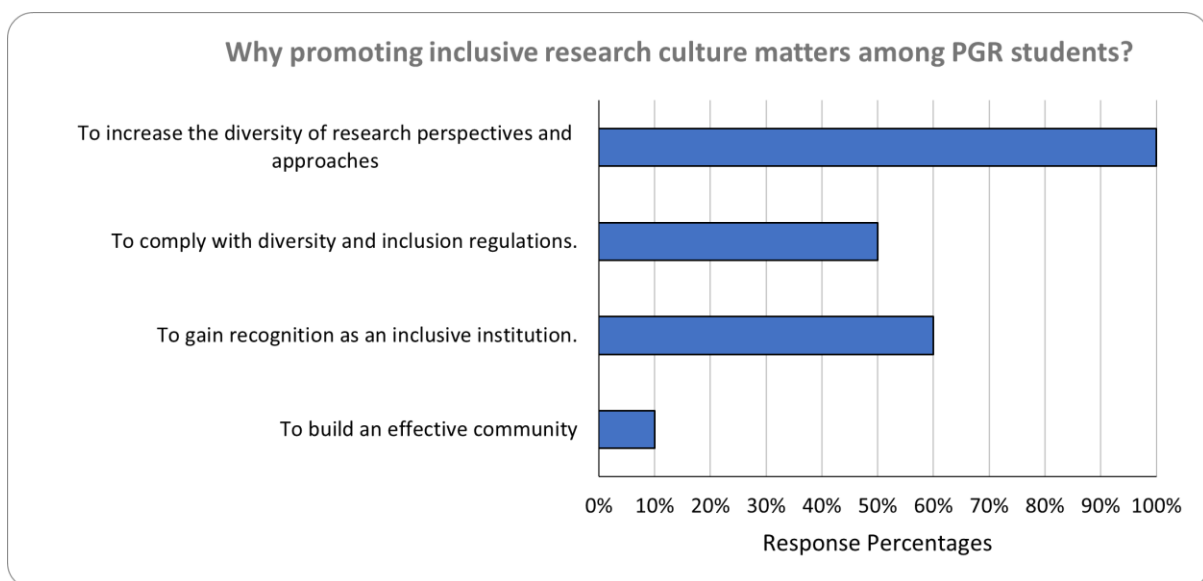
Through this inclusive research seminar, we hope to involve more students (not only limited to PGR students) in creating a better inclusive research culture within the Faculty of Engineering. We expect the seminar to serve as a platform for students to deepen their understanding of inclusive research culture and a place to share their opinions. Thus, in this paper, we reflect on the students' voices and further explore the direction for developing an inclusive research culture in the faculty.

#### *Aspect 1: Students' voices*

What is clear from the students' voices gained from the seminar questionnaires is that they have developed an initial understanding of the inclusive research culture created in their departments. Regarding the importance of promoting an inclusive research culture in engineering departments (as shown in **Figure 2**), there was consensus among the students, with 100% affirming that promoting an inclusive research culture can enhance the diversity of research perspectives and approaches, underscores a collective recognition of the significance of inclusivity in

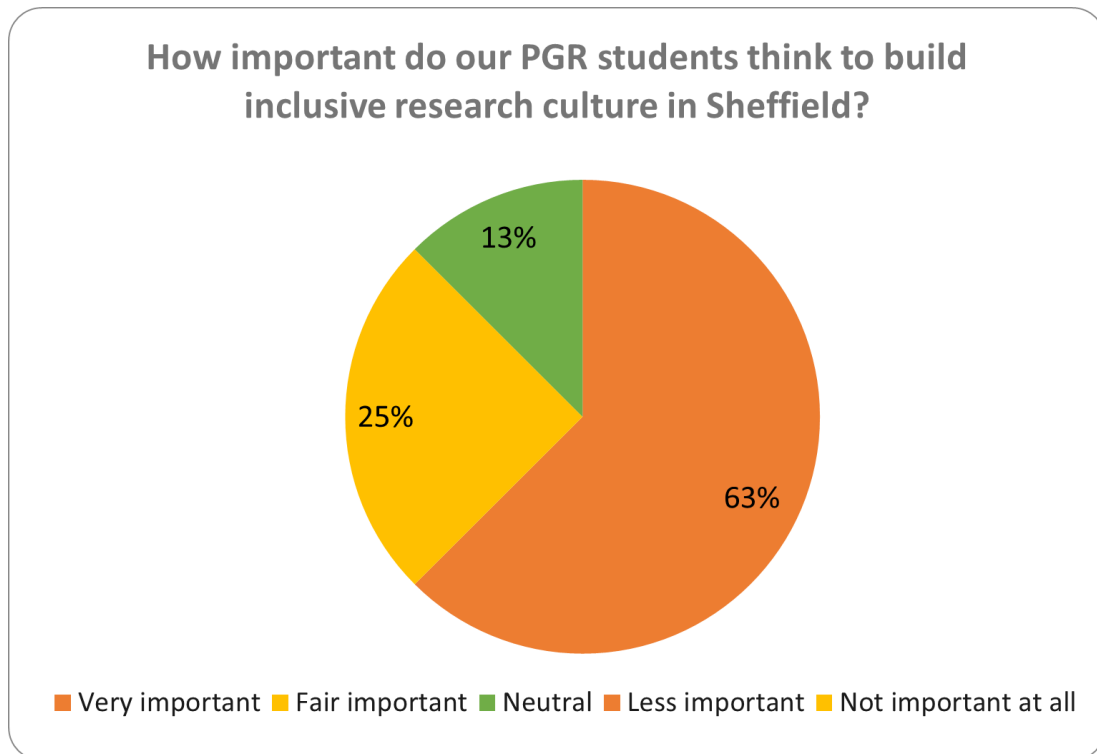
academic settings. This overwhelming agreement suggests a shared understanding among students that diverse perspectives contribute to a more robust and innovative research environment. Moreover, the survey results reveal additional dimensions to students' perspectives on inclusive research culture: 60% of students believe such a culture can lead to institutional recognition as an inclusive community and foster inclusivity within education and research. 50% of students associate the importance of an inclusive research culture with compliance with diversity and inclusion regulations. This finding indicates a nuanced understanding among students regarding the regulatory frameworks governing academic institutions and suggests a recognition of the need for alignment with broader diversity and inclusion goals. Furthermore, the data also reveals that only 10% of students emphasise the role of an inclusive research culture in building an effective community. This minority viewpoint offers an opportunity for further exploration, prompting questions about the perceived relationship between inclusivity and community building within academic research settings.

*Figure 2: PGR students' perceptions on the importance of promoting an inclusive research culture in engineering departments.*



In terms of building an inclusive research culture in Sheffield (as shown in **Figure 3**), the majority agreement of 88% (63% think building inclusive research is very important, and 25% agree it is fair important) on the importance of building an inclusive research culture for a university signifies a strong collective commitment among students toward creating an academic environment that embraces diversity and inclusion. This perspective positions inclusivity as a core value that should be prioritised in the overarching goals and strategies of the academic institution. However, 13% of the students remain neutral on this point of view.

Figure 3: PGR students' perceptions on the importance of building inclusive research culture in Sheffield.



*Aspect 2: What are we missing in creating an inclusive research culture?*

From the students' open-ended feedback, we not only learnt about their thoughts on an inclusive research culture but also had the opportunity to identify areas currently missing and neglected in developing the research culture at the departments and faculty.

A comprehensive analysis of survey responses underscores a pervasive sense of inadequacy in communication, training, funding, and accessibility of resources within the department, which may hinder the promotion of creating an inclusive research culture. The identified deficiencies include the absence of clear information on supporting facilities, funding, and related training. Learned from students' views, the lack of relevant information about inclusive research culture in supervision meetings, research support and networking opportunities may reflect their awareness of how to create and recognise the inclusive culture around them. Some students also mentioned that they received few words of encouragement in their studies and research, which may also lower their initiatives to create a positive research environment. Furthermore, the students felt that their colleagues and co-workers were unfamiliar with the concept of an inclusive research culture, which would prevent them from engaging in relevant discussions and collaborations. This also indicates that the broader understanding of inclusive research culture is not adequately communicated and integrated into the organisational composition of the research community. Thus, it becomes evident that a

comprehensive strategy is required to address the identified shortcomings such as enhancing communication channels, providing relevant training, securing funding avenues, and disseminating clear information on available resources are imperative. Additionally, the expansion of working spaces and collaboration opportunities within the institution should be explored to encourage cross-disciplinary engagement.

The survey responses show a landscape marked by communication gaps, training deficiencies, funding limitations, and a general lack of awareness within the department regarding inclusive research culture. These findings emphasise the need for strategic interventions to bridge these gaps, fostering an environment that supports individual researchers and promotes collaborative, inclusive practices across the academic community.

*Aspect 3: How can the departments improve?*

After understanding the students' perceptions of inclusive research culture through the seminar and questionnaire investigation, the results shed insights on further establishment of a better inclusive research culture in the departments and faculty. The survey responses helped the research team visualise the PGR students' understanding and expectations for developing an inclusive research culture within academic institutions. It is also worth noting that a recurring theme in students' responses emphasised providing clear information and interdisciplinary collaboration. As student researchers, they expected to have more cross-disciplinary working groups and opportunities to share and discuss their research with diverse audiences. Also, with the ongoing internationalisation of the research community at British universities, it was mentioned that multi-national projects and the establishment of a PhD hub for sharing research progress across different areas could benefit students to integrate into the research community. For instance, supporting international PGR students early on during their study and research to understand the inclusive research culture, cultural differences and challenges is also valued. This reflects an awareness of the unique needs of international PGR students to understand research culture and the potential cultural barriers they may encounter during their academic journey.

From the PGR students' view, the desired practices for cultivating a more vibrant and inclusive research community can be a multifaceted approach to fostering collaboration and a supportive academic environment. Increasing group work and meetings between academic staff and students can provide a more interactive academic setting for knowledge-sharing. Enhancing departmental advertisements on research culture can create greater visibility and awareness of the available resources and

opportunities within the academic community. This suggests an awareness that effective communication is vital in creating a positive research environment.

## **Conclusion**

In conclusion, the insights gathered from the study are evident that PGR students view an inclusive research culture as essential for their academic and personal development. The emphasis on collaboration, diversity, and support for individuals indicates a desire for a holistic and nurturing research environment. To enhance this culture, the faculty and departments could consider implementing measures such as creating interdisciplinary platforms, providing resources for international students, and fostering an ethos of inclusivity in team dynamics. By engaging everyone in the research community, particularly in disseminating essential information to new students and confirming a commitment to inclusivity between research groups, the information gaps and unfamiliarity can be minimised, promoting a sense of belonging and security among students. In addition to formal events organised by the faculty during working hours, the organisation of out-of-work events can extend the building of an inclusive culture in the broader community. These informal activities can serve as platforms for social interaction, bridging social gaps and creating opportunities for students and staff to connect on a personal level to form the cohesiveness of different research groups.

Additionally, the importance of departmental promotion of related activities on caring for students' well-being cannot be overstated because the development and embracement of an inclusive research culture involves not only supporting students in their academic journey but also maintaining their physical and mental well-being. The faculty and department's promoted activities can contribute to creating an environment where PGRs feel supported, both academically and emotionally, fostering a culture of inclusivity and mutual respect from everyone. As these events inevitably include students from different cultural backgrounds, recognising and addressing cultural differences, particularly between Eastern and Western perspectives, is integral to developing an inclusive research culture. Then, in organising these activities, the PGR supervisors and research groups can also play a vital role in facilitating the integration of different students. For example, a research group supervisor or a senior student can lead a new student to participate, playing as a role model and providing advice to help new students adjust to the new environment.

In essence, the key to building a better research community lies in a comprehensive approach that encompasses early introduction for PGR students, fostering social connections, providing effective supervision, promoting departmental activities, prioritising student well-being, and embracing cultural diversity. By embracing these practices, academic institutions can create a robust and inclusive research environment that nurtures all students' academic and personal growth, developing a community where diversity and inclusivity are acknowledged and celebrated. These aspirations gained from this study provide valuable insights for academic staff and institutions seeking to strengthen their research communities, highlighting the importance of formal and informal initiatives in creating a rich and supportive academic environment. This study has also indicated the direction for institutions to consider and adjust practical steps to build inclusive research cultures that meet the diverse needs and expectations of various PGR student cohorts.

### **Future Work**

Future efforts to enhance the inclusive research culture within academic institutions should focus on implementing concrete strategies derived from the identified needs and aspirations of postgraduate researcher students (PGRs). Recognising the significance of early introductions for new PGR students, institutions could develop orientation events that familiarise students with departmental resources and emphasise inclusivity and collaborative research values. Thus, building on the insights gained from the current studies, our future work will involve more active implementations of targeted strategies to address the specific needs identified by students through providing early introductions for new students and training series at all stages. Through these activities, we expect to enhance students' understanding of and embrace inclusive cultures while better caring for students' well-being and cultural diversity. We will also continue to conduct investigations to obtain student feedback to understand their changing perceptions of the inclusive research culture around them. This will pave the way for a more inclusive and collaborative research community in academic institutions, benefiting all postgraduate researchers' academic and personal growth.

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**Endnotes**

<sup>i</sup> For research details please see: [https://www.open.ac.uk/blogs/per/?page\\_id=6171](https://www.open.ac.uk/blogs/per/?page_id=6171).

# Supporting Early-Career Researchers: Value and recognition as a catalyst for success

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## Abstract

*This paper explores the pivotal role of recognition in the career progression of emerging researchers in Higher Education. In an ever-competitive academic landscape, early career researchers (ECRs) face numerous challenges, including availability of resources and the struggle to establish themselves. This reflection highlights how ECRs can benefit from support and recognition, both within their academic institutions and the broader scholarly community. It delves into the various forms of recognition, such as awards, grants, publication acknowledgements and promotional progression as well as support mechanisms such as mentorship, training and their impact on researchers' motivation, professional development, and contributions to their field. Additionally, the paper offers insights into practical strategies and policies that can be employed to better support and empower ECRs on their journey towards academic success. In supporting the ECR community, our future mid-career researchers will be well placed to face future challenges. Recognition, it argues, is not merely a form of validation but a powerful catalyst that fosters innovation, collaboration, and cultivation of a new generation of leaders in research.*

**Keywords:** early career researcher; research culture; career; recognition; value

## Introduction

In academia, early career researchers (ECRs) significantly influence research and innovation. ECRs, generally defined as those transitioning from a Ph.D. to an established, independent investigator, hold roles such as senior postdoctoral researchers, externally funded research fellows, or early-career lecturers. Recognising and rewarding their contributions is vital for fostering an environment conducive to their potential. While 70% of ECRs aspire to pursue an academic career, only 63% anticipate achieving this goal, highlighting a consistent over-optimism, illustrated in the CEDAR's 2023 Survey (**CEDAR, 2023**).

This article explores the strategies and proactive steps taken to foster the acknowledgment and prosperity of the Early Career Researcher (ECR) community within academia. In the UK, researcher careers and development in higher education receive support through the Researcher Development Concordat, also known as the Concordat to Support the Career Development of Researchers ('Concordat'), it plays a crucial role in fostering researcher growth. (**Concordat, 2023**). Utilising data from a systematic search review (**Appendix 1**), Analysis by the authors, based at the University of Swansea concentrated on identifying UK higher education institutions (HEIs) that demonstrated robust and reproducible ECR initiatives aligned with the categories outlined in Swansea University (SU)'s Concordat Good Practice Action Plan, including Awards & Promotions, Mentorship, Career Development, Grants, and Events (**Swansea University, 2023**).

## Career Development

Engaging in continuing professional development (CPD) allows ECRs to enhance their skills and work towards personal, professional, and career goals. UK universities and research institutions, like SU, offer various tailored programs for research and innovation staff, covering topics such as narrative CV writing, bid writing, publishing, open access, impact development, communication strategies, podcasting, online presence, and leadership training.

The Concordat sets out 3 key Principles of 'Environment and Culture, Employment', and 'Professional and Career Development', underpinned by clear obligations which are the shared responsibility of researchers, their managers, their employers, and funders. For example, under the principle of 'Professional and Career Development', institutions must 'Provide opportunities, structured support, encouragement and time for researchers to engage in a minimum of 10 days professional development pro rata per year, recognising that researchers will pursue careers across a wide range of employment sectors.' (**Concordat, 2023**).

The European Commission's HR Excellence in Research Award (HREiR) acknowledges institutions that ensure support for research careers and demonstrate a commitment to favorable working conditions and researcher development by implementing the Concordat, in alignment with UK research degree requirements (**QAA, 2023**). There are currently 714 Institutions (83 UK Institutions) that hold the award (**EURAXESS, 2024**). The platform Vitae stands as the forefront global supporter for the professional growth of researchers, offering extensive expertise in collaborating with institutions committed to achieving excellence, fostering innovation, and making a meaningful impact through research. Vitae's review of HREiR emphasised its role in advancing an institution's strategic goals, including enhancing research quality and impact, fostering excellence in staff recruitment, development, and retention, and preparing researchers for broader employability and economic contributions. The Award serves as a catalyst for positive culture change, elevates the status of researcher development, and supports fundraising efforts, despite low national awareness of its value in supporting research staff in continuous professional development (CPD) and overall career growth. For example, the Culture, Environment and Development of Academic Research Survey (CEDAR) National Aggregate Results 2023, to which there were 9,351 responses from 66 UK institutions, reported that large proportions of staff have not heard of key UK policy documents and initiatives, such as the Concordat and HREiR. Furthermore, CEDARS 2023 reported that engagement in professional development activities is low with only 16% of research staff spending the 10 or more days recommended in the Concordat. Worryingly, a quarter of research staff, and a similar proportion of other academic staff, report spending less than 1 day on professional development activities annually (**CEDAR, 2023**).

It's crucial to bridge the communication gap and raise awareness about the significant impact of CPD on ECRs career prospects. This includes highlighting the availability of staff training within and outside institutions, and the benefits of integrating a career development plan with research excellence, impact, and community expertise. Encouraging ECRs to take ownership of their professional growth is vital. Initiatives like the University of Liverpool's open-access course, focusing on the principles of the Concordat and associated responsibilities, play a key role in promoting staff engagement in CPD (**Liverpool University, 2024**). Vitae promote the Research Development Framework (RDF), which describes the knowledge, behaviour and attributes of successful researchers (across four domains), as well as an RDF planner tool for reflecting and mapping current skills and the development of a personal development plan to meet career goals (**Vitae, 2024**).

Queen's University, Belfast, has instituted a university policy granting all research staff including post-docs an entitlement of 10 CPD days. Staff document their utilisation of these days and engage in discussions about their development and CPD planning during their annual Personal Development Review (**Queens University Belfast, 2024**). At SU, CEDARS results mirror the national trend of low CPD engagement among research staff. To boost researcher involvement in career development, we plan to launch a campaign promoting awareness of the 10 CPD day entitlement, providing details on research development, and highlighting available training and resources. Additionally, all SU research and innovation training aligns with the four domains of Vitae's RDF: Domain A, Knowledge & Intellectual Abilities; Domain B, Personal Effectiveness; Domain C, Research Governance & Organisation; Domain D, Engagement, Influence & Impact. In 2024, a pilot mentorship scheme is set to launch at SU, specifically targeting research staff, with a focus on ECRs. The initiative aims to empower ECRs to concentrate on their career goals, build their research identity, and perform personal development plans and training needs analyses. The overall objective is to enhance awareness and confidence among staff regarding the Concordat, RDF, and CPD. The initiative also seeks to encourage staff engagement in developing their professional competencies and experiences to bolster their future careers.

### **Mentorship**

Mentoring and coaching offer both personal and professional advantages, fostering resilience, setting goals, and enhancing a researcher's confidence to undertake tasks such as writing papers, contributing to grant proposals, and presenting at conferences, among other benefits (**Vitae, 2024**). Mentoring is a learning conversation that supports good quality thinking and a positive outlook. Engaging in mentoring brings a powerful and refreshing opportunity to connect to colleagues, participate in discussions with the benefit of new perspectives, navigate the demands of a research role, and find the best way forward, whatever the career stage or future goal ambitions of the researcher.

At SU, we utilise mentoring as a tool for career development, fostering a continuous process where researchers take charge of their careers by seeking professional advice and working towards set goals. A key element of SU's approach is for mentees to establish career development objectives at the beginning of the mentoring program, creating and regularly updating a personal development plan during initial meetings with their mentors. The program includes clear guidance, an induction session, mentor training, online support, and supplementary documentation like a mentoring agreement, mentor and mentee profiling

forms, and EDI monitoring. Program evaluation involves a survey for participating staff.

We have been inspired by the award-winning Future Leaders Fellows (FLF) Development Network Leadership Mentoring programme, which was recognised in 2022 by the European Mentoring and Coaching Council (EMCC), winning a Global Coaching, Mentoring, Supervision, and Team Coaching Award for Mentoring (**Future Leaders Fellows Development Network: UKRI, 2024**). The FLF Development Network backs the UK Research and Innovation (UKRI) FLF scheme, facilitating exceptional support for the next generation of researchers and innovators. The FLF scheme's goal is to nurture world-class leaders in research and innovation, offering four years of funding to address ambitious challenges and foster career development in academia and business (**UKRI, 2024**).

Similarly, the University of Glasgow offers the Catalyst: career and leadership mentoring for research staff (**Guccione, 2023**). Catalyst is a six-month mentoring programme designed specifically for research staff whatever their role or job title, founded on the principles of collegiality and collaboration. Catalyst focuses on ensuring quality mentoring conversations, through training Catalyst mentor volunteers, academic staff, to deliver excellent mentoring. Glasgow advocates that mentoring conversations can help researchers to 'set and achieve small goals, rekindling a feeling of motivation and enthusiasm in (their) role' and to 'consider future career options and a 'best fit' for (them)'. Catalyst Mentoring is designed and led by Dr Kay Guccione, co-author of 'Coaching and Mentoring for Academic Development' (**Guccione & Hutchinson, 2021**).

The Universities of Bath, Cambridge, Kent, Oxford, Oxford Brookes, Sussex, and King's College London have partnered to provide online 'speed mentoring' sessions. These sessions focus on career and professional development, offering ECRs the chance for brief, focused conversations with four different academic mentors. Each session lasts 15 minutes, allowing ECRs to gain various perspectives on specific questions, professional issues, or goals they aim to achieve (**University of Sussex, 2024; University of Bath, 2024**).

Speed mentoring sessions provide ECRs with an accessible avenue to explore fresh perspectives on problems or challenges outside their usual work environment. This experience enhances confidence and fosters a support network beyond their immediate team, contributing to future resources. The overarching goal is to encourage ECRs to actively participate in mentoring, dedicating time and energy to personal development and planning.



## **Awards and Promotions**

In the dynamic and competitive landscape of academic research, the recognition of achievements through awards and promotions plays a pivotal role in shaping the trajectory of ECRs. Beyond mere recognition, these acknowledgments serve as a testament to the intellectual prowess, dedication, and contributions of young scholars to their respective fields. Awards and promotions not only bolster the morale and confidence of ECRs but also provide them with crucial visibility and credibility within the academic community.

CEDARS 2023 shed light on the prevailing sentiments among ECRs in UK universities regarding promotion and progression. The survey revealed a notable disparity in perceptions between junior researchers and their more established counterparts. Astonishingly, only 29% of ECRs believed that the promotion and progression processes at their institutions were fair, significantly lower than the 58% reported by lecturers, senior researchers, and professors. The survey further underscored a perceived lack of equitable opportunities for career progression, with only 33% of junior researchers expressing satisfaction compared to 50% among more senior staff. Additionally, the merit-based nature of promotions was questioned by 34% of ECRs, contrasting with the 49% affirmation from established staff, signalling a concerning divide in perceptions of fairness and opportunities within the academic hierarchy (**CEDAR, 2023**).

At SU, the Swansea University Research Staff Working Group overseeing the Concordat Action Plan, is committed to enhancing the career development of research staff. Recognising the pivotal role played by research staff in contributing to the University's world-leading research, the group actively monitors and evaluates the application of the Concordat. Updates on action plan projects, management of the HREiR Award renewal process, and consideration of Research Staff recommendations are integral to their responsibilities. The group engages in benchmarking exercises, comparing the University's performance with other institutions, and holds the authority to propose adjustments to the Concordat action plan (**Swansea University, 2024**).

In response to the concerns raised in the CEDARS survey (**CEDAR, 2023**), SU has implemented impactful measures. Postdoctoral research staff are eligible for promotion at SU. The researcher promotion process has been aligned with the Personal Development Review (PDR) cycle, ensuring synchronisation with academic timelines. To enhance clarity, a specialised University promotion workshop has been designed specifically for ECRs and mid-career researchers. The university's dedication to professional development is demonstrated through impressive participation rates in the Annual PDR. Moreover, substantial resources have been dedicated to

the 'Managers Hub,' offering extensive managerial support and valuable resources. These encompass manager toolkits, targeted courses for honing coaching and managerial skills, as well as assistance for professional development and well-being.

To further support ECRs, Kings College London, in collaboration with UKRI's FLF Development Networks Plus Fund and Vitae, have developed two toolkits aimed at empowering managers to effectively guide the professional growth of ECRs. These resources offer guidelines and strategies for career planning, skill development, and work-life balance, ultimately contributing to the overall well-being and satisfaction of researchers under their supervision (Vitae, 2022).

A significant aspect of an academic's career advancement stems from acknowledgment and the subsequent attention it generates. This is especially important in the career trajectory of an ECR. The Faculty of Mathematical and Physical Sciences at UCL have established the Faculty ECR Forum Awards, recognising outstanding research, teaching and community building by ECRs. Dr. Louisa Acciari, recipient of the Community Award, expressed her gratitude upon receiving the award, stating:

*I'm very grateful that the faculty recognises our work beyond our usual academic tasks. Social impact and community work is central to the Centre for Gender and Disaster and our GRRIPP project. The awards are individual, but this was really a teamwork, and it means a lot to us to be receiving it. Thank you!* (UCL Mathematical and Physical Sciences, 2024).

As previously mentioned, in addition to offering a moral and confidence boost, recognition serves as stepping stones that can propel individuals forward in their careers. SU annually runs an ECR Impact Award. ECRs are invited to produce a 3-minute video highlighting the impact of their research. This initiative not only lays the groundwork for recognition based on merit but also sparks subsequent discussions regarding the broader impact of their work. As a result, participants have received additional support and funding. As the scholarly journey unfolds, these recognitions open doors to new opportunities, collaborations, and increased impact on the broader scientific community. In essence, the significance of awards and promotions for ECRs extends far beyond personal gratification, influencing career advancement and fostering a culture of excellence and innovation in the pursuit of knowledge.

## Grants

The quest for research funding is an integral aspect of the academic journey for ECRs, marking a critical juncture in their professional development. The ability to secure grants not only provides essential financial support for their projects but also serves as a validation of their research ideas and the potential societal impact of their work. In the competitive landscape of academia, successful grant capture is indicative of a researcher's capability to articulate innovative hypotheses, design rigorous methodologies, and communicate the broader significance of their contributions. Beyond financial sustenance, grants bestow a sense of credibility and recognition, enabling ECRs to establish themselves as valuable contributors to their field and build towards becoming an independent researcher. Moreover, successful grant acquisition facilitates the creation of networks and collaborations, fostering an environment conducive to the advancement of knowledge and the translation of research findings into real-world applications. Thus, the importance of grant capture among ECRs extends far beyond financial considerations, shaping the trajectory and sustainability of their academic careers and contributing to the overall advancement of scientific inquiry.

It does not bode well, therefore, when 34% ECRs feel their contribution to funding applications goes unrecognised, a notable contrast to the 14% reported among established staff, according to CEDAR 2023 (**CEDAR, 2023**).

Several specific grants are targeted specifically at ECRs. The British Academy Postdoctoral Fellowship enhances research and teaching skills, aiming to boost the awardee's CV for securing a permanent academic position. The scheme emphasises completing significant research for publication and integrating fellowship recipients into the established scholarly community in their field (**The British Academy, 2024**).

The UK's participation in Horizon Europe (**UKRI, 2024**) has enabled ECRs to apply for the European Research Council (ERC) ECR Starting Grants (**European Research Council, 2024**). There have been studies into the benefit of being awarded a European Research Council grant and as Corrina Ghirelli et al. mention in their discussion article, securing an ERC grant has enduring positive effects on scientific productivity, impact, and the ability to attract additional EU funds (**Ghirelli, et al., 2023**). This holds true across various domains, including Chemistry, Universe and Earth Sciences, Institutions and Behaviours, Human Mind Studies, and Medicine. Furthermore, ERC grantees have achieved remarkable recognition, garnering prestigious international awards such as 14 Nobel Prizes, 6 Fields Medals, and 5 Wolf Prizes (**European Research Council, 2024**).

Additionally, their impactful research has resulted in the publication of 6,100 articles in leading journals (**Ghirelli, et al., 2023**).

The EPSRC New investigator Grants aim to assist ECRs and academics in establishing independence by gaining experience in managing and leading research projects and teams. These grants not only support the professional development of applicants but also contribute to the skill development of research staff employed on the grant (**UKRI, 2023**). The Leverhulme Trust and Wellcome Trust both offer awards and fellowships specifically tailored for ECRs, aiming to expedite and enhance their career development, propelling them within their respective fields (**Griffiths, 2023, Appendix B**).

The Declaration on Research Assessment (DORA) has also emphasised the significance of the 'Narrative CV.' These narrative CVs provide a promising avenue for recognising the diverse spectrum of a researcher's scholarly contributions. They function as a tool to shift towards a mindset that prioritizes 'quality over quantity' in career evaluation, addressing the potential overemphasis on journal-based indicators. Moreover, narrative CVs effectively accommodate non-linear research career paths. (**Amanda Akemi; DORA's Policy Intern, 2022**)

The availability of grants becomes significantly valuable when coupled with resources to equip ECRs for successful applications. SU's Research and Innovation team conducts seminars to aid ECRs in crafting and facilitating their grant applications.

SU's Computer Science Departments have established an ECR network 'CORE'. The organisation centers its efforts on arranging grant writing retreats annually. They plan month-long sessions from March to May, followed by a three-day retreat in June. Historical experience indicates the effectiveness of providing dedicated time for colleagues to advance their proposals during these events. Moreover, a dedicated grant writing help folder is maintained, serving as a valuable resource repository. CORE also actively supports new colleagues in CS, assisting them in acclimating to their research journey at Swansea and addressing any questions they may have (**Ahmad, 2024**).

The University of Glasgow, through its School of Health and Wellbeing (SHW) Athena SWAN ECR Career at The University of Glasgow, in collaboration with its School of Health and Wellbeing (SHW) Athena SWAN ECR Career Progression Sub-group, offers specialised training for Early Career Researchers (ECRs). Significantly, they have initiated a monthly ECR grant writing group dedicated to assisting ECRs in developing their own grant proposals (**University of Glasgow, 2024**). This initiative aligns with Athena SWAN's commitment to promoting gender equality and career

progression in higher education and research. Additionally, Appendix 2 provides insights into several grant schemes specifically tailored for ECRs.

### **ECR Events**

In the ever-evolving landscape of academia, the significance of specific, focused events for emerging researchers cannot be overstated. These targeted gatherings provide a unique platform for individuals in the nascent stages of their academic journeys to engage in meaningful interactions, exchange ideas, and build networks within their respective fields. Unlike broader conferences, these events are tailored to address the specific challenges, aspirations, and developmental needs of ECRs, offering a concentrated and immersive experience. By fostering a supportive environment for knowledge exchange and professional development, these events contribute significantly to the growth and success of budding academics. Furthermore, they serve as catalysts for mentorship opportunities, collaboration initiation, and the cultivation of a sense of community among ECRs, ultimately paving the way for their sustained success and impactful contributions to the academic realm.

The Crucible training program that runs from SU engages ECRs from all UK universities and disciplines, providing a unique platform to develop research skills within the digital economy. With opportunities for networking and collaboration, the program aims for societal impact and economic gain. From 2016 to 2019, over 100 ECRs from 35 UK universities participated. Former participants have made significant contributions across various domains, such as influencing policies at the parliamentary and wider government levels, engaging the public through BBC News, securing over £8 million in funding for their institutions since enrolment in the program, excelling in their professional journeys, and embracing an interdisciplinary and co-creation research approach involving users and industry collaborators. The recent online event attracted a global audience, including participants from Canada, Germany, and Mumbai. Conducted over three two-day sessions, topics covered included resilience, media advice, and responsible innovation. A 'Dragon's Den' style pitch on responsible innovation resulted in a winning idea, 'Suss your food' App, developed by a team of ECRs from various universities. The success of the virtual Crucible 2021 has sparked consideration for a hybrid event in the future, enhancing collaboration and inclusion beyond physical constraints. The positive feedback from participants underscores the transformative impact of the experience (**Swansea University: Crucible, 2024**).

UCL organises the annual Festival of Early Stage Researchers (FESR) with the goal of acknowledging and celebrating the substantial contributions of UCL's early-stage researcher community to research and innovation. This

festival serves as a dynamic forum, uniting researchers from diverse disciplines within the institution. It offers a valuable platform for presenting and celebrating accomplishments, exchanging experiences, and cultivating cross-disciplinary connections. Dr Ned Barker, Leverhulme Early Career Fellow, encapsulates the spirit of the festival, stating: 'Presenting our future research provocations to a diverse body of early career colleagues across UCL led to many insightful and memorable exchanges' (UCL, 2024). The FESR not only showcases the achievements of ECRs but also actively promotes collaborative dialogue and the exchange of innovative ideas.

The Science and Technology Facilities Council (STFC) Public Engagement ECR Forum serves as a dynamic platform, offering practical advice and support to early career professionals engaged in public outreach. This initiative not only provides valuable insights and guidance on current best practices through the extensive network of academics and public engagement professionals within the STFC community but also fosters peer learning and support among like-minded scientists and engineers. Beyond the immediate term, the forum contributes to the development of a lasting peer support network. It further facilitates access to guidance on practical requirements associated with planning new public engagement initiatives, enhances awareness of support mechanisms from STFC and other organisations, and delves into the realities of delivering and leading public engagement efforts. The forum aims to build an evidence base that informs and influences STFC and, by extension, UKRI's approaches to public engagement, ensuring an effective voice for early-career researchers in the broader scientific community (UKRI, 2023).

## **Conclusions**

Developing and maintaining a sustainable career in academic research is the aspiration of most ECRs, however securing a permanent position as an independent researcher is a highly competitive, ambitious, and challenging goal for most researchers. We have discussed several key areas such as personal development and mentorship, that impact the career success of ECRs, and the pivotal role of recognition in the career progression of emerging researchers in HEIs. A major challenge remains to increase engagement of ECRs in their personal development and the benefits for their careers from prioritising this. Mentorship is a valuable tool to provide ECRs with the opportunity to have meaningful, focussed conversations about their career goals and ambitions.

There are numerous examples of practical strategies and policies that can be employed to better support and empower ECRs on their journey towards academic success. For example, support and opportunities for grant capture, such as SU's CORE grant writing retreats, increase the grant

success of ECRs, and are fundamental to bestowing a sense of credibility and recognition to ECRs to establish themselves as valuable contributors to their field. Similarly, ECR awards, such as SU's ECR Impact Award, serve as a confidence boost, providing recognition that can propel individuals forward in their careers. In addition, ECR events are important for providing a sense of belonging within the ECR community, as well as offering opportunities to engage in meaningful interactions, exchange ideas, and build networks.

The research culture (RC) community is extremely forthright at sharing resources, best practice and enabling RC to flourish. Many resources are open access and numerous RC networks have evolved to support the embedding of a positive RC nationally. We would like to thank the FLF Development Network, The University of Glasgow's Research and Innovation services and Researcher Development team, Queens University Belfast ECR Postdoctoral development Centre, The University of Liverpool's Researcher Hub, for their generosity of support and culture of sharing resources and best practice which has helped encourage and assist our plan and approach for researcher development at SU.

Anticipating the future, it is essential to assess the influence of these initiatives on the career progression of ECRs. This can be achieved by establishing a national data capture system. The UK research community should prioritise the design, development, and implementation of such a system to enhance the understanding of its impact on ECR career development.

Research indicates a notable absence of articles examining the ECR community as a whole. To enhance our understanding of what the ECR community requires for success in academia, it is imperative to address this gap moving forward.

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Liz Kenny has a strong educational background, combining a BA in History with a PGCE in Primary Education. Her career path has led her to contribute to the academic excellence at Swansea University, specifically within the Faculty of Science and Engineering. Here, she focuses on ensuring the quality and impact of research outputs, playing a pivotal role in the strategic preparation for the upcoming REF submission. Her interdisciplinary experience highlights her commitment to both education and research development.



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## Appendix 1: Systematic Review Strategy

The Systematic Review yielded numerous results based on the search query. However, the majority of these were deemed irrelevant to the paper. This was attributed to inaccuracies in ECR acronym data and the exploration of discipline-specific elements of ECR, which fell outside the paper's scope. The most valuable data was obtained from Grey Literature, specifically from websites featuring ECR initiatives. Our selection of examples was guided by benchmarking against institutions comparable to Swansea in terms of size and income. This approach ensures that any initiative or example identified could be reproducible for the majority of higher education institutions.

Table 1: Systematic Review Searches

Source	Search Query	Limits	Results	Relevant
Web of Science	All Fields - (ECR OR "early career researcher*") AND (recognition OR "career development") AND (university* OR institution*) AND (UK OR Great Britain OR GB OR england OR wales OR scotland OR ireland)	Years: 2014 – present Language: English Countries/Regions: England, Scotland, Wales, Ireland	144	<b>Web of Science and Scopus : 15</b>  (search enquiry did not eradicate data from other "ECR" acronyms such as European Cardiology Community etc.,)
Scopus	( ecr OR "early career researcher*" ) AND ( recognition OR "career development" ) AND ( university* OR institution* ) AND ( uk OR great AND britain OR gb OR engla nd OR wales OR scotland OR ireland )	Years: 2014 – present Language: English Country/region: United Kingdom Number of results: 140	140	
Google Scholar Search	(ECR OR "early career researcher*") AND (recognition OR "career development") AND (university* OR institution*) AND (UK OR Great Britain OR GB OR england OR wales OR scotland OR ireland)	Year: 2014 – present	About 17,800	
Grey Literature Google Search	(ECR OR "early career researcher*") AND (recognition OR "career development") AND (university* OR institution*) AND	No Limits		Using benchmarks of institutional size and income.

	(UK OR Great Britain OR GB OR england OR wales OR scotland OR ireland)			
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Search Enquiry conducted by Ms Rebecca Kelleher.

## Appendix 2: Early Career Specific Funding Routes

Table 2: Early Career Specific Funding Routes

<b>British Academy Post Doctoral Fellowship</b>	No fixed Amount Duration: 3 years	<i>Eligibility:</i> within 3 years of postdoctoral award
<b>ERC Starting Grant</b>	1.5 million Euro Duration: Up to 5 Years	<i>Eligibility:</i> 2-7 years of Doctoral Award
<b>EPSRC New Investigator Award</b>	No Cap, Duration: No Cap	<i>Eligibility:</i> No previous experience of leading an academic research group or grant.
<b>EPSRC Postdoctoral Fellowship</b>	100% salary costs Other non-staff costs associated with the research. No staff costs covered. Duration: Up to 3 years	<i>Eligibility:</i> Applicants are expected to hold a PhD qualification or equivalent research experience.
<b>Leverhulme Trust Early Career Fellowship</b>	The Trust will contribute 50% of each Fellow's total salary costs up to a maximum of £25,000 per annum and the balance is to be paid by the host institution. Duration: 3 years	<i>Eligibility:</i> Applicants must not yet have held a full-time permanent academic post in a UK university.  Candidates must hold a doctorate.  Applicants must either hold a degree from a UK HEI or must hold an academic position in the UK for which the contract duration at the time of appointment was no less than 9 months.
<b>Welcome Trust Research Fellowship in Humanities and Social Sciences.</b>	Salary costs and Research Expenses. Duration: 3 years	<i>Eligibility:</i> Applicants should be awarded a PhD before they apply.
<b>British Academy/Leverhulme Small Research Grants<sup>i</sup></b>	Costs of expenses arising from a defined research project (salary payments, computer kit or teaching replacement costs are not funded)	<i>Eligibility:</i> Postdoctoral Scholars or equivalent.
<b>Leverhulme Trust – Research Project Grant<sup>ii</sup></b>	Up to £500,000 Duration: up to 5 years	<i>Eligibility:</i> Eligible applicants will already be employed by the eligible institution Applications can be submitted by those holding contract research posts provided that their appointment continues for a period at least equal to the span of the requested award

Sources: (Griffiths, 2023).

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**Endnotes**

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<sup>i</sup> See: <https://www.thebritishacademy.ac.uk/funding/ba-leverhulme-small-research-grants/>.

<sup>ii</sup> See: <https://www.leverhulme.ac.uk/research-project-grants>.

# Addressing Ethnic Health Inequities by Improving the Inclusiveness of Digital Health Research for South Asians

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Twitter/X: <sup>2</sup>[@NorinaGasteiger](https://twitter.com/NorinaGasteiger), <sup>3</sup>[@Yumnaoxf](https://twitter.com/Yumnaoxf), <sup>5</sup>[@carolin\\_sanders](https://twitter.com/carolin_sanders), <sup>6</sup>[@EmmaStanmore](https://twitter.com/EmmaStanmore)  
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## Abstract

*South Asians are one of the largest ethnic minority groups in the United Kingdom. They face the multi-faceted burden of higher prevalence of long-term health conditions, worse access to health services, and poorer health outcomes. With the increase in digitally enabled health services, it is important to ensure that digital health apps are helping to address existing ethnic health inequities instead of creating new or exacerbating existing ones. Therefore, we need to engage with South Asians (SAs) early on and widen their participation in digital health research. However, there are several barriers to doing this effectively. Based on their experience of engaging with South Asians for developing and evaluating four health apps, the authors recommend technology developers and health researchers to understand the cultural context of common health behaviours of South Asians, and then consider the accessibility features of digital health apps and inclusivity of research procedures. This will contribute to making digital health research more inclusive for South Asians, and ultimately to reducing ethnic health inequities.*

**Keywords:** inclusive research; ethnic health inequities; digital health research; digital health apps; South Asians; inequalities

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## **Introduction**

Health inequities have always existed, but the extent to which they emerged and were discussed during the COVID-19 pandemic, was exceptional. The World Health Organization (WHO) defines health inequities as *'avoidable differences in health status or the distribution of health resources between different population groups, arising from the social conditions in which people are born, grow, live, work and age'* (**World Health Organisation, 2018**), with these differences also often being considered unfair (**Williams et al., 2022**).

There are many ways in which health inequities can be introduced and exacerbated. Commonly, they are related to social determinants of health, such as age, gender, income, education, employment, and housing (**Dahlgren & Whitehead, 2021**), while these determinants themselves are often interrelated and impact different individuals and groups differently. That is why, the intersectional approach to health inequalities highlights cumulative and additive effects of different categories of disadvantage (**Graham et al., 2011**) on an individual or a sub-group within a particular disadvantaged group. For example, first-generation immigrant women to a country may face additional barriers because of their poor digital and health literacy than second-generation immigrant women. In addition, health inequities are associated with higher costs: one-fifth (i.e., £4.8 billion) of the total National Health Service (NHS) hospital budget is spent in England's most deprived communities (**Asaria et al., 2016**), and £29.8 billion is lost to the country's economy annually because of lost productivity in these communities (**All-Party Parliamentary Groups, 2022**).

## **Ethnic Health Inequities**

Ethnic health inequity is a particular type of health inequity. According to a report commissioned by the NHS Race and Health Observatory, people from ethnic minority groups continue to experience inequities in healthcare access and health outcomes, compared to their white counterparts (**Robertson et al., 2021**), and the most at-risk groups experience socioeconomic deprivation. Health inequities are significantly higher in Greater Manchester than the rest of the country, with life expectancy approximately two years less than the England average. Greater Manchester is an ethnically diverse region, where more than half of the ethnic minorities are South Asians (**Manchester City Council, 2021**), consisting mainly of Indian, Pakistani and Bangladeshi. South Asians are

most likely to live in deprived areas (**Ministry of Housing Communities and Local Government, 2020**), have shown more disparities in health outcomes than others (**Harries et al., 2019; Watkinson et al., 2021; Public Health England, 2018**) and are under-represented in clinical studies in Greater Manchester (**Abel et al., 2023**).

Moreover, the COVID-19 pandemic exacerbated ethnic health inequities for South Asians living in deprived areas, which was demonstrated through higher rates of mortality attributed to COVID-19, compared to those living in least deprived areas (**Kontopantelis et al., 2021**). Bangladeshi and Pakistani males also had the highest mortality rate due to COVID-19, which is 2.7 and 2.2 times higher than White/British males, respectively (**Office for National Statistics, 2022**).

Ethnic health inequities are a complex and multi-dimensional problem. Among South Asians, the problem is demonstrated through a higher prevalence of long-term conditions, increased likelihood of developing such conditions (e.g., cardiovascular, kidney, musculoskeletal, diabetes etc.), and reporting poorer self-reported health (**Raleigh 2023; Pati et al., 2015**). Despite this multi-faceted burden, resource allocation is not proportionate to the overall productivity loss and NHS hospital costs associated with managing these long-term conditions.

#### *Ethnicity and culture*

Ethnicity is a dynamic social construct that is commonly used to describe distinct populations and is reported in research, though with inconsistency and in a less systematic way. However, to understand and address ethnic health inequities at the individual level we should be focusing more on culture, which is a multi-faceted and subjective identity which people use to define themselves (**Weiss, 2003**). Culture has a strong influence on people's health-seeking and treatment adherence behaviours, which can subsequently result in poor treatment and health outcomes (**Thomson et al., 2021**). For example, pain terminologies, which are not culturally attuned, may result in wrong or non-use of digital pain self-reporting tools. This reporting issue may then translate into wrong interpretation of pain self-reports and decision making by healthcare professionals, hence poor pain treatment outcomes. Although we acknowledge the enormous complexities around culture (**Nazroo, 2008; Nazroo et al., 2019**) and its influence on health behaviours and access to healthcare services (**Dixon-Woods et al., 2006**), in the context of our work we are considering culture as intra- and inter-personal factors that shape ethnic groups' beliefs, attitudes, and behaviours. Referring to inequities related to people's ethnic and cultural background, we will use *ethnic health inequities* as a term to avoid any confusion.



## **Digital Health Inequities Among South Asians**

### *Digital health technologies*

The UK's National Health Service envisioned digitally enabled healthcare services to reduce existing health inequities (NHS, 2019). However, it is also recognised that digitisation of services may have negative impacts on certain groups (Wadhawan, 2023). Evidence also suggests that South Asians may find it challenging to use digital health technologies within the healthcare system (Aldosari et al., 2023; Hyman et al., 2022), and their adoption of digital health apps is also low. As a result, introducing digital health technologies (including health apps) in the healthcare system may exacerbate the existing ethnic health inequities.

### *Under-representation of South Asians in health research*

There is no simple solution to the problem of ethnic health inequities. However, widening participation through efforts and initiatives aimed at increasing the diversity and inclusion of individuals or groups in health research is the first basic step. This would enable researchers to understand the problem, find possible answers to it, as well as develop and test digital health interventions with South Asians (SAs) to address inequities. SAs are widely under-represented in many domains of health research such as cardiovascular (Khunti et al., 2017), hypertension (Lip et al., 2022), and musculoskeletal disorders (Njobvu et al., 1999). For managing long-term conditions, many digital health tools are being developed and tested, but participation of SAs in development and evaluation of these technologies has remained poor. Possible reasons for this might be misconceptions associated with some groups being 'hard-to-reach', hence creating barriers to engaging with these communities, and inviting their participation in research. It has been reported in the literature that researchers have negative attitudes that impact their decisions about which groups to recruit, such as that some ethnic minority groups may not be able to keep appointments or comply with the study protocol due to poor English language skills and inadequate transport (Lo & Garan, 2008; Redwood & Gill, 2013). The *publish-or-perish* culture within academia may further create barriers to engaging diverse participant samples, as research may be rushed to meet tight recruitment deadlines, meaning that researchers instead focus on populations who are perceived as 'easier' to recruit. In this regard, the NIHR's (National Institute for Health and Care Research) INCLUDE ethnicity framework is a useful guide for health researchers to plan clinical research carefully (TrewEEK et al., 2021).

This under-representation in health research and limited external validation have led to a misalignment between healthcare service delivery and the SA context of disease and health (MacNeill et al., 2013). Ethnic

health inequities may stem from non-inclusive research (**Osuafor et al., 2021**) and lack of the SA-specific evidence, thus healthcare commissioners in England have given little attention and showed limited confidence to address the issue of ethnic inequities (**Salway et al., 2016**).

*Recommendations for making digital health research more inclusive for South Asians*

To address ethnic health inequities with the use of digital health tools, it is important to widen participation from SAs in research, but this is challenging within the context of existing research procedures and practices. Our recommendations are for researchers, technology developers and public and patient involvement professionals to facilitate bringing about the change in existing research practices, however, we acknowledge that sustaining and institutionalising these changes would require understanding and addressing higher level structural barriers.

Acknowledging the diversity, we have been engaging with Pakistani communities living in Greater Manchester in a variety of research activities (i.e., public involvement group meetings, interviews, focus group discussions and individual interaction with community gatekeepers). The purpose of community engagement was to develop accessible and culturally acceptable digital health apps and to evaluate them in health and social care contexts. Our collaborative work with these communities has helped us learn about the barriers to ethnically inclusive health research and accessibility and acceptability of health apps, as well as ways to overcome them. These health apps are:

(a) *Manchester Digital Pain Manikin*, a digital pain self-reporting tool (**van der Veer et al., 2020**)

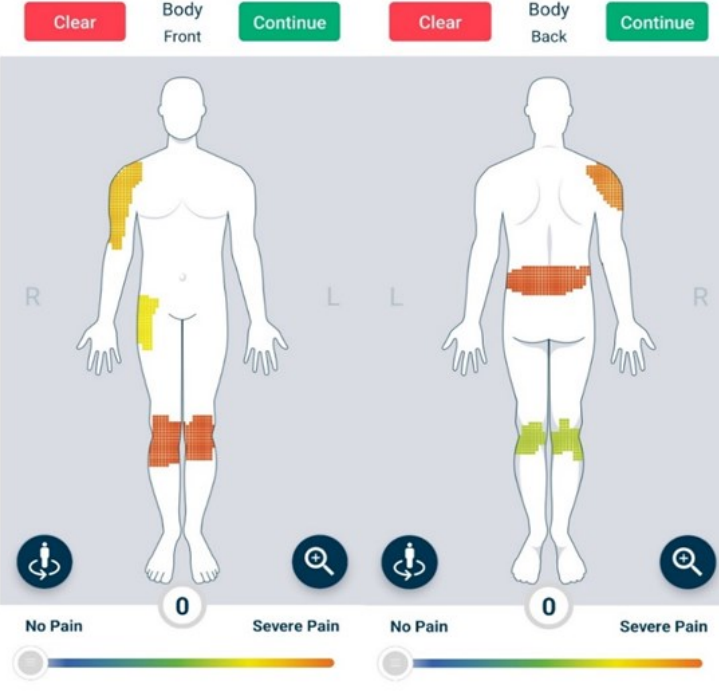
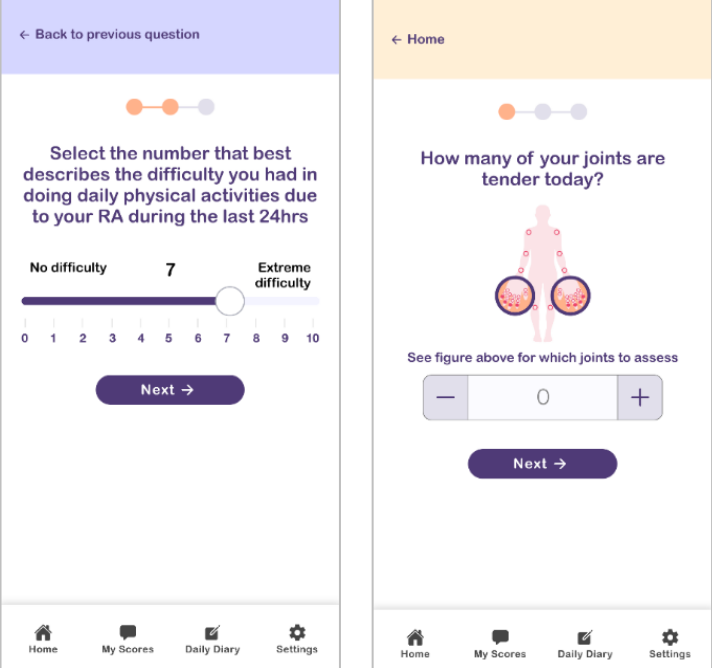
(b) *Remote Monitoring of Rheumatoid Arthritis (REMORA)*, a remote symptom monitoring tool for people with rheumatoid arthritis (**Austin et al., 2020**)

(c) *Keep on Keep up (KOKU)*, an NHS-approved app that helps older adults improve strength, balance and optimise healthy ageing (**Stanmore et al., 2021**)

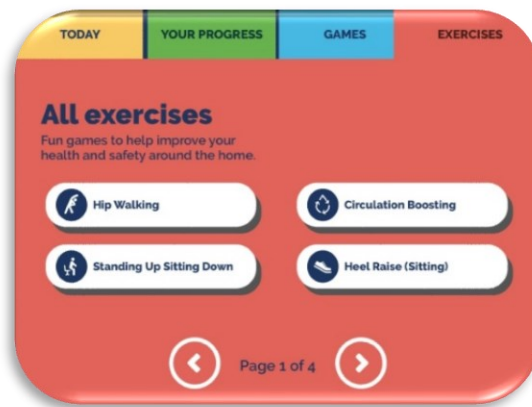
(d) *جين (Gene)*, an evidence-informed app co-designed with the Pakistani community to improve genetic literacy

See **Figure 1** for more details of each. The below recommendations are drawn from the experience of engaging with Pakistanis in patient and public involvement activities as well as research activities to design, develop and evaluate digital health apps mentioned above<sup>1</sup>. However, these recommendations may apply to other South Asian groups (e.g., Bangladeshi, Indian) and other types of health research.

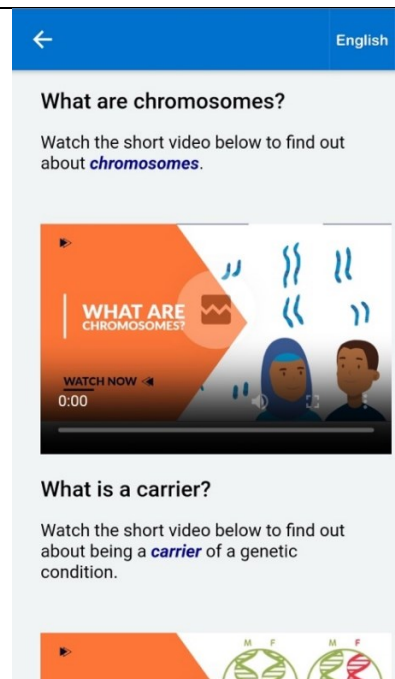
Figure 1: Brief overview of the health apps.  
 (Images © University of Manchester, included with permission)

App Name and Brief Description	Screenshots of health apps
<p><i>Manchester Digital Pain Manikin</i> is a smartphone-based app that enables users to self-report the location and intensity of their pain by drawing on a human-shaped figure with their finger. The pain self-reports drawn from the app can be used to facilitate pain self-management, patient-provider communication about pain and guiding clinical decision making.</p>	
<p>The <i>Remote Monitoring of Rheumatoid Arthritis (REMORA)</i> app enables people with rheumatoid arthritis to daily track their symptoms using their own smartphone. Their symptom data is shared with the rheumatology team, who access the data as a graphical summary within the patient's electronic health record. The summary provides a clearer picture of how a person's rheumatoid arthritis has been in between outpatient visits. By discussing the summary as part of the consultation, patients and health care professionals can make better, shared disease management decisions.</p>	

*Keep On Keep Up (KOKU)*<sup>ii</sup> is an NHS approved, tablet-base app. It is designed to prevent falls, frailty and functional decline. It provides a personalised strength and balance exercises based on evidence-based routines that reduce falls. KOKU also incorporates health literacy games to raise awareness of how to improve bone health, nutrition, hydration and enhance safety in home.



جين (Gene) is an educational app co-designed with and for the Pakistani community. The app features written information, videos and animations both in English and Urdu, covering topics related to genetic disorders, genetic counselling and consanguinity. The overall aim is to foster genetic literacy and empower the community to make informed decisions about conception, marriage, and support them in accessing genetics services.



*Understanding the relationship between culture and health behaviours*

When addressing ethnic health inequities, recognising the difference between ethnicity and culture becomes increasingly important. Though there are similarities across SAs, but specific sub-groups within SA (e.g., Hindu Indians vs Pakistani Muslims) might have distinct cultures (e.g., regarding gender, marriage, social hierarchy and religion), which need to be considered in order to enable successful engagement and research participation that may lead to positive change in health behaviours. Therefore, we need to understand the relationship between culture and health behaviour. We argue that the development and scalability of digital health apps can be synergised by drawing cultural similarities between different ethnic groups living in a country. To draw these similarities, we first need to acknowledge and understand these differences. For example, a Pakistani individual born and raised in the UK may have more cultural similarities with the indigenous population than their parents and grandparents, who were first-generation immigrant to this country.

The influence of culture on health behaviours is not clearly understood, which may lead to research approaches and intervention designs being guided by incorrect assumptions. In addition, marriage and families are culturally important (**Yeung et al., 2018**), which should be acknowledged. For example, for sensitive areas, such as genetic counselling, there is the challenge of engaging both men and women in designing a tool to improve genetic literacy, particularly with men because of their perception about women being solely responsible for genetic anomalies in fetuses or children. However, due to consanguineous marriage practices often recessively inherited genetic anomalies can arise, which are passed on through both the male and female lines (**Merten, 2019; Temaj et al., 2022**). Moreover, it was contested as to what extent religious leaders should be involved in familial decision-making related to consanguinity (close relative marriage) and its implications on genetic disorders, because some participants were supportive of religious leaders' involvement whilst others were more cautious. While consanguinity is not limited to SA populations, there are higher rates of consanguineous marriages within these groups. For example, the UK Born in Bradford study with a cohort of 12,453 women uncovered that rates of consanguinity were significantly higher in Pakistani women, compared to their white British counterparts (37.5% vs. 0.0% for first-cousin marriage) (**Bhopal et al., 2014**). Therefore, it is important to understand existing cultural norms around sensitive areas like genetic counselling and to address them with digital tools and resources, cautiously.

*Representativeness and inclusive health research*

We need to plan and conduct more inclusive (i.e., people feeling or being able to take part) and more representative (i.e., study sample represents target population) research. In research areas with many unanswered questions around causes of inequities, it may even be appropriate to aim for over-representation of SAs or to conduct studies with SAs only. In turn, this will facilitate researchers in bringing a focus on intersectionality across other characteristics beyond ethnicity. e.g., SA household women of older age from a low socio-economic background with a language barrier. Acknowledging intersectionality, inclusiveness in health research might have different considerations which is why targeting sub-groups (based on specific characteristics) could be a helpful start towards understanding and addressing ethnic health inequities (**Husain et al., 2022**). For example, in the REMORA programme we conducted interviews in Urdu to consider language and other barriers in accessing health services and health apps. This enabled a focus on Urdu speaking people from Pakistani communities in Greater Manchester in order to understand their specific needs and requirements. The intersectional approach will help us unpack the complexities in transitioning from a single disadvantage (e.g., language only) to multiple disadvantages (e.g., language as well as gender, age and employment status) which can be addressed through relevant adaptations in digital tools.

For general population health research, ensuring inclusiveness and diversity is still important for understanding and addressing ethnic health inequities. For example, in our Manchester Digital Pain Manikin research, we conducted a feasibility study with 104 people (**Ali et al., 2023**) and concentrated our efforts on recruiting people from Pakistani background because of Greater Manchester's demographics and pain prevalence statistics. We were able to recruit only six Pakistani participants (i.e., ~5% of the total population of Greater Manchester), which was representative of the total Greater Manchester population but lacked generalisability (i.e., because of statistically limited sample size). Regardless of the inability to draw meaningful conclusions, we benefited from the diverse sample by learning inclusive research practices and recruitment approaches, which would support future health research.

Recruiting SAs with a particular background is more challenging than just recruiting SAs without any consideration. For example, for addressing ethnic health inequities in pain management, researchers should conduct a comprehensive literature search to know which SA sub-groups are contributing more to pain inequities (e.g., SAs from low socio-economic backgrounds), and then try to recruit those people. As there might be some reporting biases in the published literature, researchers may

consider accessing primary data sources or databases to draw this information about the sub-groups with SAs. This way, research will be more inclusive, representative (sometimes over-representative) and likely to create a positive impact.

*Approaches to including South Asian communities*

Lack of awareness or interest in research studies, lack of information and negative perception about health research, and poor health literacy are the main drivers for the underrepresentation of SAs in health research (**Ali et al., 2023; Kripalani et al., 2021; Sheridan et al., 2020; Vida et al., 2015**). Therefore, as part of a recruitment strategy, researchers should consider raising awareness about how participation in research can be beneficial for the participants themselves and for their wider communities. This can be done by developing and disseminating educational videos and educating local community leaders. This would help the community understand what research means and what research participation entails. Researchers of the same ethnic background and engaging with communities and their local community leaders can also help to build trust between researchers and their future participants (**Ali et al., 2024**).

In addition to a lack of knowledge about research, a lack of trust in digital health technologies and research is also a barrier for Pakistani communities (**Aldosari et al., 2023; Wadhawan et al., 2023**). In terms of recruiting or engaging with Pakistani people, credibility of and relationship with a person are important considerations for approaching these communities and sharing information with them about any health research. For building trust in health research, we recommend leveraging the existing relationship between Pakistani communities and community-based organisations, including mosques (**King et al., 2017; Kokab et al., 2020**), ethnicity-specific charitable and health-related organisations. There are several community-based organisations in Greater Manchester, and we found approaching communities via these organisation or local community leaders an effective strategy for recruitment, involvement and engagement. It is important to note that building trust takes time, so collaborating with people who already work within the community can be extremely helpful.

In addition to building relationships with community-based organisations and community leaders, the role of a diverse research team, including a researcher from the same ethnic/cultural background, is extremely important in approaching and recruiting participants. We found that participants may be more willing to engage in research when researchers look like them and speak their language, as there is a mutual understanding of cultural norms.

As SAs, especially Pakistanis are considered a socially cohesive community, the *snowball sampling technique* can be adopted for approaching potentially eligible study participants, where already recruited study participants can explain research to their peers with potential eligibility and can refer that person to the research team (Valerio et al., 2016). Although giving gift vouchers or incentives is a recommended practice for compensating participants for their time spent on data collection, researchers should consider incentivising the person who is spending their time explaining research to others<sup>iii</sup> (Perez et al., 2013).

#### *Cultural and linguistic adaptations of health apps and study materials*

South Asians are a linguistically diverse community, so developing linguistically competent digital health apps and study materials and resources is challenging. For example, there are Pakistanis, who can only speak or read one language (i.e., English, Urdu, or Punjabi), and there are others who can speak multiple languages but can read only one. Those who can speak Urdu may not necessarily read Urdu, and the same is true for English or Punjabi speaking Pakistanis.

It is also important to recognise that because of poor literacy, particularly health literacy among many Pakistanis, a linguistic adaptation of key health-related terminologies might be challenging. For example, in the Manchester Digital Pain Manikin programme, users should be able to report their pain, of which pain quality (e.g., tingling, numbness) is an important aspect. Since many Pakistanis would not know what 'pain quality' refers to (not even in their native language), they would require additional information to understand and report it within the pain manikin app. Similarly for the Gene, the term DNA does not exist in Urdu, which we explained by describing a helix in animations. Therefore, when appropriate translations of certain terminologies are not available then other methods of cultural adaptations should be considered. In addition to language translations, cultural adaptations were undertaken to increase inclusivity for SAs. For example, in the KOKU app iterative feedback from SA communities informed the adaptation of skin tones for the animated exercise coach and other characters within the app. A range of skin tones were requested by SA study participants to reflect the diversity within the communities. Similarly in the animations for Gene, head scarf, facial features and analogies used in animations were adapted for animations to be more culturally appropriate.

There are many examples of cultural and linguistic adaptations of digital health apps, however, there are fewer examples of cultural and linguistic adaptations of study resources (e.g., study flyer, participant information sheet, consent form) to enable research participation. Language is an important determining factor for enabling research participation,



however, translated materials alone may not warrant their participation unless they have trust in research or digital health apps. In this regard, undertaking patient and public involvement activities are extremely important to inform research methods, materials, and recruitment strategies. Below are a few examples:

*Displaying research study posters* is a typical approach to promote recruitment in research. These contain basic information about a study, e.g., who we want to recruit, their eligibility criteria, contact details to express interest and (often) a brief sentence at the bottom saying, 'you will be compensated for your time'. Brief information about compensation is allowed, but anything more than that may be considered coercive by ethics committees (Millum & Garnett, 2019). However, in the Manchester Digital Pain Manikin programme, when we requested support from local businesses (mainly grocery stores in Manchester) for displaying study posters, all of them asked if study participants would be given any money. It might be because the information given was not sufficient or they did not understand what compensation means. In this regard, patient and public involvement activities might be useful in establishing what acceptable compensation would mean to these communities. As monetary incentives are important, researchers and information governance experts should revisit the existing ethical guidelines and principles on what is considered acceptable terminology around compensation (Saleh et al., 2020).

Similarly, the content of a *participant information sheet* and the method of its delivery (e.g., paper format vs video format) should be carefully considered. As a participant information sheet provides all relevant information about a research study and explains procedures that have potential to build participants' trust, researchers should see if it delivers what it intends to deliver. For example, people might have heard key terminologies like pseudoanonymisation, data protection, privacy and confidentiality, but in our experience, we have noticed that SAs often do not fully understand these terminologies. Therefore, researchers should consider translating the content with the use of culturally appropriate terminologies and deliver the content in alternate formats, such as audio, video, and animations.

## **Conclusion**

Widening participation from South Asians in health research may help to address existing ethnic health inequities. However, changing research practices is a prerequisite for ensuring more inclusive research and engaging with South Asians to enable their participation in (digital) health research. Also, the cornerstone of changing research culture should be around approaches to building South Asians' trust in digital health

technologies and research. Planning inclusive research requires deliberate efforts in approaching, recruiting and retaining people with relevant characteristics, which would have huge cost implications. Hence, to support this innovative funding mechanisms should be introduced. Evidence, generated through inclusive research will not only help us understand the underlying mechanisms of ethnic health inequities, and to develop culturally acceptable and accessible digitally enabled interventions, but also to evaluate their efficacy and effectiveness in addressing ethnic health inequities.

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**Endnotes**

<sup>i</sup> While a numerical expression of involvement and research activities may have been of valuable here, due to the duration over which these activities (over 5-7 years) took place these figures are not readily available.

<sup>ii</sup> Learn more about Koku here: <https://kokuhealth.com/>.

<sup>iii</sup> The authors have made use of this approach in their own projects and found it most useful. However, the authors are yet to publish this work.

# Developing Researchers' Writing Skills: A critical reflection of developing a series of academic writing workshops for postgraduates

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## Abstract

*Although belief in the 'sage on the stage' (the teacher as an expert standing at the front, delivering information) and tabula rasa (the student as a blank slate, ready to be written on) belongs to the distant past of outdated pedagogical theory, writing skills, especially grammar, are often treated as exceptions. This is especially the case when learners are also researchers; with pressure to produce high-quality work within tight deadlines, researchers are often expected to receive grammatical knowledge passively and replicate it promptly. This is what we sought to change. At the end of 2021, I created a series of academic writing workshops, which I have subsequently delivered to postgraduate students at Warwick University. This article provides a critical reflection of what I did, what challenges I faced, and what lessons I learned. It is hoped that this reflection will empower other academics and instructors to approach academic writing for postgraduates with confidence and integrity.*

**Keywords:** writing; grammar; postgraduate researchers; online learning

## Introduction

Teaching models that view the instructor as the ‘sage on the stage’ (the teacher as an expert standing at the front, delivering information) and the student as a passive receptacle of knowledge<sup>i</sup> have been outdated for decades, and excellent work has been done on promoting active learning online (see, for example, Darby & Lang, 2019). However, postgraduate researchers often do not benefit from these pedagogical developments when it comes to academic writing. Either there is the assumption that they require no additional writing training, or they are expected to learn through passive methods, such as through webinars and static resources (including books and websites). Although many of these resources are excellent, they do not enable postgraduates to engage intellectually with the improvement of their communication skills, leading to a lack of acumen and confidence. This problem is poised to worsen with the introduction of AI-assisted technology. In 2021, Warwick University’s Researcher Development Online department already offered a vast range of workshops, covering key skills and wellbeing activities. Postgraduate researchers requested that academic writing be added to the timetable. This created an opportunity and a challenge – an opportunity to provide practical support in an area in which many postgraduate researchers struggle, and the challenge of creating a series of workshops that meet non-uniform needs for postgraduate researchers across departments and levels.

## The Workshops

I developed the initial series of workshops in the winter break between 2021 and 2022, employing the Coaching Development Model used by the department, and I first delivered the workshops that spring. The initial offering included ten key workshops and five auxiliary ones (**Table 1**). Despite the overall success of the workshops, some changes were made in the subsequent semesters; we split some of the workshops, creating short ‘top tips’ sessions that focused on a particular grammar point or a writing skill, such as adding detail or using the passive voice. We also added workshops based on feedback from participants, including ones on writing academic articles, reviewing articles, and responding to feedback from journals. At the time of writing, in February 2024, over 20 workshops are available with different ones offered in each trimester (spring, summer and autumn). The workshops range from 60 minutes (top tips sessions) to 120 minutes (the introduction to academic writing workshop) with the majority landing in the middle at the 90-minute mark.

Table 1: Workshops that ran in the Springs of 2022 and 2024.

<b>Spring 2022 Main Workshops</b>	<b>Spring 2024 Main Workshops</b>
Academic Writing 101: Getting the basics correct	Academic Writing: What is it and how to prepare for it
Starting to Write: Making sure you're fully prepared	Writing Sentences: Starting strong
From Sentence to Thesis: Making every sentence work for you	Paragraphs: The building blocks of your thesis
Paragraphs: The building blocks of your thesis	Finding, Reading, and Quoting Research
Engaging with Scholarship 1: Putting your thesis into context	Representing Other Research Fairly, Organising Your Reading, Filling the Gap
Engaging with Scholarship 2: Becoming part of the research community	Long Documents: Practical tips for working with long documents, structuring your work, signposting
Bringing It All Together: Structure, signposting and working with long documents	Writing Introductions and Conclusions
Introductions and Conclusions: Beginning and ending well	How to Respond to Feedback
Hypothetically Speaking: Writing hypotheses and making projections	Writing Proposals and Abstracts
How to Respond to Feedback	Writing and Giving Conference Papers
	Advanced Writing: How to edit effectively
	Advanced Writing: Writing an article for publication
<b>Spring 2022 Auxiliary Workshops</b>	<b>Spring 2024 Top Tips Sessions</b>
Writing for the Public and Writing for Academics	Writing Hypotheses: The conditional, the future perfect, the subjunctive
Proposals and Abstracts	The Passive Voice: What is it and when should I use it?
Writing and Giving Conference Papers	Punctuation: An overview
Different Types of Academic Writing: Literature reviews	Academic Hedging: Advantages and pitfalls
Different Types of Academic Writing: Reports and surveys	Focus on Style: How to be more concise
	Focus on Style: How to be more detailed
	Focus on Style: How to sound more sophisticated
	Focus on Style: Differences between British & American writing

Participation is capped at 15 with the majority of workshops running with between 10 and 15 participants. All workshops run online through Microsoft Teams, and the most popular ones are offered twice per trimester. This reflection will explain the approach taken to the workshops, the feedback received, the challenges faced, and the lessons learned. It is hoped that this will enable further discussion of the provision of academic writing support for high-level postgraduate researchers, a demographic that is often overlooked.

It is an important facet of Researcher Development Online that every workshop or activity uses a facilitation-style approach. For the academic writing workshops, this meant that I combined active learning and participant-led strategies. Whereas undergraduate academic writing workshops tend to focus on either imparting knowledge to the students or correcting errors, it is important to recognise that postgraduate researchers have different needs. Every participant is not only an expert in their field but also an experienced academic. I start my introduction to academic writing workshop by asking everyone how much experience they have in academic writing; some respond by saying they have already had numerous books and articles published. Even the ones who say that they have no experience of academic writing have written dissertations and proposals. Additionally, many of the participants use tools with which I have no experience, including, for example, Zotero (for managing sources), and AI programs. Experience of writing in languages other than English is also a benefit that participants can bring to the workshops: being able to explain how essay structure is different, for example, can help illuminate what is expected in the UK academic system. Whereas in an undergraduate class I might take a more instructor-led approach, explaining a grammar point, giving the students some exercises to practice it, and then setting a more open task in which they can practice the point in context, I draw more from the participants in the postgraduate workshops. The result of this approach is that every workshop is different and fluid, building on the knowledge of the participants, and responding to the specific queries raised.

How does this work in practice? It starts with the introductions, with which I begin every workshop. As well as asking the participants to introduce themselves, I explain my own background, including my research history in literature, my academic publishing record, and my experience of teaching grammar and academic writing to undergraduates. I foreground that I do not have experience of everything and that although I supplement my knowledge with recommendations from peers in other disciplines; information taken from academic writing books, workshops and communities; and examples found in articles from across disciplines, I do not and cannot know everything that is relevant to writing in each participant's subject area. I also recognise that my own practice is not ideal in every circumstance and that what works for me does not work for everybody. By being open about my own limitations, I empower the participants to share their knowledge regardless of how experienced they are.

By allowing time for introductions, I establish that the workshops are learning environments in which everyone can and should participate, which then feeds into the activities within the workshops. For example, after the introductions, I start my Introduction to Academic Writing workshop with a short activity in which participants guess the type, purpose and expected audience of six writing samples ranging from a text message to an extract from a white paper. This leads us to general questions about academic writing: what is it, what is its purpose, and who reads it? These simple questions can lead to a wide-ranging and elucidating discussion that branches off into the expectations of different types of readers, how to adapt work for different journals, the expectations of examiners, and how to write in a cross-disciplinary setting. Every discussion is different, and every discussion builds from the knowledge and questions of the people in the room; usually, this works well, so my role is to be a facilitator, ensuring that each question is answered and every point is fully explained.

At other times, I set tasks. For example, when discussing how to summarise, I give the researchers a sample paragraph with three possible summaries and ask the participants to choose the most appropriate summary and justify their choice. From this, we discuss what makes a good summary and establish what we think good practice is. In this way, we reverse engineer the rules for summary-writing. Although there are some elements I want to 'teach' the participants, in five-minute blocks of instruction, the focus is on their contributions rather than my pre-prepared 'lessons'.

Feedback is elicited in different ways. After each workshop, a feedback form is sent electronically to each participant. Every couple of weeks, the anonymised feedback is collated and sent to me. This enables me to track what has worked and what has not worked in each of my sessions. Informal feedback is also elicited through comments made directly from participants. These can be spoken or written in the chat on Teams. Between June and October 2022, informal written feedback was collated by the department and provided to the individuals. From this feedback, I selected all the descriptive words to form a word cloud (**Figure 1**). Finally, I use my own responses to the sessions as feedback. When workshops descend into silence, when participants seem frustrated, or when there are questions I have not anticipated, I make appropriate changes.

The feedback has been overwhelmingly positive from the start, as the word cloud in **Figure 1** illustrates. However, there have been four key challenges. These challenges and my responses to them will form the next part of this reflection.

Figure 1: A word cloud based on feedback from participants in which the words 'interaction', 'perfect', 'helpful', and 'useful' are prominent.



## Challenges

The first significant challenge is one that I anticipated from the beginning, but which could not be solved until I had worked with the postgraduate researchers. This is the challenge of attempting to teach grammar through an active learning, facilitation approach. Although the majority of my workshops work well through eliciting information and experience from the participants, there are some grammar points which, if not known, cannot easily be worked out. If someone wants to know, for example, how to form the passive voice, it is possible to help them work it out through active learning methods, such as analysing a piece of writing in the passive voice, establishing how it is different from a 'regular' piece of writing, and then reverse engineering the rules. This, however, is a long process; what would take five minutes for an instructor to explain, turns into an hour-long activity. As postgraduate researchers have demands on their time, using the active approach is not ideal. Therefore, I initially decided to include these grammar points in longer workshops; the passive voice, for example, was included in the introductory workshop as it is one of the features of academic writing that may be unfamiliar to people experienced with other types of writing. This, however, did not work. The participants who wanted to learn about the grammar point found that there was not enough time dedicated to it. On the other hand, those who were already experienced in it found it odd and frustrating that they had to spend ten minutes on it during their workshop. As a result, I decided to split the

workshops, separating the more esoteric sides of writing from the grammar, forming one-hour top tips sessions for the latter. Each top tips workshop consists of introductions and getting-to-know-each-other activities, a short introduction to the language point, questions for the participants to work on, and time to put these points into practice. The top tips sessions, therefore, conform more to the expectations of a traditional grammar lesson than to the facilitation approach used in the other workshops. 8 topics are covered in these top tips sessions: talking about the future, which covers using the conditional and writing projections and hypotheses; using the passive; hedging; being more precise; being more detailed; punctuation; navigating British and American language; and writing in a more sophisticated way. By separating these language points from the main workshops, it is possible to keep the main workshops active and empowering to the participants while still allowing people to come and learn specific language points as required.

The second challenge was the varied needs of the different attendees. In an undergraduate academic writing classroom, most students are at similar levels. There is a curriculum stating what the students should already know and what they need to know by the end of the course. The instructor also has the same students every week, meaning that they can assess the levels of those students and create resources and activities accordingly. This is not the case in our workshops. The postgraduate researchers can come at any level of their studies. This can include people who are new to postgraduate studies as well as people who are finishing their final PhD thesis. It can include people who have already written books and articles or are accomplished writers outside of academia, as well as people who rarely write in English. Additionally, the postgraduate researchers come to the workshops with different needs, which include improving the mechanics of their writing, building confidence, finding motivation, managing the workload, improving in a specific area, or uplevelling their writing in general. Furthermore, postgraduate researchers attend these workshops from all disciplines meaning that it is difficult to find examples that are understandable for everyone. Compounding the difficulties caused by the participants' varying needs is the fact that the postgraduate researchers do not have to attend a whole series of workshops. I may only meet a postgraduate researcher once if they choose to only attend one workshop. As a result, I cannot plan with specific participants in mind as I would if I were running an undergraduate academic writing class. This means that there is a risk that what I have prepared is not suitable for the participants who are in the online room with me. This also means that I may have a group with very different needs and expectations.



This is a challenge that will never fully be resolved. As long as workshops are open to all postgraduate researchers, there will be participants who have different needs and expectations. However, there are some practices that help mitigate this challenge. The first is that I try to be as specific as possible in my descriptions of the workshops so that people come knowing what to expect. Splitting the workshops so that the more technical language elements are covered in separate shorter workshops, as previously mentioned, has also proved extremely useful. Those who need grammatical intercession can receive it in these sessions, allowing the main workshops to be more flexible. The top tips sessions also tend to be smaller, which encourages people to use the target language because they know that the other participants struggle with exactly the same issue, thus making it a safe and inclusive place for them to practise. Another important response to this challenge is getting to know the participants and their expectations as much as possible. This is achieved through the opening introductions. I can therefore respond to the participants' needs during the workshops, perhaps changing particular activities or signposting them to where they can get specific further information and support.

The third challenge was unexpected. Knowing that I would be working with some of the most talented postgraduate researchers in the UK, and wanting to employ an active learning approach, my original plans included the participants writing paragraphs and sharing them with each other for feedback. There was a lot of resistance to this, and at times participants would leave the workshop when I set a task. From this, I learned that the approach that I would have taken in in-person workshops (getting people to write) does not work in the online setting.

The first solution to this challenge was using short example paragraphs for the participants to discuss and analyse in breakout rooms. This involves less stress than writing because the participant is not being asked to produce their own work. Working in a group also means that there is less pressure on them to make an insightful comment. I use paragraphs from different sources: some are taken from books on academic writing; these are particularly useful when I want to use examples of bad writing without criticising a real person. I also use examples from academic articles, especially ones that focus on pedagogy in Higher Education as these have been written with academics from different disciplines in mind. To add some variety, and to ensure that all subjects are covered, I have asked my peers in different disciplines and workshop participants to share examples of well-written articles with me. I use extracts from these articles as examples. This has proved very effective as my workshops have remained varied and have given participants the opportunity to share their knowledge from their own disciplines. Separating the workshops into the

main workshops and the top tips sessions was another way to respond to this challenge. The top tips sessions attract a smaller number of postgraduate researchers, all of whom are struggling with the same specific issue. Because they know this, they are more comfortable practicing their writing and sharing their work with each other.

The fourth challenge was also unexpected. When I used examples of good and bad academic writing and asked the postgraduate researchers to analyse them, I was surprised by their responses. Often, the examples of bad academic writing were praised, and the examples of good academic writing were criticised. This challenge, although surprising at the time, has not caused a problem. Instead, I use the postgraduate researchers' responses as a springboard for further discussion: what is it that you found good or bad about this particular piece of writing? At times, we have discovered that the difference of opinion is due to the expectations of different disciplines. What is considered good writing in one discipline is not always good writing in another. This would not have been discovered if a facilitation approach had not been used in these workshops. At other times, when the postgraduate researchers liked a piece of writing that had been chosen for being bad, and they were asked to explain what was good about it, they found faults on closer inspection, thus creating the opportunity for analysis. On the other hand, when they disliked good writing, it was often part of the recognition that there is no such thing as perfection. This similarly has led to useful discussions about editing and about the minutiae of language.

### **Lessons Learned**

Participants have reported finding the courses useful. Nevertheless, as the challenges above have hopefully made clear, there have been some things that have not worked, and I have learned several lessons from creating and delivering these workshops. The first one is to not try to be too original or special. When I first created the workshops, I wanted to combine grammar with commentary on thesis writing. Every workshop that I offered combined a little bit of the grammar with a little bit of thesis writing. For example, my third workshop, which was on sentence structure, tried to use different sentence constructions as metaphors for different ways of constructing theses. This however did not work because the postgraduate researchers that wanted to focus on learning how to construct different types of sentences were less interested in metaphorical understandings of their thesis. On the other hand, people who were coming to the end of their PhDs and wanted to work on getting an overall picture of their thesis did not need to do the work on sentence construction. Splitting the workshops into general and mechanical areas was more conventional than I originally had in mind, yet it has proved to

be effective. Another lesson I learned is that it is essential to be flexible; some changes happen from trimester to trimester, and others happen in a workshop as it is happening – both are equally valid. At the beginning of this project, I would panic when the postgraduate researchers said in the introductions that they had very different expectations than I had for the session. However, I have learned to adjust my workshops accordingly, when necessary, or when one or two participants want to cover something different, to state that we are adhering to the workshop as described. Going forward, I intend to continue working with the postgraduate researchers at the University of Warwick, adapting my workshops to respond to their ever-changing needs.

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Dr Anna Fancett has taught English literature, language and academic skills in the UK, Saudi Arabia, Oman, Japan, and China since graduating from her PhD in 2015. Alongside her teaching practice, she has published articles and chapters on novels of the Romantic period and contemporary storytelling practice. Her 2020 article on Chinese translations of Walter Scott's novels, published in *The Wenshan Review*, won the Jack Prize for that year. She enjoys working with students at all levels and is currently working on a companion to Walter Scott for undergraduate students.



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## Endnotes

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<sup>i</sup> Dennis Fox studied how educators visualise the role of teachers and learners, concluding that effective teachers view learners as active, and ineffective educators view them as passive (**Fox, 1983**).

# Five Adjectives to Convey What Good Research Culture Looks Like: A tool for effective and efficient communication

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## Abstract

*Research culture has become a growing concern for higher education institutions (HEIs) and the broader UK research community in recent years, highlighting the need for a shared language to cultivate a communal understanding essential for collective approaches to complex challenges. With this in mind, at the University of Warwick, we have devised a concise formulation – the five-adjective summary - 'happy', 'productive', 'creative', 'sound', 'open' - to encapsulate our goals for a positive research culture. This summary can be delivered in one to two minutes to describe what good research looks like, and to introduce most topics covered by research culture. It can also act as a starting point for strategic and deeper discussion, by unpacking each adjective as required. This reflection discusses our streamlined definition of research culture based on the Royal Society's definition, our five-adjective summary of good research culture, the rationale behind its development and underlines the importance of adaptability to navigate changing perceptions of research culture.*

**Keywords:** communication; definition; research culture

## Introduction

Research culture has emerged as an issue of great interest to higher education institutions (HEIs) and the wider UK research community in recent years, necessitating concise and effective communication. Various funders and learned societies have published reports that describe issues in the life, careers and working conditions of researchers and concerns with how research is carried out (e.g., **Royal Society 2017, Wellcome Trust, 2020, Russell Group, 2021**). The stakes for UK universities were raised following initial decisions on the upcoming Research Excellence Framework in 2029 (REF 2029) (**Research England et al., 2023**) which explicitly indicated that research culture and the 'People, Culture and Environment' section could have a weighting of 25%, as compared to the 15% weighting of the 'Environment' section in REF2021.

There is considerable discussion among HEIs on how we define research culture. This is a topic that has been highlighted through the Research Culture Enablers Network, where a poll of 70 research enablers with a professional stake in research culture indicated that we need to consolidate existing definitions and identify what is missing from them (**RCEN, 2023**). One often cited definition is by the Royal Society:

*...the behaviours, values, expectations, attitudes and norms of our research communities. It influences researchers' career paths and determines the way that research is conducted and communicated (Royal Society, 2017: 3).*

This is cited also by the initial decisions for REF 2029. Building on the Royal Society's definition, the UKRI-commissioned report on research culture initiatives defines their 'research culture framework' as follows:

*The framework identifies the behaviours and values that underpin: How research is managed and undertaken, how research ensures value, how people are supported, how individuals engage with others (Shift Insight, UK Reproducibility Network, & Vitae, 2024: 5).*

A clear definition is important for evaluation schemes to compare institutions such as REF2029 or any possible future accreditations, such as Athena SWAN and Vitae's HR Excellence in Research Award. A clear definition is also important for communicating about research culture with various stakeholders, including those adjacent to research in HEIs. To engage their research communities in research culture change, universities need to make it clear to researchers and research enablers (e.g., research managers, technicians) what exactly they want to improve when they say they aim to improve research culture.

An important challenge for universities and other research organisation is therefore *how to communicate the concept of research culture and what good research culture looks like, in a simple way*. Because the concept of research culture is new and encompasses a broad range of complex issues, it is not always clear what it covers and what universities are aiming for. Currently, the concept of research culture is a specialist term, whose meaning is debated by those with specific responsibility for research culture. However, to change research culture, a broader spectrum of members of the research community, including those who currently have little interest in research culture, needs to share the idea of what good research culture looks like.

### **Five-Adjective Summary of Research Culture**

At Warwick, we devised a formulation optimised for concise and effective communication in 2021. We call it five-adjective summary of research culture. We streamlined the Royal Society's (2017) definition, as follows:

Research culture is *behavioural and organisational values and norms* that shape the research community and research practice.

To put it another way, research culture is 'soft infrastructure' for research. Research culture has two aspects: *research community* and *research practice*. We can characterise good research culture with five adjectives:

Our research community is *happy, productive* and *creative*.

Our research practice is *sound* and *open*.

Each adjective packs a broad range of issues. Depending on how much elaboration is needed for a given occasion, one could expand the adjective into more concrete list of issues.

1. *Happy* research community: researchers and research enablers feel fulfilled, can be themselves, have a sense of belonging, have a good work-life balance, and feel secure in their employment and have a clear career vision. They do not experience bullying, harassment and discrimination.
2. *Productive* research community: researchers and research enablers have effective and efficient management and support and have sufficient time and resources to develop and conduct research as a team effectively.
3. *Creative* research community: researchers and research enablers have an intellectually stimulating environment, have interdisciplinary and cross-functional contacts, and have time and opportunity to think outside of the box.

4. *Sound* research practice: research is conducted with a high level of research integrity and ethics and uses valid and reliable methodology.
5. *Open* research practice: researchers working alongside research enablers are transparent about how they conduct their research and share research materials, data, codes with the research community without barriers. Research is reported in open access outlets for maximum timely sharing with others. Research is open to non-researcher stakeholders to allow co-design, co-conduct and co-evaluation of research, which in turn ensures societal impact of research.

This way of summarising research culture is largely in line with findings by recent studies on what people think good research culture is (**Wellcome Trust, 2020**). However, some recent reports suggest dimensions outside of the five-adjective summary. For example, Vitae's Research Culture Framework (**Vitae, 2024**) states that people find it important to conduct research in a sustainable way. Though sustainability can be considered as a part of ethical research, it does not fit with the adjective 'sound' in a straightforward way. Research ethics usually concerns minimising harm to research participants and does not encompass harm to the environment. Clearly, the five-adjective summary needs to evolve with community's changing shared understanding of what research culture is and what good research culture looks like.

The shortest version of the summary can be delivered in one or two minutes. The summary can be expanded into any required length by unpacking the adjectives. The five-adjective summary also has advantage that the audience is likely to remember the key points.

## **Conclusion**

The five-adjective summary developed at the University of Warwick offers a useful tool for communicating the essence of research culture in a concise and accessible manner. However, it is essential to recognise that research culture is a dynamic and evolving concept, shaped by ongoing discussions and initiatives. As our understanding of research culture continues to change, so too must our methods of communication. By fostering a shared language and understanding, we can more effectively engage with members of our research communities to change research culture for the better.



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# Unleashing the Power of Postdocs: Improving the postdoctoral experience to enable improvements in research culture

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## Abstract

*Postdoctoral researchers are at the heart of university research. This highly motivated and talented group are ambitious and passionate about research and keen to develop an academic career. Very few achieve this call and far too many end up suffering with mental health issues, feeling used by a system where others benefit most from their efforts and that by not becoming an academic they have somehow failed.*

*For the academy to thrive and diversify this culture has to change, and evidence is clear that investing in the training, culture and opportunities for postdoctoral researchers will yield extraordinary rewards, not only for those researchers, but for their academic managers, departments and institutions. Training, inclusion and the opportunity to develop independence are all highly valued by postdoctoral researchers but there is also a need for research funders to look at how they can be major facilitators of change.*

**Keywords:** training; postdoctoral researchers; research culture; development

## The Power of Postdocs

Postdoctoral researchers (postdocs) are one of the most important and productive groups in universities. They are the major delivery mechanism of university-based research with metrics showing that they are the most frequent contributors as first author on peer reviewed articles (**Vogel, 1999, Robinson-Garcia 2020**). In addition to delivering research postdocs contribute significantly to the academic life of universities by taking on activities in order to increase their experience and employability, even when these activities are unpaid. With their increased availability and more junior status removing some of the barriers that may arise in interacting with a more senior academic, postdoctoral researchers often become a *de-facto* second supervisor, delivering much of the day to day training and support for the doctoral (PhD) students around them. When we also take into account how much teaching is delivered by those on postdoctoral contracts, be that those on teaching fellowships, sessional teaching contracts or teaching added to a research position as a career development opportunity, it is clear that postdocs are more than just highly skilled and capable researchers: they are very much at the heart of academic life. However, when it comes to career development and CVs (curriculum vitae/resumes) this contribution often goes unrecognised and undocumented as it often has no official status.

What is also clear is that most postdoctoral researchers are passionate about their research. In the most recent Nature Postdoctoral Survey (**Nordling, 2023**) the area that postdoctoral researchers were most satisfied with was their interest in their work with 75% of respondents highlighting this, the degree of independence they have and the opportunities to pursue interesting projects scoring very closely in second and third place. This was echoed in the Wellcome Trust report *What Researchers Think About the Culture They Work In* (**Wellcome Trust, 2020**) where 84% of researchers interviewed were proud to work in the research community and a survey of postdoctoral researchers in two Dutch universities which showed that 85% of them wanted to stay in academia (**van der Weijden et al., 2015**).

The literature reflects what most people who interact with postdoctoral researchers in universities will recognise: the highly motivated, highly skilled, passionate researcher who is excited by developing new scholarship and sees becoming an established academic as the preferred, if not only, career path for them. What this picture does not show is that being a postdoc can often be a very negative experience. The 2020 Nature Postdoctoral Survey showed that 49% of respondents wanted help for work related depression and anxiety and 51% had considered leaving science because of mental health concerns related to their work. When

gender and disability are taken into account these figures are even more stark with 55% of female postdocs and 66% of those with a reported disability having considered leaving research due to mental health related issues (Nordling, 2023).

Consequently, we have an ongoing culture of postdoctoral research where highly skilled and productive researchers who make significant contributions to university life become frustrated, disillusioned and prone to mental health concerns. This is something which clearly needs to change, to the benefit of not only postdocs but the wider academic community too. Supporting the next generation as they make the transition to an academic position will also be a vital tool for changing representation in the academy by making sure that the support provided targets and addresses the needs of those currently underrepresented in the academy.

### **The Postdoctoral Experience**

The levels of stress and mental health concerns reported by postdocs reflect the reality of the modern postdoctoral experience. Additionally, the role of postdoctoral researchers has changed significantly over time. Originally seen as a short-term post in preparation for a permanent academic position, the modern postdoctoral experience is characterised by a short-term precarious nature, becoming members of an arguable '*research precariat*' (Woolson, 2020). Postdocs will usually have multiple short-term contracts which often require moving to a new location and the associated upheaval of starting a new life every few years. Alongside this, the transition to a permanent academic position has also become increasingly difficult, as these positions become less secure and more at risk as university finances become more squeezed and programmes are cut. This precarity and lack of progression is the major concern highlighted by postdocs across many different surveys. In the Wellcome Trust's research culture report (2020) 45% of researchers who had left academia cited job security as a key issue in making their decision. Notably of those still currently working in research only 29% felt secure in continuing to pursue a research career. Additionally, van der Weijden and colleagues' findings (2015) at two Netherland universities that whilst 85% of postdocs may want to stay in academia, less than 3% go on to secure a tenure track position are both likely to be highly indicative of the postdoctoral experience at the majority of universities.

Postdoctoral research positions differ greatly by discipline and can be a very different experience in STEM (science, technology engineering and medicine) compared to the social sciences, arts and humanities. In STEM disciplines, the majority of postdocs will be working to deliver research for which the funding was secured by a senior academic (principal investigator

or PI), and, although many advertisements for such positions appear each week, competition for these positions is still fierce. In the arts and humanities such positions are rare, and postdoctoral research positions are typically the result of the postdoc securing their own position through an individual fellowship award. The postdoctoral experience in arts and humanities is typically characterised by trying to secure a succession of highly competitive and transient teaching positions which will allow the continued access to the libraries and other scholarly resources needed to continue a research career unpaid and in their own time.

Regardless of discipline, all postdocs face significant challenges in developing their own independent research ideas and the academic track record necessary to secure a funded fellowship or academic position. In the 2023 Nature Postdoctoral Survey, (Nordling, 2023) 97% of postdocs reported working at weekends and other personal time, with 52% of respondents contributing more than 6 hours a week above their contracted hours. For those in teaching positions the workload, preparation and marking also contributed to consuming significant amounts of additional time beyond contracted employment hours. It is worth remembering too how securing funding to develop their own research remains exceptionally difficult for postdocs. Look through the eligibility criteria of the major researcher funders in the UK and it is common to see eligibility for standard grant schemes restricted to those with a permanent academic contract. Where those without permanent contracts can apply, they will likely be competing against established academics with significantly stronger track records. Looking at research fellowships which are aimed at postdoctoral researchers, there much less funding available in these schemes. For example, of the £3.1bn awarded through the major state funder of research in the UK (UKRI) in 2022/23, only 9% of this (£256M) was awarded for fellowships across all career stages.<sup>1</sup> Alongside this relative lack of funding in fellowships, there is also a large population of postdocs looking to apply for them so it is not uncommon to see success rates of 5-10%. Securing funding is also very dependent on researchers having a sufficiently advanced record of publications and other academic outputs. This leaves postdocs often at the mercy of lengthy review processes and coupled with the long delays between acceptance and publication means their publications often do not appear publicly until several years after the completion of the research work. Under such conditions, evidencing the excellence of your research before the eligibility window of postdoctoral fellowship schemes closes can be extremely hard.

These systemic challenges may be more universal for postdocs, but there are also important issues that can define the postdoctoral experience which are rooted in the relationship with their line manager and host

department. One of the most common themes that has emerged in surveys of postdoctoral researchers is the variability in career development support, not only between different universities but also between different departments within the same institution. Postdocs often speak of feeling excluded from the academic life of the department and that their skills and talents are not valued beyond being a 'useful pair of hands' for the jobs academics need doing. Specific support for postdocs and their development is rare in academic departments and often when this does exist it is organised through groups set up by postdocs themselves. Without an academic lead for postdocs these groups struggle to flourish and generally sit outside the core activity of a department. Whilst they can be very successful, they are often dependent on the enthusiasm and commitment of one or two postdocs, and when their contracts end these groups can quickly disappear.

The relationship between a postdoc and their manager is perhaps the key factor in whether the postdoc experience is positive or not. For every positive and supportive supervisor, there is a postdoc with a very different story with bullying and controlling behaviour too commonly part of the narrative. Not all negative behaviours are so overt and extreme. Often a busy academic themselves, who will inevitably be under huge pressure, given the workload and expectations placed on them, who may unintentionally create pressure on the postdoc as a consequence of the demands of delivering their own successful research project within a funder's strict timeframe. The endless cycle of publishing to secure the next grant, to deliver the next project, to produce the next publication thus creates an environment where postdocs all too easily become a tool of delivery whose individual needs and ambitions are lost within the bigger picture of delivering a successful research project on time.

What is clear is that the disconnect between the talents and ambitions of postdocs and the reality of the modern postdoctoral experience is creating a calamitous situation. It is one where postdocs find themselves chasing contract after contract and are unable to settle down in one location. Additionally, this is a scenario within which they will likely also be working exceedingly long hours, diminishing their work-life balance, even as they deliver significant amounts of unpaid labour. All of which is in pursuit of a goal which may never even have been achievable in the first place. Is it then a surprise that this leads to anxiety, depression and a disillusionment with the research that had previously been a passion? What it also does is skew the selection for future academics towards 'more of the same'. Hence, those who don't have the extra challenges of caring responsibilities, gaps in publishing records for maternity leave, disabilities or indeed any other factor which contributes to underrepresentation in the academy, can focus exclusively on securing the outputs giving them a

significant academic career advantage. Given that the future of academia is represented by the current generation of postdocs, improving their experience and creating more diversity in the pipeline is an important mechanism in delivering future beneficial changes in research culture.

### **Changing the Research Culture to Better Support the Wellbeing and Careers of Postdoctoral Researchers**

Changing the way postdocs are treated will not only benefit university research culture and the long-term development of the academy. Beyond the duty of care towards postdocs as individuals and the need to prevent so many of them suffering mental health issues, burn-out and disillusionment, the academy and wider society will also benefit from improvements in the postdoc experience. Based on our many years of supporting postdoctoral researchers in the Institute of Advanced Study (IAS) and recent focus groups held with the wider postdoc community at Warwick and beyond, I would suggest the following points as important to consider in achieving such change.

#### *Skills and career development activity should be an integral and expected part of a postdoctoral role*

The completion of a PhD should not be seen as the end of training and development. The skills to thrive in a research career go beyond the specific knowledge and technical skills that are acquired during doctoral studies and continue to be developed through participating in postdoctoral research projects. What postdocs want, and benefit enormously from, are the skills and knowledge that open the 'black box' of career development; the skills and knowledge that some people 'just seem to know' or, more likely, have acquired through the mentoring of a supportive manager.

Training for postdocs needs to include the broadly applicable transferable skills that all jobs will need, such as writing effective CVs and cover letters, interview techniques and communicating with a range of audiences. But they also need to acquire those specific sectoral knowledge which will open the possibility of an academic career to all postdocs. Creating a broad understanding of what an academic role involves and developing the skills to support it - such as how to write a successful grant, how fellowships are important stepping stones to an academic career, innovative teaching practices, etc., - gives postdocs far more ownership of their career development. It also serves to allow them to plan ahead and build a track record from which they are more likely to land an academic position, rather than just completing sequential postdoc roles in the assumption that career progression simply requires racking up enough publications and sufficient time served.



Delivering postdoctoral training effectively can be challenging. Institutional level provision is an effective way of delivering the skills that all postdocs need but our experience at the IAS also shows that there is a need to blend this with more disciplinary specific knowledge at a departmental or faculty level. This more local provision has the benefit of allowing those already established in a field to share what has been important in their career success, but it also has the benefit of making postdocs feel more valued and included within a department. The sense of being valued and invested in by their institution and home departments is important for postdocs and when training provision is seen as an important part of the department's activities, engagement with it will also be higher. This further benefits postdocs through the creation of a community of peers who come together regularly. Such spaces, and the presence of a supportive peer group, can be important ways of tackling the feelings of isolation and anxiety that can lead to mental health issues developing.

However good the training provision is though, it still requires postdocs to see its value in order to turn up and engage with it. Hence, institutions need to find mechanisms to ensure postdocs who want to engage with training and development are protected from any overt or implied discouragement or sanction by mentors or managers. Institutional level inductions for all newly employed postdocs offer an opportunity for training opportunities to be signposted and to set the expectation amongst postdocs that they are expected, and have a right, to participate in training activities. Following this up with an annual audit of what training postdocs have actually participated in can also highlight areas of concern where departments may wish to intervene.

*Training isn't everything – community, inclusion and independence*

One message that came across very clearly in our conversations with postdocs is how much they value being part of a bigger postdoctoral community and being fully included in the academic life of their department. What this meant to them was to be supported by and encouraged to come together with other postdocs at regular, scheduled times to undertake a range of activities including training, research presentations and socialising. The opportunity to present their work to an interdisciplinary audience of their peers was seen as an important way to develop their own independent research ideas. It also provides a space in which to workshop and refine those new ideas before presenting them to more senior academics and potential convert them into fellowship proposals. Opportunities to present their work within their department and to visitors were also valued, as was the presence of an academic lead for postdocs. This helps to ensure continuity and that postdoc support is

not dependent on a regularly changing group of researchers on short term contracts.

Where postdocs often experience difficulties is in fitting the activities that will personally benefit them and their career into delivering the project their academic manager has secured funding for. Both sides of this relationship are under pressure and the perception that future employment and career prospects are dependent of the goodwill of the academic whose project they are employed on can push postdocs towards neglecting their personal development. What can mitigate this an open and honest conversation at the start of the project to set goals and expectations around both the research project and the training and development activities that are available to the postdoc and the expectation that they should engage with these. Formalising this into a written plan that is reviewed at regular intervals is highly valuable for both the postdoc and the manager and studies have shown that postdocs who undertake this process are significantly more productive, submitting 23% more publications to peer-reviewed journals, 30% more first author publications and 25% more grant and fellowship applications than those without a plan (**Davis, 2009**).

#### *Promoting, supporting and valuing non-academic careers*

The number of postdocs who successfully make the transition to an academic or tenure track position is shockingly low. A study of Dutch postdocs showed that less than 3% of postdocs achieve this goal (**van der Weijden et al., 2015**), a figure that is likely to be indicative of success rates across academia. Why then, when so many postdocs will end up in non-academic positions, is the language around alternative positions so likely to be phrased in terms of failure? The toxic narrative about 'going to the dark side' and that leaving academia is somehow a second-best option needs to be eradicated, as does the assertion that to secure an academic role 'you just have to want it enough' or that 'you just have to grind through it'. The simple truth is that there are far more postdocs than there will ever be academic positions and training programmes, development plans and career conversations with postdocs and postgraduate students need to be open and honest about this and place equal value and effort into supporting the development of a non-academic careers.

#### *Research funders need to get involved*

Research funders have huge influence on the policies and activities of universities and as a result can drive effective changes in the postdoctoral experience. In the UK the majority of research funders are signatories to the Concordat to Support the Career Development of Researchers, (**2019**) which requires them to '*Include requirements which support the improvement of working conditions for researchers, in relevant funding*

*calls, terms and conditions, grant reporting, and policies'* (**Ibid: 2**). Staff development plans are now being seen as part of grant applications (e.g., Wellcome Trust), but it is unclear how the delivery of these is assessed at the end of a grant. If funders were to give postdocs employed on research grants the opportunity to independently report back on their experience at the end of the grant it would allow them to build a picture of how postdocs are faring at an institutional and departmental level and share this with institutions as a guide for improvements. Universities in the UK are assessed and ranked in many ways, but if this postdoctoral experience data were presented in league tables or comprise part of formal research assessment exercises it would serve to heavily incentivise action in order to recruit and retain the best postdocs by institutions themselves.

Additionally, funders could mandate a minimum level of training and development for postdocs employed on grants. In the IAS our postdocs, and those who opt in from the wider Warwick postdoctoral community, have access to an extensive, bespoke training programme that delivers 1-2 hours of weekly term-time training. This may sound like a lot, but in terms of their working hours, the 60 hours participants commit to this programme only represents about 3% of their contractual hours so will actually take a minimum amount of time away from research. Alternatively, if there are concerns about the impact on research project delivery, why not extend grants to create this necessary developmental time within the project. Again, this may sound excessive, but looking at the salary costs of a postdoc here at Warwick, 60 hours per year would only come to about £1.6K of additional spend and an additional month at the end of the project for the postdoc, which would allow time for developing publications and independent ideas only about £4.2K. In the budget of a typical grant these are quite small amounts and if funding for postdoc support and training was made an allowed cost on grants, departments could deliver substantial support programmes with only a small amount of additional funding on their portfolio of grants.

Something else for funders to consider is how the eligibility and assessment criteria impact on postdocs. Accessing most research funding schemes is not possible for those without a permanent position. Opening schemes to postdocs to submit applications in collaboration with more established colleagues would allow them to develop independent ideas in a mentored environment which should give funders more confidence that the project will be successfully completed. In those fellowship schemes accessible to postdocs, the emphasis on track record is understandable but, given the challenges early career researchers face in getting publications in press would a heavier weighting towards the new research idea being presented not be fairer?

Funders also have a role to play when it comes to diversity in the academy. Issues with diversity and underrepresented communities in academia and other research careers are well known and well documented. In 2014 the situation in the United Kingdom was highlighted in a report by the Royal Society (2014). Focussing on STEM subjects, the report showed how diversity in the three assessed categories - Gender, Disability & Ethnicity - dropped dramatically across the academic career profile with the biggest selections taking place in the doctoral studies and postdoctoral space. No doubt there are many factors at play here, but I would suggest that an emphasis on recent publications in the assessment and the overt or implied need for mobility make it much harder for those who will find it difficult to move or have had career breaks for caring reasons to secure fellowships. A review of the way fellowships are assessed and awarded and how certain groups are disadvantaged is needed to increase the diversity in the academy. Certainly, hearing comments such as 'I feel like I have to choose between a baby and a career' and 'academia isn't set up for people like me' as we have in the IAS does not suggest the current system is working for all.

## **Conclusion**

Postdoctoral researchers are at the heart of research, but too often this highly skilled and motivated group encounter a very negative experience leaving them disillusioned, cynical and with their mental health suffering. A change in this aspect of research culture is urgently needed and will benefit both postdocs and their employers as clearly postdocs who feel valued and supported will deliver extraordinary results, and be more likely to remain working within the sector. That institutions and their research departments alongside key sectoral actors such as research funding bodies have a key role to play in effecting such change is unmistakable. Nevertheless, there is also a need for a corpus of willing, engaged and influential individuals within each research organisation to permit such beneficial changes to not only occur, but to become embedded within a more effective postdoctoral research culture.

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**Endnotes**

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<sup>i</sup> Data taken from <https://www.ukri.org/what-we-do/what-we-have-funded/>.

# Research Culture: People, process, impact... and knowledge too?

Robert Pilling

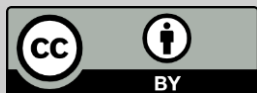
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## Abstract

*Subjective formulation of research culture drives momentum for positive person-centred change. A common articulation is one, which emphasises cultural problems arising from overemphasis of the 'lone academic', exploitation of 'lesser-academics' and invisibility of enabling roles. This article considers systemic implications of this dominant narrative for research leaders and research leadership, giving specific attention to the nature, status and visibility of knowledge and its accompanying dynamics.*

*Two contrasting cultural formulations are considered respectively as 'People, Process and Impact' and 'The Knowledge View' with corresponding conceptual models proposed as 'Social Benefit Factory' and 'Knowledge Cooperative'. Concern is raised at the apparent dominance of the factory model within research culture discourse, and a vision is presented for the development of a balancing knowledge conversation: both to engage interdisciplinary thinking on research culture, and to contribute directly to cultural discourse. Opportunities for the latter are considered briefly in relation to research leadership, objectivity and collegiality. The author attended the International Research Cultures Conference to gain a sense of the agenda and to co-locate his professional interests. This reflective response to the event is grounded in personal academic practice rather than academic specialism. It aims to invite connections and conversation. It is at the same time a preliminary conceptual inquiry into the nature and flux of academic boundaries, whether subjective, objective, practical or institutional.*

**Keywords:** research culture; research excellence; knowledge dynamics; leadership; objectivity; collegiality

## **Introduction: My Background, Warwick Conference, Knowledge View**

I am based in the Department of Chemical and Biological Engineering at the University of Sheffield, where I support research development, design and delivery. I have a physical science background and have worked within industry, government, academia and the third-sector. I work explicitly from a systematic knowledge perspective, i.e., I am interested in dynamic processes of knowledge creation, sharing and application, and in finding conceptual system-based formulations, which support these processes and the researchers who drive them (**for examples, see: Routoula et al., 2020; Pilling and Patwardhan, 2022; Pilling et al., 2023**). I see strong links, in my work, to research culture goals, specifically: how can academics best collaborate, how can we tailor roles to individual strengths, how can we support diverse Early Career Researchers (ECRs) and enable them on diverse career paths. Equally, how can we support academics to establish and evolve ambitious research vision, capture funding, build productive collegiate groups, and ultimately ensure high quality research and maximise benefits for society.

I attended the International Research Cultures Conference (25 September 2023, Warwick) to gain a sense of the agenda and to co-locate my professional interests. The event proved valuable for the former but I struggled to do the latter. While themes, ambitions and challenges felt familiar, the agenda seemed like a different world, one in which knowledge creation is considered as something which ‘just happens’, when the right people (exhibiting their best behaviours), good process and impactful intent are brought together. I will refer to this as a People, Process and Impact (PPI) formulation of research culture. My own world adopts a contrasting view, which considers the dynamics of knowledge itself. While I suspect, few academics explicitly formulate these ideas, I believe that many share corresponding tacit relations in the doing of their work and associated day-to-day interactions. If we exclude these knowledge processes from our definition of research culture, even of research excellence itself, it feels to me that we are overlooking an essential perspective, which I am calling here the Knowledge View.

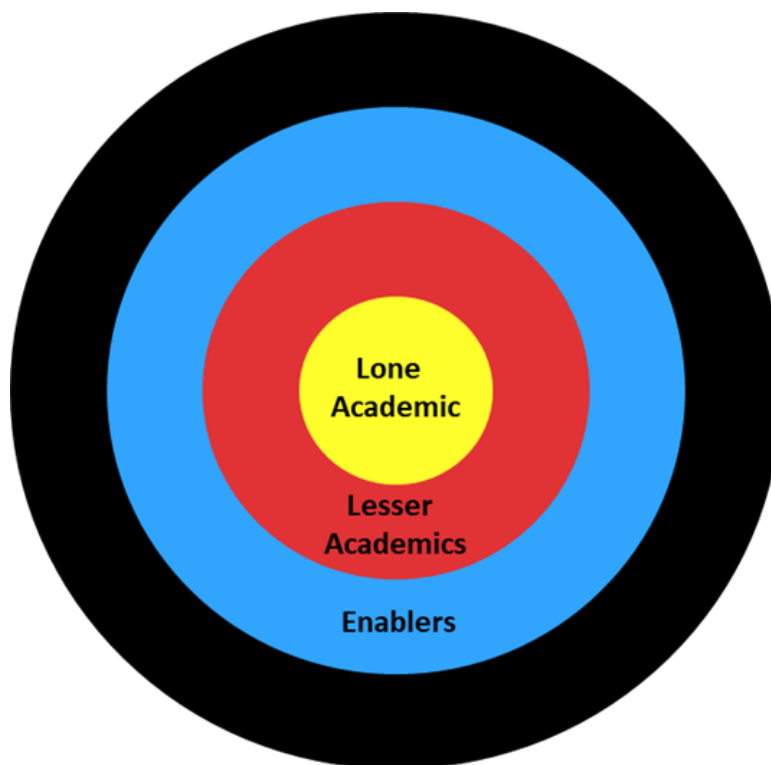
## **Dominance of Problem-Based Thinking within Research Culture Discourse**

The first speaker (**Meyer, 2023**) set a tone, which echoed through the day. A bold statement of the need for cultural improvement and change. The second (**Ogryzko, 2023**) provided a more explicit diagnosis. **Figure 1** is my attempt to paraphrase their Problem-Based Model (i.e., a model of UK research culture formulated to describe a central problem affecting it).



The following accompanying description uses emotive language for emphasis: Research is centred on a lone academic, supported by a bubble of lesser academics, and a peripheral sphere of non-academic enablers. Problems arise because of an overemphasis on the lone academic, exploitation of lesser-academics and invisibility of non-academic roles. This is a situation, which we need to move away from, and better research culture is a vehicle by which to do so. My cartoon fails to encapsulate the nuance of the speakers' presentations, but I suggest that it does describe an influential underlying narrative, demonstrated by the tone and content of the first two plenary presentations, and echoed through the day.

*Figure 1: A Problem-Based Model of UK Research Culture.*



I work closely with several research leaders, for whom I have much professional respect. Faced with a starting assumption that their established and traditional day-to-day role represents the epicentre of an intrinsic problem, I found myself on the defensive. Emphatically, this is not to deny that problems and challenges exist. Rather it is to question whether, by the same logic that deficit thinking is not a solid foundation for the development of individual researchers, whether it is necessarily a good one for how we talk about research culture and cultural change? Ultimately research leaders are people too. They have within their midst some of the most complex workloads and lowest morale.<sup>1</sup> They play a central and essential role within the research system. This is not to downplay wider factors, circumstances, and experiences. It is simply to express that, which I did not hear during the day. There is a danger in this

omission, in that the resulting deficit-based critique, comes to represent its own implicit form of exclusivity.

From here, I consider systemic implications for research leaders and research leadership, giving specific attention to the nature, status and visibility of knowledge and its dynamics.

### **Two Alternative Views of Research: Social Benefit Factory and Knowledge Cooperative and the Dominance of the Factory Model within Cultural Discourse**

Leadership theory emphasises positive social influence deployed in pursuit of a common goal (**Grint, 2010: 1-14**). Within an institution, leadership roles may be formal, reflective of administrative authority, or informal, reflective of individual capacities and initiative (**Ibid**). Within an academic context, the situation is further complicated since hierarchy and authority are themselves ambiguous. Are research leaders responsible to the corporate institution, to the people who work there, to the academic discipline or to society at large? To what extent do we expect, respect and trust them to show leadership, in response to this complex array, as independent and principled researchers?

Polemically, is the traditional ideal of research independence (aka the lone academic?) academia's greatest asset, or a source of social toxicity and corporate threat? Dismantling the ideal, appears to reduce the role of research leader to that of administrator, securing and deploying funds, and merely coordinating those, who go on to do the real work. It is notable that this deflating description supports formulation of academic research primarily in terms of people, process and impact, speaks convincingly to pressing social justice and well-being concerns, and emphasises the indisputable importance of research investment delivering societal benefit. It also presents a view of academic research, which is conveniently and corporately commandable.

This unity of form and purpose, however, comes at a cost. It flattens the landscape and transforms academia into a social benefit factory. And an increasingly administered one at that. Contrast this, with an alternative description, (slightly paraphrased) from a guide for early career academics (**Patwardhan & Clare, 2021**), written by two successful and committed research leaders: If we wanted to describe universities in a single word, then we would say knowledge. Our role as academics is to create, translate, transfer and exchange knowledge for the benefit of society. This view is entirely consistent with the benefit factory model, yet explicit knowledge mechanics are entirely absent from the latter. Dominance of the factory model, within cultural discourse, thus eliminates space for

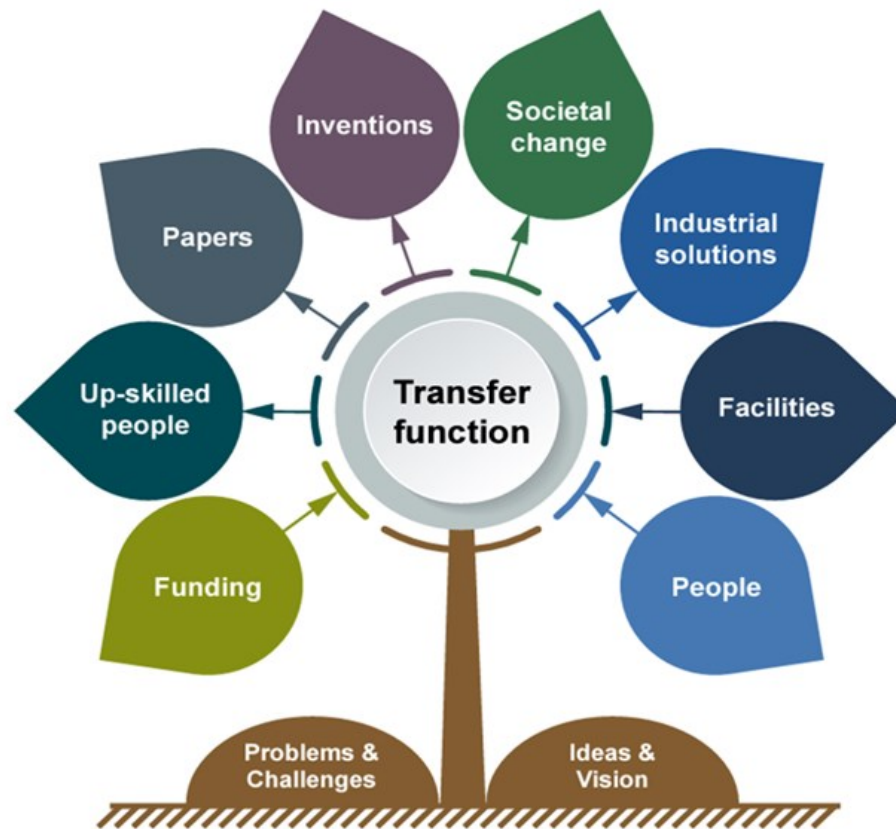
appreciating, examining and interrogating, the nature and dynamics of knowledge, including associated critical links to research leadership.

It seems that trees provide an engaging metaphor for describing cultivated and creative academic endeavour. **Figures 2 and 3** present contrasting examples, which illustrate two distinct worlds. My concerns are not that these different worlds should exist and be supported, but the extent to which, by their divergent formulation and pursuit, they compound tensions, intensify divides, overload individuals and otherwise undermine the very things they are intended to support. For one of these views to apparently dominate cultural discourse seems of itself problematic.

Figure 2: Value driven vision for research culture. Source: Heywood et al 2024, included with permission.



*Figure 3: Knowledge mediated academic transfer function.  
Source: (Patwardhan & Clare 2021), included with permission.*



### **The Importance of Thinking About and Talking About Knowledge**

Our intuitive familiarity with the term knowledge, belies its complex, slippery and contested nature. Different disciplines relate to knowledge differently (for example: broad delineation of science and humanities or, equally, the contrast of scientific and engineering mindsets). These differences affect the creation and translation of knowledge, and the processes and pathways by which these are best achieved. Differences are also personal: individuals have different knowledge motivations and sensibilities, and their access to knowledge tools, capabilities and experience may vary. Personality influences cognitive preferences and role specialisation colours professional outlook, as do working cultures and environments.

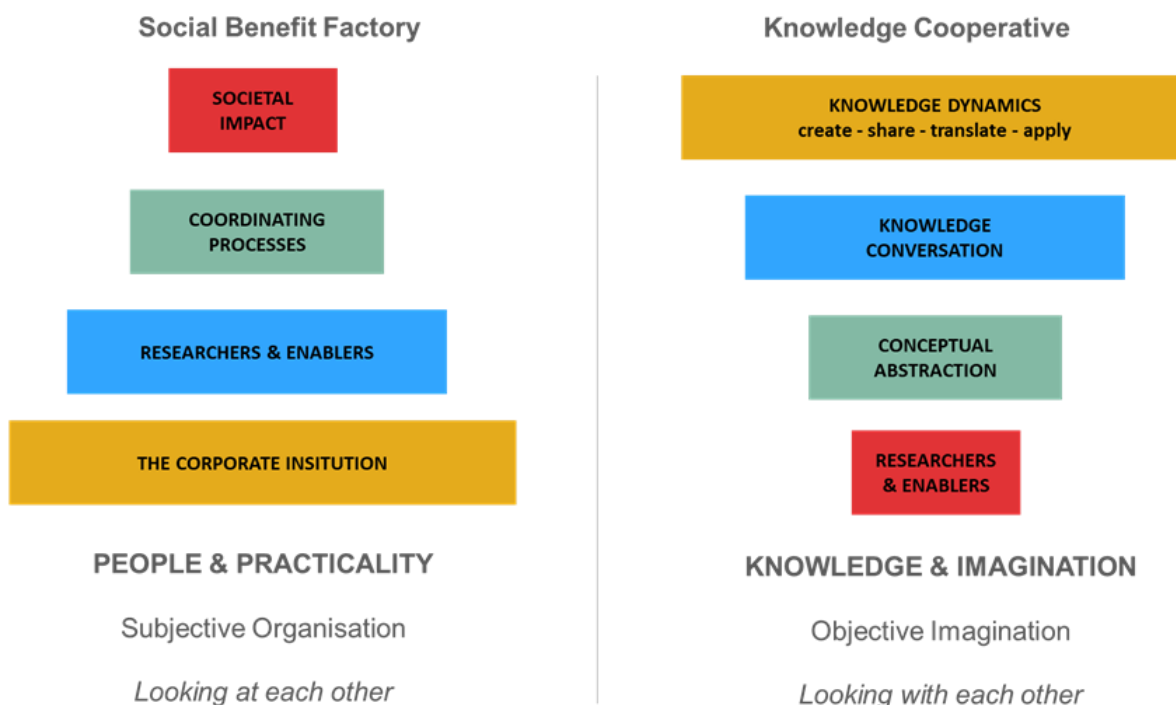
This smooth on the outside, crunchy on the inside characteristic is a reason why, on the one hand, the benefit factory model is superficially attractive, and on the other fails to deliver all that is needed. My point here is not to claim personal expertise in theory of knowledge (a point emphasised by my deliberate avoidance of academic references for this section). Nor to demand that everyone hold a sophisticated rationalisation thereof. Rather it is to emphasise that because we mostly don't have personal access to

such insight (and even those who claim to, may not always or easily agree with each other), we need to do more collectively than simply and conveniently wish complex dynamics and tensions away.

My attempt to articulate a corresponding vision is that of an active, dynamic and ongoing knowledge conversation, through which we come to understand and navigate the nature, role and significance of knowledge, the diversity and nuance of our relations to it, and of the particular importance of its dynamics within research. This conversation needs to work within and across roles and divides. It needs to be democratically accessible, blending and layering clarity and precision with inclusive generality.

Inspired by this vision, **Figure 4** provides an illustration of the benefit factory model (based upon looking at each other) and a contrasting knowledge cooperative (based upon looking with each other). The shifting block widths represent the convergent practical emphasis of the factory model, and the complementary divergent emphasis of the knowledge cooperative. A crucial challenge in considering these ideas is to resist the temptation to pick a winner or preferred form. While this is natural, there is simply no need. Both views (and others besides) have their potential role and value.

*Figure 4: Research Perspectives – Social Benefit Factory and Knowledge Cooperative models*



The idea of establishing an accessible and coherent knowledge conversation within our cultural formulation raises practical challenges in that knowledge specialisation and method sophistication work in tension

with accessibility. Also, divergence of methodological (and ideological) commitments present barriers to mutual coherence (and, potentially, mutual respect). At the same time, our cultural knowledge conversation must complement not antagonise the person-centred vision for research culture and excellent research overall.

A possible response to these challenges, mirrors that which I have been working with in the context of ground level knowledge integration and research support. Here, my primary tool is that of working overtly and imaginatively with conceptual abstraction: excavating the knowledge conversation from its concrete methodological roots and bringing it towards an abstracted surface. Reducing reliance on ground-up fixed-system expert mindsets, on the one hand, and building necessary trust and acceptance to overcome person-centred resistance to, otherwise potentially invasive, systemic thinking on the other. In this way, we are not choosing between objectivity and subjectivity but building collaborative and dynamic abstractions, which support intelligent and inclusive ways of working.

If this description appears unconvincingly fuzzy, it may help to recognise (via something of a meta-contortion), that this article itself is an example of exactly how such an abstract view can be both constructed and proceed ahead of a more concrete or specialised implementation. The result, which inevitably asks more questions than it answers (i.e., invites discussion) in no way replaces a more traditional and academically authoritative treatment. However, approached with imagination and curiosity, it can offer an anticipatory platform, stabilising and supporting diverse, creative and dynamic thinking, interactions and workflow. More prosaically, it can provide a useful conversational prop. These are exactly the tactics, which have proved valuable to my own work, supporting nascent knowledge creation and research design. It would be exciting to explore their wider application (and more rigorous grounding) within the scope of research culture, both to stimulate interdisciplinary thinking, and for adding directly to cultural discourse itself.

### **Collective Knowledge Conversation is Vital for Achieving Cultural Goals.**

In closing, I sketch three opportunities for knowledge conversation contributing to cultural goals:

*Leadership:* Without the knowledge view, it is possible to lose sight of the complexity of research. We may fail to acknowledge the contingent, dynamic and multi-scale nature. We may fail to recognise that progress builds on intellectual vision, incremental attrition and sustained persistence over years, if not decades. In this light, benefit flows heavily

towards, as well as from, early career researchers. This dynamic, while not overriding, has ramifications for how we interpret and respond to the Problem-Based Model. Not least, can knowledge conversation help to reframe and more overtly recognise knowledge leadership by strengthening, diversifying and celebrating formal influences, and at the same time building status and visibility for informal modes and contributions?

*Objectivity:* A particular challenge within research groups can be to keep the personal and the subjective out of (at least some) conversations. In the sense that defensiveness, sensitivity, or lack of prior-exposure can hamper clarity and criticality of research discussion. In this there is a balance to be made in terms of respecting modern sensitivities around inclusion, adjustments and personal boundaries, and at the same time staying true to the necessity of rigorous, critical and objective research discussion. What was perhaps in the past a tacit learning process, no doubt facilitated by more homogenous researcher populations, may now benefit from an increasingly overt and skilful knowledge conversation (and this in tandem with building the inclusive, trusting and respectful environments upon which such interactions rely).

*Collegiality:* An analogy is that of a hospital. Whether one is a medical student, nurse, administrator, hospital porter or consultant, there is an easily accessible and understandable sense of common and shared commitment to the health and well-being of patients. There seems to have been a strange leap, within universities, whereby we are intent on throwing our equivalent baby (i.e., knowledge) out with its bathwater. This is a shame, as it is arguably the most powerful unifying thread running through academia. If instead we were to emphasise and rejuvenate this thread, make it accessible, dynamic, diverse and engaging, would this not provide a common bond of the sort, from which collegiality cannot help but arise?

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Figure 1: A Problem-Based Model of UK Research Culture.

Figure 2: Value driven vision for research culture. Source: Heywood et al 2024, included with permission.

Figure 3: Knowledge mediated academic transfer function. Source: Patwardhan and Clare 2021, included with permission.

Figure 4: Research Perspectives – Social Benefit Factory and Knowledge Cooperative models

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**Endnotes**

<sup>i</sup> An internal University of Sheffield study identified 'mid-career researchers' feeling 'swamped by teaching, admin and supervising students' finding that 'time to focus on research gets lost' and feeling that 'their research careers are stuck'. Impact of time pressures were also noted by ECR/PGR as a 'trickle down' into supervision. In a related survey G9 researchers recorded considerably less positive than average responses. Again, workload pressure stood out.

# From 'Whiteness' to the Privilege Continuum: Contemplating EDI, its language and how it supports researcher careers

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## Abstract

*This paper makes a case for a significantly different approach to EDI (Equality, Diversity and Inclusion) interventions in the Higher Education research space, focusing on institutional, systemic unconscious biases and supporting an affirmative approach to reaching various diversity targets and aspirations. The challenge here lies in mainstream EDI interventions being generally built around a deficit model, e.g., with a focus on groups or individuals who 'need to be supported' instead of focusing on adapting institutional processes and 'ways of working' to support more equitable and inclusive cultures built into institutional processes.*

**Keywords:** EDI; coloniality; privilege continuum; interdisciplinarity; whiteness; researcher careers; unconscious biases; systemic exclusion; structural disadvantages

## Introduction

This paper makes a case for a significantly different approach to EDI (Equality, Diversity and Inclusion) interventions in the Higher Education research space, focusing on institutional, systemic unconscious biases and supporting an affirmative approach to reaching various diversity targets and aspirations. The challenge here lies in mainstream EDI interventions being generally built around a deficit model, e.g., with a focus on groups or individuals who 'need to be supported' instead of focusing on adapting institutional processes and 'ways of working' to support more equitable and inclusive cultures built into institutional processes.

## Current UK HE Contexts

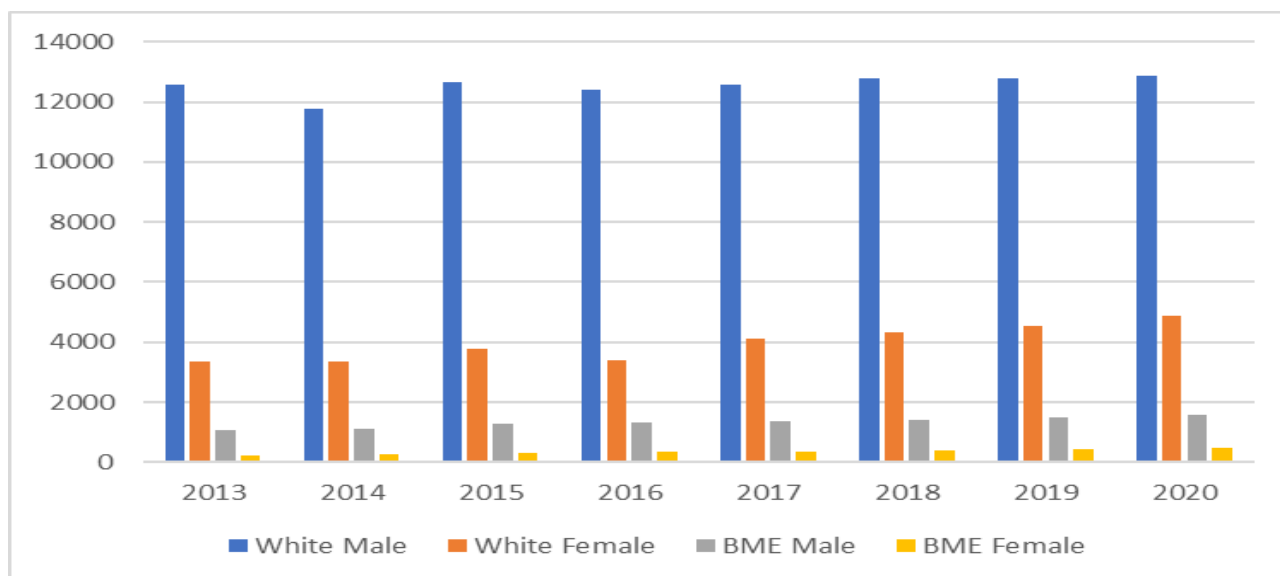
Over the past few decades, EDI has been the instrument of choice to further the diversity agenda in the Higher Education Sectors. There has been incremental progress, but arguably, as the stats suggest, it has not worked to make a significant needed step change, especially in areas where intersectionality is at play.

For instance, in terms of gender and race, here are some UK stats:

- Women have a lower success rate for grant applications and request smaller grants (**Guyan et al., 2019: 20**).
- Non-white principal investigators receive, on average, 10% less funding (**HESA, 2023**).
- Women's research tends to be less likely to be submitted for research assessment exercises (**HEFCE, 2023: 44**)<sup>i</sup>.
- Female HE researchers experience more 'research thematic adjustments' than men, as their careers are more fragmented. (**Minello et al., 2021; Bhopal & Henderson, 2021; Aiston & Fo, 2021**).
- There are less than 1% non-white PIs across all subjects (**HESA, 2023**).

Thus, in 2022, from a total of 23,525 professors in the UK, there were only 6,980 female professors (39.6% of all professors), 165 black professors (0.7% of all professors), and 38 black female professors (0.16% of all UK professors). (**Arday, 2022; HESA, 2023**). We make progress (**see Figure 1**), but slowly and only incrementally. As of August 2023, there were 61 Black female professors in UK Universities from 23,000 UK professors (**WHEN, 2023**).

Figure 1: Staffing Data of Professors by Race (adapted from *When, 2023*)



Although some progress has been made since the publications of the UKRI commissioned 2019 report on ‘Equality, diversity and inclusion in research and innovation: UK review’, it largely is still the case that this area still lacks a critical mass of data and research, particularly in areas of intersectionality, research vs innovation careers, protected characteristics other than gender, such as socio-economic backgrounds (**Guyan et al., 2019: 24**).

Additionally, and of particular interest to the co-authors of this article, systemic structural biases related to research methodologies and their perceptions of research excellence are under-researched but can be assumed to be a key driver for the differentials in gender and race-related researcher career progression.

Current traditional types of EDI-related interventions include training (diversity and unconscious bias), protected group-focused policies (career breaks), career development programmes (mentoring and coaching), recognition schemes (charters and awards), and employer engagement and outreach schemes (supportive networks). A 2019 UKRI-commissioned study has found that many of these schemes do not produce statistically significant results about their efficacy and mostly lack demonstrable evidence of success or demonstrate only ‘some positive results’ (**Guyan et al., 2019: 20ff**).

However, there is increasingly available data and evidence from UK HE sectors and the case studies that represent common narratives from research careers (**Welikala & Boehm, 2023**), suggesting that the trajectories of various researcher careers have been affected by inbuilt systemic and institutional biases. These still largely invisible biases within institutional systems, policies and ways of working provide a challenge to

meeting diversity, equality and inclusion aspirations and targets<sup>ii</sup>. Substantial progress is thus less likely to be achieved by the currently more common mainstream interventions that focus on a target group or individuals.

Thus, we would suggest what is needed is rather an approach that focuses on the institutions' inbuilt biases that have the potential to exclude or create barriers to success. If, for instance, *'invisible and uncontested whiteness moulds the social-cultural and intellectual imaginaries within higher education (...), suppressing alternative ways of perceiving the world'* (Welikala, 2023) ... then it will - and demonstrably already has affected our progression into more diverse and socially just, academic research cultures, including how we do knowledge production.

The challenge here lies in mainstream EDI interventions being generally built around a deficit model, e.g., with a focus on groups or individuals who 'need to be supported' instead of focusing on adapting institutional processes and 'ways of working' to support more equitable and inclusive cultures built into institutional processes.

This article outlines and reflects on some needed interventions that focus on institutional, systemic unconscious biases and support an affirmative approach to reaching various diversity targets and aspirations.

### **Underpinning Insights and Principles**

In January 2024, a special issue of the international journal *Philosophy and Theory in Higher Education* (published by Peter Lang) was published (Welikala & Boehm, 2023; Boehm, 2023b) and this was a milestone in a much longer international story that started with a collaboration between two co-editors and international group of participants in a series of online roundtables, exploring topics around 'whiteness', 'coloniality', and EDI within the academy.

What makes this area of study also so challenging is that the language we use lacks neutrality itself. Language 'can be a help or a hindrance in forming, perpetuating, or challenging stereotypic views' as part of a natural, human process of 'social perception, judgment, and interaction' (Beukeboom & Burgers, 2017). Thus, it has been noted even in anti-racism work that 'the language we use names our differences in ways that separate us, rather than enabling us to seek spaces for mutual and authentic engagement across difference.' (Abdi, 2023, n.p.) Muna Abdi, in her work, thus took the decision to replace the word 'privilege', which centres on individuals, and thus often creates a defensive reaction but also hides the fact of more structural disadvantages. Privilege is not the cause but rather the outcome of this structural bias. Her chosen term is

‘structurally enabled/embedded advantage’, signifying a similar needed shift to the systemic as what we are proposing in this article.

We do feel that the term EDI in itself is highly problematic, as similarly, it has a tendency in its used conceptualisations to focus on the individual rather than the systemic. But even in this article, we make use of these terms. So, although we recognise the limits of these terms, we would like to raise awareness that these terms, although not perfect, are shorthand for a multidimensional number of concepts and phenomena. Language fails our need for nuance here, and language is a blunt tool with its own evolved and inherent biases. This is a key thing to remember when dealing with structural biases; it is a social construction expressed through socially acquired language systems.

Despite the shortfalls of language systems, our discourses started to underpin our insights, reaffirming that:

- Language is not neutral, and the term EDI is problematic in itself.
- Our standards, processes and practices are likely to be not neutral.
- Our main research systems in UK universities were built, developed, and authored still mostly by white men (and only a few white women, and almost no black women).
- The awareness is only emerging of how a colonial past has influenced our institutions of today.
- Our research cultures were largely established as institutional systems at a time when interdisciplinarity was not valued as highly as we do now.
- The phenomenon of ‘Privilege’ works on a continuum.
- Mainstream EDI processes support incremental progress but not step changes.
- Intersectionality data is essential to understanding some of the complexities of equitable interventions for career progression.
- And finally, but possibly most importantly, we need to move away from a focus on individuals to a focus on the systemic if we want to develop a just and fair process to support research careers.

It follows that there are practical implications for institutional policy or rather, principles that policies should ideally adhere to, including:

- Equity, not Equality: ‘We have a fixation for equality, but this is not always the right solution (...) Build institutions that give people what they need to succeed.’ (WHEN, 2023)

- Consistency, not conformity: We do not need to apply the same rules to everyone (equality) but should be able to provide everyone with consistent use of tools for success (equity).
- Avoid deficit models: It's not about the person; it's about fixing the system they're in.
- We need to be more confident about positive/affirmative action. Training staff to be confident in using positive/affirmative actions is important (**WHEN, 2023**)
- We need to provide spaces for a deeper discourse to minimise baked-in exclusionary practices.
- We need to avoid what has been called the 'death of a thousand cuts' problem, as identified by the Interdisciplinary Peer Review College (**UKRI IPRC, 2023**).
- We need to question what we believe not only in terms of what 'good research' looks like but also what a 'solid' researcher career should look like.
- We need to make an extra effort to change any possible existing perceptions that it is not acceptable to speak out about biases. Encourage all voices. (**WHEN, 2023**)
- We should be alert to phrases that can have gatekeeping functions.
- We need to provide sufficient data for intersectionalities.

What follows in this article are three different explorations, think pieces or critical reflections, if you like, led each by one of us three authors. These thin pieces apply our above insights to three different phenomena. This adds layers and discursive case studies to this picture.

The first one is derived from Boehm's work on interdisciplinarity, interrogating how this affects equity in the researcher's career space. The second one is derived from Adefila's work on identity, exploring her concept of a 'privilege continuum', and the third builds upon Welikala's work, critically reflecting on what this all means in a context of colonial underpinnings and how these contribute to the exclusion and marginalisation of particular types of research and research careers.

### **Exploration - Interdisciplinarity and Equity**

An example of the hidden but influential institutional biases at play is the example of interdisciplinary research, as explored by Boehm, and how it affects gender equity in the research career space. This example points towards commonly used terms becoming disadvantaging structures for

specific groups of researchers as part of professorial conferment processes.

In earlier publications, Boehm established a tension between perceptions of research excellence when comparing research with a focus on disciplinary depth vs one with an interdisciplinary breadth (**Boehm, 2016**). In short, this is due to a dominance of linear research production modes applied, named 'Mode 1' by Gibbons in his seminal book titled, 'The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies' (**Gibbons, 1994**).

As a short explainer (**see also Figure 3**), Gibbons' Mode 1 here suggests linear innovation, discoveries predominantly within a discipline, with quality being assured through peer review and success measured through concepts such as 'research excellence'. Mode 2 has characteristics of social accountability, problem solving with knowledge production becoming more diffused throughout society and tacit knowledge becoming valid. Quality is ensured through a community of practitioners and success is measured by its 'usefulness'. Carayannis expanded this model in 2012 to Mode 3, being characterised by an adaptive model that shifts between the two former models, with partnership co-production and co-owning of knowledge becoming central, and a balance of cooperation and competition. Quality is assured through impact on policy and success is measured as impact on society.

Boehm, quoting Watson (**2011**), wrote in 2016 that in contrast to the Southern Hemisphere, in the Northern Hemisphere, academia generally comes from a Mode 1 trajectory, which is generally considered to be the highest form of research. (**Boehm, 2016**) Thus, deep, mono-disciplinary research, the common outcome from linear research production models, is linked to the perception of what excellent research should look like.

This has implications for systemic unconscious biases when evaluating researcher careers comparatively for gender or race, with more women engaging in interdisciplinary research and more men engaging in mono-disciplinary research, because female HE researchers tend to experience more 'research thematic adjustments' than men, as their careers are evidenced to be more fragmented. (**Minello et al., 2021; Bhopal & Henderson, 2021; Aiston & Fo, 2021**) Thus, as women move more often between employers due to various reasons evidenced by numerous research data, women tend to be afforded to adapt and align their research trajectories with employer priorities, institutional research environmental structures (such as research centres or research themes) often in the long-term increasingly providing more broader, more interdisciplinary or more multidisciplinary opportunities for research rather than delving deeper into one single discipline.

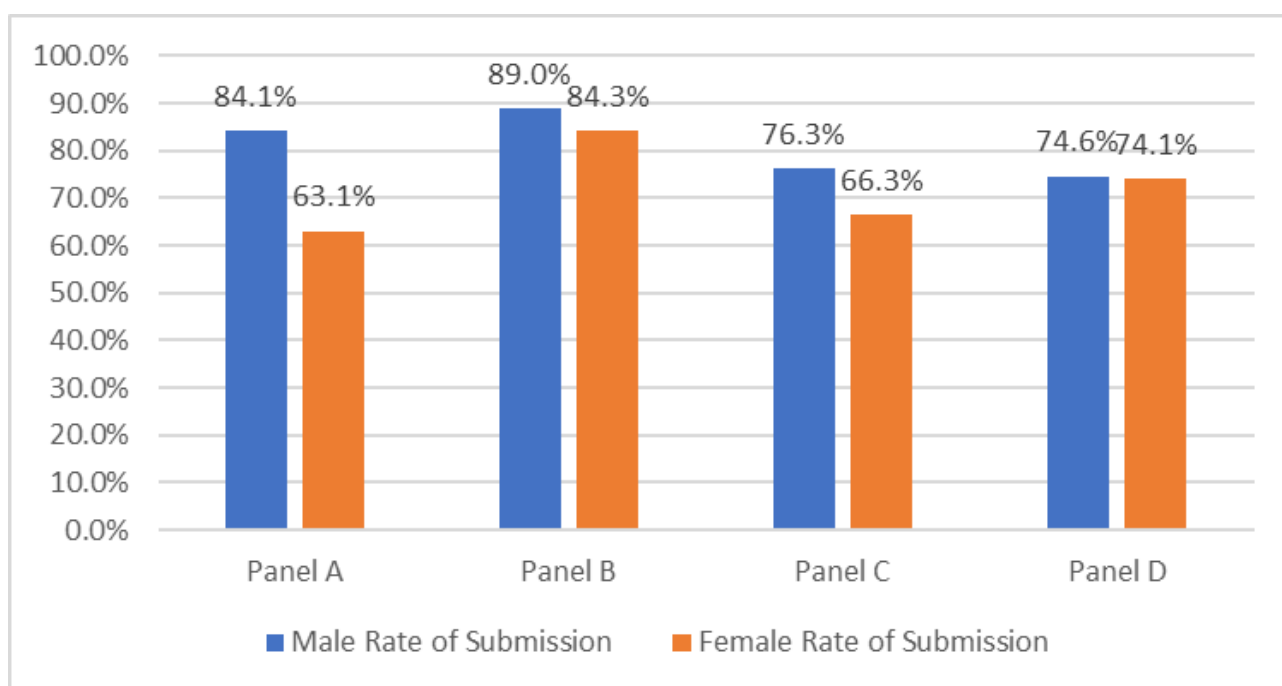


This influences the likelihood for submission to REF (Research Excellence Framework, see **Figure 2**). The REF 2021 analysis evidenced significant negative effects in regards to the ‘likelihood of submission for black, female and disabled staff’ and scoring of female vs male researchers (**HEFCE, 2023: 4**), demonstrably evidencing that the panels with disciplines that traditionally use a larger mix of research production modes (Panel A, with Medicine, Public Health, Applied Health, Psychology, Biological Sciences and Agriculture) have a wider gap between rates of female vs male rates of submission, compared to disciplines with more empirically and more Mode 1 focussed knowledge production models (Panel B, with all the Sciences including Chemistry, Physics, Mathematical and Computer Science, Engineering). This gap is significant, with Panel A’s Rate of submissions being 84.1% for males and 63.0% for females and Panel B’s rate of submissions being 89.0% for males and 84.3% for females. Thus, there is a correlation between the use of different methodological approaches and the perception of research excellence and, thus, likelihood of submission to REF.

As the HEFCE report itself suggests:

*There are statistically significant effects observed for three of the four main panels, and where the proportionate likelihood of submission for female staff can be seen to be lower than for male staff. In Main Panel A the odds ratio shows a 1/3 likelihood while for both Main Panel B and Main Panel C the odds ratio is close to ½. (HEFCE, 2023: 45)*

Figure 2: Impact of being female on likelihood of submission (adapted from HEFCE, 2023: 45)



As current quality assessment processes (e.g., RAE<sup>iii</sup> and REF) could be seen as having an inbuilt ontological struggle between different knowledge production modes, with outputs in REF predominantly supporting Gibbons Mode 1 knowledge production and impact case studies more often supporting Gibbons Mode 2 or 3 knowledge production (see **Figure 3**) (**Boehm, 2015: 3**), the dominance of outputs as a measure of research value follows, and is particularly evidenced in the northern hemisphere of academia. In the southern hemisphere, civic engagement has been a driver and an imperative for a long time (**Watson, 2011: 241-249**).

The dominance of a particular conceptualisation of research excellence and rigour is at play here, also reaffirmed and validated by peer review. The lack of recognition of mode 2 and mode 3 knowledge production methods is a consequence when it comes to assessing research value, and modes 2 and 3 are only valued when it comes to more recently introduced impact agendas (existent only since the last two REFs) or civic university contexts (which often take lesser priority than undergraduate teaching or producing scholarly research outputs).

*Figure 3: Gibbons and Carayannis Modes 1, 2 and 3, collated in (Boehm 2022)*

<b>Mode 1 (Gibbons 1994)</b>	<b>Mode 2 (Gibbons 1994)</b>	<b>Mode 3 (Carayannis 2012:48)</b>
<ul style="list-style-type: none"> <li>• linear innovation</li> <li>• discoveries within a discipline</li> <li>• interested in delivering comprehensive explanations</li> <li>• linear innovation model, non-linear of no major concern</li> </ul>	<ul style="list-style-type: none"> <li>• Problem-solving</li> <li>• social accountability and reflexivity</li> <li>• knowledge production becomes diffused throughout society</li> <li>• Tacit knowledge is valid</li> </ul>	<ul style="list-style-type: none"> <li>• simultaneously and adaptive Mode 1 &amp; 2 co-evolution</li> <li>• partnership co-production and co-owning of knowledge</li> <li>• balance of both cooperation and competition</li> </ul>
<u>Quality:</u> peer review <u>Success:</u> research excellence	<u>Quality:</u> community of practitioners <u>Success:</u> usefulness	<u>Quality:</u> impact on policy <u>Success:</u> impact on society

All of these issues result in the use of a concept, such as ‘excellence’, potentially being unconsciously used as an ‘excellent gatekeeper’, with unconscious biases pervading. These issues include:

- A bias for equating rigour and research excellence with disciplinary depth.
- The risk of associating interdisciplinary breadth potentially with a lack of focus or rigour.
- The risk of penalising researchers that have ‘jumped around different disciplines’ and thus more likely having more interdisciplinary approaches to research methods.
- The risk for minority candidates lacking consciousness of embedded, cultural (western, white, male) norms or the social capital to understand the need for explicitly briefing or finding informed and knowledgeable external reviewers.
- The burden of justifying or educating others about equity tends to repeatedly fall on already disadvantaged communities and individuals (also called ‘ontic burnout’ or ‘epistemic exploitation’; see also **Dunne, 2023**).
- The risk of disadvantaging researcher careers that demonstrate necessary agility in career changes due to childcare, caring roles, HE caretaker roles and job insecurities.
- The risk of accepting incremental progress as good enough and consequently failing to raise awareness of the scale of change needed towards equitable research career progression.
- The risk of having insufficient dimensions of intersectional data; thus, systemic exclusion or barriers can still be hidden from view. (e.g., black women professors).

There is a risk of not having sufficient time to rigorously interrogate systems and processes for hidden exclusionary processes. Biases are often built in ways of working or ways of valuing, and we tend to believe these to be inherently and demonstrably rigorous. These need to be challenged, interrogated and explored to uncover institutional, systemic biases.

### **Exploration - Identity, the Privilege Continuum and Equity**

Another exploration is what Adefila has called the ‘privilege continuum’, which allows our identities to be seen in different layers with different levels or qualities of privilege.

The term identity is used loosely to mean personalised categorisation, which can be distinct to individuals or collective affiliations; it is a multidimensional concept associated with complex human sociocultural assemblages and multimodal emotional and psychological attachments (**Sen, 2014**). Identity is bimodal on several dimensions; it is about uniqueness and aggregation, compatibility, and disparateness. Identity is so integral to human relationships with deep political, economic, and social implications; as such, it shapes and frames the privileges we can access. Furthermore, because individuals have so many different identities because of choices we could make, religious or political, for example, we are inevitably coupled to certain privileges associated with communities or ideologies. Identities can be constructed by virtue of ethnicity, race, or physiology. The social systems that formulate these identities are not politically benign.

Individual identities shift with geographical contexts, political and social and economic affordances, each attached to their different, nuanced qualities of privilege. As a simple example, a paper published in Italian is often referenced less often than one in English, whereas an Italian scholar publishing in English, their privilege changes to that context. An academic moving from a more income-distributed Germany to a less income-distributed USA finds their own professional career trajectories more affected by the choice of institutions, which affected qualities of privilege. Thus, identity can be viewed on a privilege continuum.

The potential for academics to be super collaborators as a result of intrinsic connections we have learners, communities, stakeholders and institutions, the academic community could be celebrating and rewarding the power of human partnership to advance the mode 2 and mode 3 knowledge production methods discussed previously (**Boehm 2022**) with transdisciplinary, transgenerational, and transnational applications. However, the architectures of Higher Education, whether that institutional culture or regulatory policy frameworks, often still afford Universities to fend for themselves, often still causing the town-gown divide, making partnerships between what is within a university and what lies outside of its boundaries more difficult. Although education ecosystems are well positioned to harness the collaborative power of learning, knowledge production and innovation, the identities of academics in these spaces do not seem to reflect the professional or epistemic diversity for which it is valorised.

Over time, the professionalisation of roles in Higher Education has changed significantly with democratic deficits encroaching on how we identify leaders, deans, heads of department, and their functions. With that shift comes with a evolution of associated privileges, but also the

stratification of staff in the higher education space; just as in our UK society, the divide between the poorest and the richest has grown to unsustainable proportions, the divide between the lowest paid to the highest paid staff in our universities correlates with the underrepresentation of groups and the historically excluded, which reveals how persistent inequalities continue to be.

Performance in this context is individualised, although performance of an institution is always based on forms of collective effort. There is a tension here between collective and individual identities, with performance metrics in our 21st-century institutions being driven by a long history of high individualism that obfuscates the contributions of collaborative or collective efforts over rewarding and platforming individuals as the sole or lead contributors to achievement (**Boehm, 2023a**). The emphasis is thus placed on the individually conceptualised and visible parts of the system that are measured and scrutinised for recognition, whilst tasks performed by many in a team, a collective or a collaboration are not adequately captured or rewarded. Who is thus visible or rewarded as the key contributor of achievements correlates with various privilege continuums, with underrepresented groups often being structurally disadvantaged from being named leads of collective achievements.

The focus on the individual, in terms of academic identity, and its link to individual achievement, hides the much more phenomenological reality of collective achievement. Thus, our individually conceptualised identities and their achievement, as an inherently perceived element of working life, get in the way of more collective ways of working being rewarded, and with that, individually conceptualised metrics represent another easy-to-apply disadvantaging structure. Although, individuals themselves display multiple achievements in different contexts in which they can be seen, evaluated and perceived, thus establishing an individually based privilege continuum that can change with context.

The privilege continuum is a gradual gradient on a continuous spectrum with no significant divisions or breaks. Privilege continuums have a gradual transition between two opposing or extreme points, not for classification or categorisation but to highlight relationships and multimodality. Invariably, we turn to concepts such as merit and objectivity to enable us to frame equality. However, these have multidimensional meanings in Higher Education, denoting geographical, disciplinary, professional functions and cultural significances based on value judgements that are far from universal. Thus, the privilege continuum demonstrates the challenges of using singular, episodic categories to pigeonhole individuals.

## **Exploration - Delinking coloniality in knowledge-making processes**

This section examines how the colonial underpinnings of research in higher education can contribute to the exclusion and marginalisation of particular types of research and research careers.

While coloniality embedded in teaching and learning increasingly draws attention (**Welikala, 2023**), there is little discussion on research and coloniality. Perhaps this situation may have resulted from an assumption that research processes have always been democratic, power-neutral, and immune from colonial power structures. However, a critical engagement with research within the higher education context convinces us of the otherwise. What is meant by higher education research, its purposes, the research processes, the presentation of research insights/findings as well as research assessment exercises, are inflicted by coloniality in subtle ways (**Smith, 2021**).

The concept of coloniality has initially been framed to delineate the strategic maintenance of the bureaucratic, racialised power structures and social imaginaries used to subjugate the colonised by the colonisers within the 'post-colonial' context (**Quijano, 2000; Maldonado, 2012**). This interpretation of coloniality can be identified as '*coloniality version 1*'. The genocide in Rwanda, Cambodia and current situation in Ukraine and Palestine evidence that coloniality keeps evolving in new shapes. Powered by the global political Centres, coloniality operates in an increasingly inhumane manner, reinterpreting injustice as justice. This is '*coloniality version 2*'. These versions co-exist, shaping the life worlds of the macro society as well as the inhabitants of the university.

Research practices are affected by both versions of coloniality, in different degrees. There is a need for interrogating research at every step of the way since what research questions are prioritised, which methodologies are accepted, who authors the research insights/findings, and who benefits from the research are shaped by colonial values and 'standards' in subtle ways (**Costello & Zumla, 2000; Pailey, 2020**).

Decolonial approaches are especially needed in interrogating the power issues hidden within international research collaborations. Within most disciplines, research partnerships are formed between countries in the Global North (GN) and the Global South (GS). While research collaborations are expected to be mutually beneficial, increasingly, the power and politics embedded within such partnerships are being critiqued. For example, international health collaborations between GN and GS contexts have been accused of exploiting the GS researchers and research respondents for the benefit of knowledge creation in the GN.

Collaborations are seen as paternalistic, creating ‘the little brother effect’ (Okeke, cited in Faure et al., 2021: 2) or extractivist. Further, there is little evidence of how the knowledge created will benefit the communities that provided data for the research (Faure et al., 2021). Despite the colonial underpinnings, the REFability of international health research outputs and the possibility of being judged as world-leading (4\*) or internationally excellent (3\*) can be high.

What counts as valued research within Western higher education is based on the methodological biases and the ‘quality’ of the research outputs. Research is generally expected to follow ‘standard’, linear processes, aiming to discover the absolute truth. This colonial rationality regiments how and what kind of knowledge should be developed through research. The norms associated with ‘rigour’, ‘validity’ and ‘reliability’ restrict the possibilities of seeing the world through relational connections. Rather, they promote individualistic, capitalistic and dualistic, ‘either’/‘or’ world views.

As Boehm (2023) observes, research in the most general contexts should be for the benefit of society, but the institutionalisation of research in Western higher education has made knowledge-making a bureaucratic, commodified process that is mostly not accountable to the researched but to the funders. The relationship between research and the community could be seen to be crudely severed in some disciplines while within some other disciplines participatory approach to research, creative inquiry and autoethnographic research are being promoted.

However, such methodologies are often given secondary status in the REF and so-called ‘high impact factor’ journals due to lack of ‘rigour’. This silences particular ways of knowledge creation, leading to epistemic omissions while presenting a universality which is actually an ‘over-asserted particularity’ (de Sousa Santos and Meneses, 2020: 82).

On the contrary, the idea of research in indigenous societies is intimately connected with their life worlds. For example, the collaborative methodology, ‘whakapapa’ (Kawharua et al., 2023), and social theories/principles such as àsùwàdà (the belief that individual goals are only achievable through the collective goals) encourage research-researched connection, which makes research worthwhile, sustainable and useful.

We can delink research from coloniality by making the invisible visible through debate, discourses and critical reflections like this special journal, all of which will help transform communities, enhancing justice while disrupting forms of hegemonies that disrupt particular ways of knowing the world.

## Conclusion

The institutional policies and processes around research and research career development are heavily informed by our historically evolved conceptual frames of understanding the world, including the northern hemisphere's long attraction to high individualism distorted to grotesquely inequitable levels in our neoliberal age, and our meritocratically perceived processes for advancing society by supporting individuals that meet the criteria developed by predominantly a particular subsection of society. It should be obvious that our research systems, due to the social constructions around achievement and merit, are and never have been without biases.

But to understand this and make space for debate of these issues in our research career-relevant committees, and then to explicitly embed this within our research career-related policies, would already be a giant step towards a fairer and just research system. We believe, and there is some evidence that it would result in a step change more significant than most of the incremental achievements that our individually targeting EDI processes have accomplished.

Avoiding individually conceptualised deficit models, we can finally move our focus away from the individual to fixing the systems they are in.

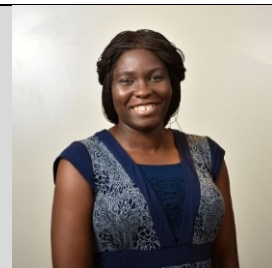
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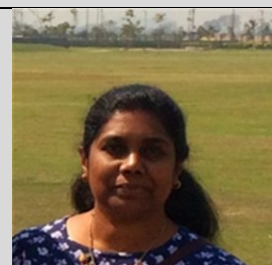




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Caveat: All images are included for the purposes of research and review.

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**Endnotes**

<sup>i</sup> In REF 2021, there were only 68.7% female staff of all eligible female staff submitted, compared to 81.4% male staff of all eligible male staff. 'This indicates female staff meeting the definition of 'Category A eligible' for REF 2021 were less likely to be identified as having significant responsibility for research than male staff meeting this definition' (HEFCE, 2023: 44)

<sup>ii</sup> It should be noted that targets themselves are problematic in relation to equity-focussed interventions, as they in themselves do not confront cultures, mindsets, or practices needed to understand the complexities of the phenomena around equity and diversity. Targets thus make it easy to not tackle inequality and in equities.

<sup>iii</sup> The Research Assessment Exercise, the precursor to the REF.

# Identifying Metrics for Measuring Research Culture at the University of Leeds

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## Abstract

*Evaluating research quality, environment, and impact has become standard in Higher Education (HE) and is largely based on quantitative data and expert assessments. Data-driven evaluations that focus on high-level statistics or conventional outputs can compromise the recognition of a wider range of research outputs and outcomes by a more diverse range of contributors. Hence, the mechanisms for evaluating research must be applicable and inclusive of a wide range of research activities. In contrast, research culture covers a vast breadth of areas, from career development, career pathways, reward, and recognition, to research integrity and equality. Most of these areas are not easily measurable, with capacity and capability limitations compounding the challenge. Clearly, there is a wealth of measurement options, which many research institutions are currently grappling with to best suit their local context. However, there are concerns as to whether it is appropriate or even possible to measure research cultural change. Concentrating too heavily on metrics rather than the changes themselves may pose additional barriers to the cultural change we desire. Thus, we argue that the adopted measures must be nuanced for context and for success relative to where we started and what we collectively understand as being measured.*

*Here we discuss the University of Leeds' process of selecting metrics to measure research culture change over the next five years. We share how we engaged with the SCOPE framework to identify, shortlist, and probe potential metrics across the four strategic objectives we have identified are best placed to enhance our research culture. From an initial list of more than 80 metrics we have been able to narrow down to just five robust metrics that we feel, with regular monitoring, will maintain adaptability, resilience, and rigour.*

*This paper aims to provide open and transparent insight into how we have chosen to measure our change in research culture, in order to: benefit the wider sector; foster the sharing of best practices and avoid duplication of efforts. Thus, capturing the true essence of what we at the University of Leeds think it means to change culture.*

**Keywords:** research culture; metric measure; research community; research culture strategy

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## **Introduction**

Research Culture impacts the entire research environment determining who does research, who enables research and how research is conducted (**Arthur, 2016**). It affects the type of research done, as well as how it is done and how it is disseminated and shared. While high-quality research is prevalent and widely produced across the research community, there have been rising apprehensions about how sustainable the current research culture is in the long run. Concerns around issues such as: research integrity; reward and recognition; career development and pathways; equality, equity, and diversity; and support for collaboration and interdisciplinarity. All of which affect the quality of the research produced.

However, how we measure research quality is most often driven by a complex grid of incentives imposed by governments, funders and institutions that mainly focus on quantity and narrow definitions of 'impact' rather than quality and human costs according to the Wellcome Trust published report on Research Culture (**Wellcome Trust & Shift Learning, 2020**).

Research culture is central to research excellence and affects the who, how, what, and where of research, and how research is disseminated and distributed (**The Royal Society, 2019**). As such, research and research excellence are influenced by the funders and governing systems such as the UK's Research Excellence Framework. Therefore, enhancing research culture has, in recent years, been an aim for research institutions and one that is supported, at least in England, by significant government funding (e.g., Research England's Enhancing Research Culture Fund).

Since its inception in 2014, the Research Excellence Framework (REF)<sup>i</sup> has been the guiding and driving force for Higher Education Institutions (HEIs) to enhance and achieve excellence in research (**Mcneely, 2023**). It has become a reference for governments, funders, and HEIs, highlighting areas of excellence, advising on the quality of research outputs, promoting best practices to better the research environment, bestowing benchmarks for

research quality and impact and informing the selective allocation of funding for research (**Sutton, 2020**).

However, there is growing recognition that current evaluation methodologies, such as the REF undermine other important elements that contribute to the diversity and enhancement of the research environment and fail to encapsulate the comprehensive spectrum of research outcomes. This recognition has encouraged the enhancement of the current research culture and the improvement of the evaluation methodologies to incorporate diverse activities and outputs. Consequently, building upon the changes to REF 2021 further changes have been planned and are being openly consulted on for what will now be REF2029. These changes see the broadening of the definition of research excellence to ensure recognition is given to the people, culture, and environment where research is undertaken and will capture the contributions of a wider range of research and research enabling staff and more diverse range of research outputs. Institutions that are striving to enhance their research culture will also be rewarded in REF 2029, so how we measure these changes is of paramount importance.

The critical need to develop mechanisms that embrace a wider range of research activities and contributors that may not fit the traditional moulds of evaluation metrics helped shift HEIs towards nuanced mechanisms that capture the multifaceted nature of research to ensure a more inclusive research culture (**Khoo, 2023**). We kept these concerns at the forefront of our minds whilst deciding which process to adopt for determining how best to measure the change we want to see at the University of Leeds (UoL).

## **Background and Context**

Community, Culture, and Impact are the core themes of the University of Leeds Strategy, from which the Research Culture Statement was derived in 2021 marking the starting point for the development of an institutional Research Culture Strategy (RCS) and action plan.<sup>ii</sup>

This research culture statement provided a blueprint for driving cultural change within the university community by fostering a collaborative, supportive and safe environment that emphasises diversity and inclusion and describes Research Culture as:

*... the environment in which research and innovation happens. It includes the ways in which we collaborate, communicate and interact; the behaviours, expectations, attitudes and values that shape how our research is developed, conducted, disseminated, and used; and the mechanisms by which our work is recognised and rewarded. (Leeds, 2021).*

Acknowledging that the university research culture was not perfect was the first step in changing the research culture. We admitted that our research environment is flawed, it lacks diversity, it inherits a hierarchical culture wherein contributions to the research endeavour are not equally acknowledged and a structure that hinders equitable communication of what is going wrong. We also recognised that research spans beyond the traditional research outputs and should be inclusive of everyone involved in delivering research be it the researchers' staff and students; research enablers: technicians and professional services; or collaborators and partners. As such we utilised a consultative process with ALL of the aforementioned research stakeholders to guide the creation of the Research Culture Strategy. We engaged in discussions with colleagues across the University to understand their research culture priorities. As employees, what type of culture do they aspire to experience? What obstacles have they encountered in achieving this? Through focus groups, meetings, extensive surveys, and various conversations with our network of researchers at different levels, a desired future culture emerged and was made clear. The predominant request from staff was for a workplace where:

- They are recognised for our diverse work,
- supporting equity, diversity, and inclusion is the norm,
- research can be done confidently and openly, and
- There is a culture of mutual support.

These characteristics straightforwardly became our four strategic objectives: valuing diverse forms of research activity; embedding EDI principles in research practices; enabling open research practices; and mutually supporting and developing research teams, with the overarching aim of enabling more University of Leeds colleagues to produce leading research inclusively, equitably, openly, and supportively. We have continued to take this consultative collaborative approach for delivery and in establishing how we will measure research culture change. The formation of several strategic groups of stakeholders: e.g., Responsible Metrics group; Open Research group and the Research Culture steering group, has been vital in supporting the formation and delivery of the strategy.

However, it would be naive to believe that with a new strategy, change will just happen, and our research culture will be better. As with any other organisation, a new culture needs to be skilfully crafted, nurtured, experienced, and measured; so that the community can see and feel the benefits of the new research culture strategy (Butt et al., 2024). The need to create a thriving research culture is not guaranteed if we do not have the right tools to measure our progress and assess our achievements. The



process of identifying and developing the best possible measures suitable for our strategy is described in the following section.

## **Methods**

The consultative process utilised for the creation of our Research Culture Strategy guided the process of identifying metrics to measure research culture improvements at the university.

Through a process of consultations and discussions on what motivations and hazards of measuring, we arrived at the crunch of *'Which facts and figures can best evidence that we are enabling more UoL colleagues to produce leading research inclusively, equitably, openly, and supportively?'*

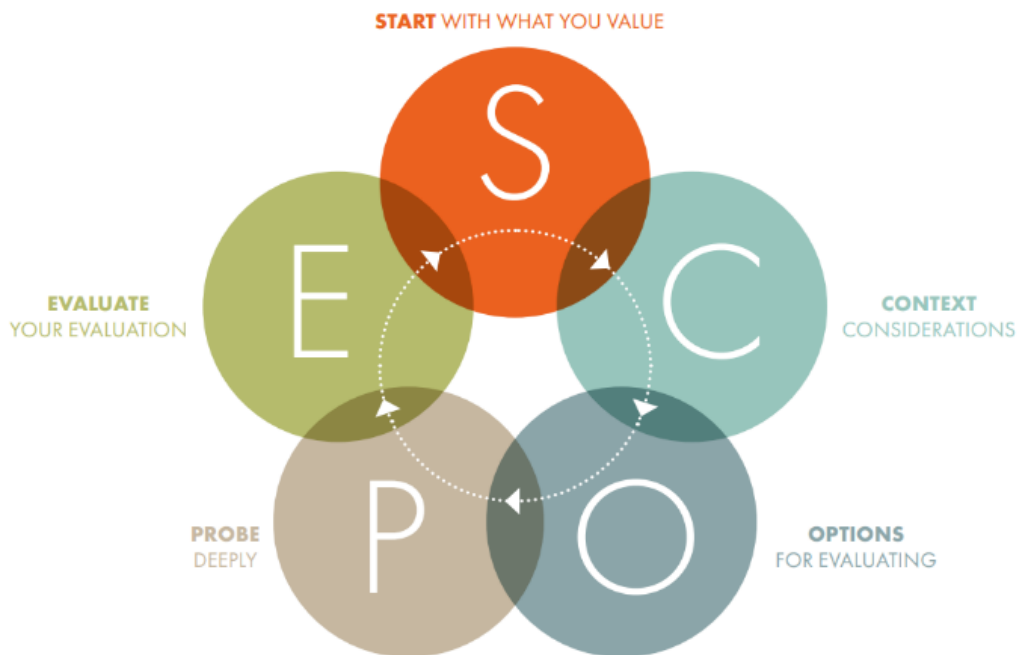
In common with many other institutions, we explored the use of several frameworks and models that can help shape our approach to choosing and assessing the metrics used to measure changes in research culture. Having said this, we were aware that the issue is not in generating ideas for measuring research culture change, as there is a wealth of possibilities, but it is in identifying the best metrics to measure and those best suited to our local context.

### *Stage 1: Start with what you value*

Since the launch of our formal research culture initiatives in 2021, we have engaged in ongoing discussions with colleagues across the University to ascertain what they value. As employees, we have sought to determine the type of culture they aspire to witness and experience, as well as the obstacles they have encountered in achieving this vision.

We chose to follow the SCOPE Framework<sup>iii</sup> (**Figure 1**) as a model for implementing responsible research evaluation principles and designing robust evaluations (**Davies & Fadhel, 2023**). The framework was developed by the International Network of Research Management Societies (INORMS) Research Evaluation Group and has been piloted by many research institutions. Our reasoning for choosing the SCOPE framework was encouraged by the alignment of the SCOPE principles: Evaluate only where necessary; evaluate with the evaluated; and draw on evaluation expertise; with the University of Leeds values (see below) and the four objectives of our Research Culture Strategy (see above).

Figure 1: SCOPE framework (CC-BY) *INORMS, 2023: 5*



While existing principles focus mainly on either evaluating a specific entity, e.g., researchers in the case of DORA<sup>iv</sup> and Hong Kong Principles, or via a particular mechanism, e.g., research metrics in the case of Leiden Manifesto and Metric Tide. SCOPE seeks to be applicable across the whole research ecosystem, enabling a responsible approach to design robust evaluations that can be used to evaluate any entity via any relevant mechanism.

The framework helps bridge the gap between the principles and their practical implementation by offering a structured and systematic framework for designing, implementing, and assessing evaluations. Furthermore, this framework provided a useful five-stage process for generating, stress-testing, and evaluating candidate metrics, which helped shape our approach to assessment (**Himanen et al., 2023**).

### *Stage 2: Context considerations*

The next stage was to consider the context of our proposed evaluations, we organised and facilitated a face-to-face workshop with members of our Research and Innovation Board comprising of the following university research leaders: the Deputy Vice-Chancellor for Research and Innovation, Deans for Research Quality and Postgraduate Research, Pro-Deans for Research and Innovation, and Heads of relevant services. In small working groups, we examined *what or who* we could or should evaluate and *why*.

These constructive conversations resulted in a long list of 85 potential things to measure (see **Appendix**) regarding the focus of our evaluation (e.g., grant applicants, research leaders or partners, publishers) along with an analysis of their associated advantages and risks. The involvement of senior leaders was crucial in advocating for each group's interests by highlighting both the benefits and challenges associated with measurement. This also helped identify instances where our motives for evaluation deviated from the values established during Stage 1.

### *Stage 3: Options for Evaluating*

Stages 1 and 2 produced an extensive list of potential measures, totalling 85, distributed across our four strategic objectives. These metrics were then categorised based on their level of analysis (e.g., individual/school/faculty/institution), data type (qualitative/quantitative/mixed), data sources, target audience for measurement and change implementation requirements, and a specified threshold or success indicator. This comprehensive coding process was labour-intensive but crucial in achieving the following objectives:

- Ensuring a balanced mix of levels of analysis, types of data, and agents responsible for driving change
- Identifying or modifying any impractical metric candidates based on specificity, measurability, validity, availability of data, interdependencies among metrics, etc.
- Prioritising key metrics to be further explored

Using the coding system described above the strategy working group were able to meticulously narrow down the longlist of candidate metrics to 16 top contenders, three-five for each strategic objective (asterisked in appendix). These 16 metrics were then subjected to further analysis and scrutiny during Stage 4 of the evaluation process.

### *Stage 4: Probe deeply*

Bridging perception gaps requires courage and honesty within any institution which involves breaking away from the metrics game and creating evaluation processes that are clearly infused with the organization's core values (**Hatch & Curry, 2020**).

Therefore, we decided to conduct this stage as an externally facilitated face-to-face consultative metric workshop. The workshop included members from: our Research Culture Steering Group; Research Culture Strategy Working Group; chairs of research culture governance groups, our external consultant and external colleagues, representing the full range of researchers (at various career stages and disciplines including technical and clinical colleagues) and professional service colleagues from

across the entire institution (e.g., Organisational Development & Professional Learning (OD/PL), Research and Innovation services (RIS), Library).

To ensure this short workshop was as productive and efficient as possible we enlisted the support of an external facilitator from the Centre for Facilitation.<sup>v</sup>

Our main objectives were to review the shorter list of potential metrics for monitoring and assessing progress in research culture, assess the advantages and disadvantages of each metric, reach a consensus on a smaller set of effective and feasible metrics, ideally one per strategic objective, as well as provide input for drafting an implementation plan encompassing short, medium, and long-term monitoring. The metrics needed to be tailored to the research community's needs and the university's values.

Attendees were preassigned to four tables that aligned with each strategic objective. To further refine the ≈20 prioritised candidate metrics, each attendee privately chose their preferred metric within each objective and placed it in the centre of the table, allowing a consensus to emerge visually. Then focusing on the two metrics with the most votes, each group probed the selection by discussing the strengths and weaknesses of each. Free-form concerns and reflections on the selections were added to the central workspace.

We then rotated around the tables to refocus on the bigger picture. One person from each group stayed in situ to present their group's selection and comments. Other members circulated to other tables listening and commenting on other groups' selection criteria and justification for elimination. At this point, we had 1-2 strong metrics per objective to focus on and a rich commentary from multiple perspectives.

Then came deeper probing. Attendees used the following questions to stress-test the options and to surface any that would be unusable:

- Who might this metric discriminate against?
- How might this be gamed? For example, to achieve more frequent communications about nonstandard contributions, units might report on minor, incremental achievements (aka salami-slicing).
- What might the unintended consequences be?
- What is the cost-benefit?

These proved to be powerful questions for thinking through the implications of each metric, and in some cases, how any unintended consequences might be mitigated. We were keenly aware that there is no perfect metric, and that each would be a trade-off between data availability, representativeness, and a range of other concerns that had surfaced in the coding stage that we circled back to in this stage.

Lastly came a plenary session where reflections on discrimination issues, gaming concerns, unintended consequences, and cost-benefits were shared aloud prompting further reflection leading us to conclude the session having settled upon at least one robust metric for each objective.

## Results

Having successfully evaluated and shortlisted five potential metrics for monitoring and tracking the research culture's progress, we also examined their strengths and weaknesses (Davies et al., 2021). The discussion process allowed for consensus to be reached on a final collection of suitable, attainable, and agreeable metrics. The wording of the final five metrics was further refined by the Research Culture Strategy Working Group in collaboration with their associated governance groups.

The research culture team incorporated these metrics into an implementation plan encompassing short-, medium-, and long-term monitoring as part of our strategy (Kent et al., 2022) and see **Table 1** below:

*Table 1: Research Culture Metrics within the Implementation Plan*

Metric	Measurable	Measurement Frequency
Increase in the diversity of the types of research activities that are communicated and celebrated.	Number of features mentioning research enablers, non-traditional outputs, research culture activities, research impact activities within School, Faculty, Institutional comms.	6-monthly
Increase in the proportion of academic staff (research track only) promotions to Grades 9 (Associate Professors) and 10 (Professor) by colleagues with protected characteristics that have previously been under-represented.	Equality data on academic staff (research track only) promotions to G9 and 10 by disability, ethnicity, gender, religion/belief and sexual orientation, cf. comparable data on academic staff in post (for grades 8* 10). (Grade 8: (Assistant Prof./Lecturer/Senior Lecturer)	Annually
Increase in the number and variety of University of Leeds research outputs deposited in institutional research information systems.	Total number of outputs recorded in Symplectic for the given year.	Annually
As above	Number of each type of output recorded in Symplectic for the given year.	Annually

Increase in the variety of staff roles named as PI, Co-I and Researcher Co-I on funding applications.	Number of staff by role that have applied for funding as Co-I, PI and Researcher Co-I (via KRISTAL, Je-S and the UKRI Funding Service).	Annually
Increase in the proportion of staff stating they have benefited from researcher development programmes, by career stage.	Number of staff engaging with self-guided resources and recorded presentations provided by Organisational Development and Professional Learning (OD&PL.)	Quarterly
As above	Number of staff attending development sessions provided by OD&PL.	Annually

The selection process and associated discussions demonstrated that there is no perfect metric, and it was important to consider the various factors in making this decision. Each metric involves a trade-off between data availability, representativeness, potential for gaming, and other concerns. However, the agreed metrics were SMART<sup>vi</sup>, adhered to SCOPE principles, and could be driven by a range of centralised and local research culture projects. A blog of the metrics workshop is available and has been shared as a case study on the INORMS webpages.<sup>vii</sup>

### **Limitations**

The extensive list of metrics reflected various aspects of research culture, but there are limitations and challenges in measuring each one. Through careful examination, some metrics were excluded or set aside due to several reasons.

Common reasons for exclusion are the metric not being well-established yet e.g., recording all instances of Positive Action initiatives across the University. The metric has, potential negative consequences e.g., measuring only attendance at researcher development programmes may promote attending a greater number but less relevant programmes. The complexities in data sources, and ambiguity regarding its impact on research culture e.g., multiple different platforms for openly sharing data/code. Or the ambiguity regarding the metric impact on research culture, where metrics have been excluded due to constraints with the current systems for recording and our ability to interrogate these sources, we will review as systems are upgraded, e.g., increased reporting of unprofessional behaviour. e.g., increased reporting of unprofessional behaviour.

While these may not be the definitive metrics for our strategic objectives, they serve as a starting point for our exploration and evaluation journey towards understanding and improving our research culture. The fifth step of the SCOPE process is to evaluate our evaluation and so we will monitor whether these metrics are enabling us to see the research culture changes

we are aiming for and adapt or expand the metrics where necessary and appropriate.

## **Discussion and Conclusion**

By combining top-down approaches in generating a comprehensive list of metrics and bottom-up methods during the workshop, we achieved a holistic approach and gained buy-in from representatives of the majority of the university's research community. This approach in defining research culture metrics was crucial in shaping a new and preferred research culture that encompasses both the behavioural and structural aspects of the research system.

The ultimate goal is to establish a research environment that promotes researchers' growth by creating an atmosphere free from risk and pressure where every member of the community is acknowledged for their contributions. The metric workshop encouraged a spirit of collaboration, enabling participants to offer valuable input and serve as critical supporters of each other's goals both of which were greatly appreciated by those in attendance. This feedback underscores the workshop's effectiveness in promoting a supportive and constructive setting for discussing research culture and in ensuring alignment with UoL values and research culture strategic objectives.

Simply put, we utilised our *research culture statement* to identify the metrics to measure changes in our research culture by taking an inclusive, equitable, open and supportive approach.

We are a few months out since the launch of our strategy (September 2023) and we have already witnessed a positive change in the research environment through the research communities increased enthusiasm for providing feedback and contributing to enhancing the Research Culture. We are running monthly pulse surveys to allow us to gauge changes in perspectives regarding our work and approach to enhancing research culture. This agile method is essential for steadily achieving our strategic objectives by integrating feedback into our action plan and adapting to the evolving needs of the research community (**Reed & Fazey, 2021**) This increase in engagement and enthusiasm alone are indicative of a positive change in research culture (**Casci & Adams, 2020**).

In conclusion, the SCOPE process and the metrics workshop proved to be a successful platform for evaluating and refining potential metrics for monitoring and assessing progress in research culture. The collaborative discussions, involving senior leaders and representatives from various research culture groups, resulted in the identification of a collection of effective, practical, and agreeable metrics.

Moving forward, we aim to further develop our approach to refine our methodology for evaluating research culture to ensure a comprehensive assessment that incorporates diverse viewpoints and experiences within our academic environment. Our commitment to inclusivity, equity, openness, and support will guide us as we strive to create a robust and meaningful framework for evaluating the research culture at our institution.

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Shareefa has over 20 years of experience working as a project manager and change management consultant in Public, Private and academic environments in the UK, the Middle East and North Africa. She is passionate about change and women's development and participation in the national economy, she has received several grants from international organisations to manage women's socio-economic development engagement projects.



Gaynor Miller has been Head of the new Researcher and Innovator Development Academy at Sheffield Hallam University since January 2024. Previously she worked as the Research Culture Manager at the University of Leeds and Life Science Researcher Development Manager at the University of Birmingham. She has over 30 years of research experience which includes working as a lecturer at the medical school at the University of Sheffield for 11 years.





Catherine Davies is the Dean for Research Culture at the University of Leeds. She leads the University in achieving an inclusive, equitable, open, and supportive research culture. In collaboration with a range of internal and external groups, her team develops initiatives to ensure that research operates with integrity, and in a way that allows all members of the research community to thrive. Catherine is also Professor of Language Development. Her projects investigate the interplay of children's home and educational environments. She is currently focusing on the effects of the COVID-19 lockdowns on language and cognitive development and collaborates with a range of government and practitioner stakeholders to apply research findings to policy and practice.



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## Appendix

\*Shortlisted metric probed at the metrics workshop.

### *SO1: Valuing diverse forms of research activity*

1. Increase in the proportion of the University's UKRI-funded research portfolio that generates non-standard outputs during the annual ResearchFish submission period. Non-standard outputs are defined as outputs other than journal articles and monographs.\*
2. Increase in the diversity of the types of research activities that are communicated and celebrated.\*
3. Increase in the proportion of staff who report actively contributing to initiatives to improve research culture. Contributions include Research Culture project Co-I, committee member, event organiser, adopter of RC initiative.\*
4. Internal funding/award schemes that recognise nonstandard outputs.
5. Naming of nonstandard outputs (outputs other journal articles, monographs) in successful grant applications.
6. Range of staff profiles included in grant applications (e.g. involvement of experimental officers, research associates and research professionals).
7. Collaborations with non-HEIs.
8. Use of CRediT.

9. Fully inclusive use of CRediT, i.e. making sure ALL contributions get recognised.
10. Engagement with Technician Commitment.
11. Implementation of initiatives to support research enablers.
12. Recognition of research culture work in promotion materials.
13. Recognition of research culture work in recruitment materials.
14. Uptake of recruitment and promotion panel training for recognition of research culture practices.
15. Use of narrative CVs in internal processes.
16. Uptake of responsible metrics training.

*SO2: Embedding EDI principles in research practices*

1. Increase in the proportion of academic promotions to Grades 9 and 10 of colleagues with protected characteristics that have previously been under-represented, e.g. women, colleagues with disabilities, and those who have been racially minoritised.\*
2. Increase in the proportion of external funding applications submitted (PI and Col) by colleagues with protected characteristics that have previously been under-represented, e.g. women, colleagues with disabilities, and those who have been racially minoritised. \*
3. Increase in the proportion of external funding applications awarded (PI and Col) to colleagues with protected characteristics that have previously been under-represented, e.g. women, colleagues with disabilities, and those who have been racially minoritised.\*
4. Increase in the proportion of internal funding applications submitted (PI and Col in e.g. IAA, Policy Fund, seed-corn funding) by colleagues with protected characteristics that have previously been under-represented, e.g. women, colleagues with disabilities, and those who have been racially minoritised.\*
5. Increase in the proportion of internal funding applications awarded (PI and Col in e.g. IAA, Policy Fund, seed-corn funding) to colleagues with protected characteristics that have previously been under-represented, e.g. women, colleagues with disabilities, and those who have been racially minoritised.\*
6. Number of Positive Action initiatives used in recruitment to research positions.

7. Number of Positive Action initiatives in internal research funding schemes.
8. Number of promotions that are awarded where some EDI activity has been flagged.
9. Number of examples or projects using inclusive research delivery and design.
10. Number of examples of engagement with the decolonising research framework.
11. Number of examples of EDI engagement by senior leaders.

*SO3: Enabling open research practices*

1. Increase in the proportion of staff that are aware of Open Research (OR) and how it relates to their own discipline.\*
2. Increase in the proportion of staff engaging with OR practices.\*
3. Increase in the proportion of staff engaging with OR training &/or events.\*
4. Provision of OR training (staff, all student type).
5. Uptake of OR training (staff, all student type).
6. Recognition of OR in HR/career processes (recruitment, probation, promotion, AAM).
7. OR commitment explicit in institutional/Faculty strategy/policy.
8. Institutional resourcing model enables OR.
9. Outputs shared with no restrictions on access.
10. Pre-registration of protocols.
11. Increase in the number of pre-prints posted per researcher.
12. Use of the Rights Retention route to open access.
13. Sharing of research tools/hardware/software.
14. Open practice extending beyond funder mandates.
15. Open peer review.
16. Participation in Citizen Science initiatives.
17. Membership of open research communities of practice (CoP) (e.g., KEN/UKRN/OSN, UKCoRR).
18. Impact of membership of OR Communities of Practice.

19. Positive disruption in scholarly communication landscape (engaging with different practices and platforms e.g., Octopus).
20. Re-use of OR outputs (instances of data, code re-use).
21. Support and monitoring of engagement with CRediT.
22. Fully inclusive use of CRediT.
23. Data on current collaboration practice e.g. from SciVal.
24. Increased local and wider collaboration on applications and publications, which may include a measure around cross-disciplinary/diverse collaboration.
25. Recognition of open research in recruitment materials.
26. Engagement with open research practices (e.g. numbers and diversity of colleagues using open resources in the research lifecycle, e.g. platforms, Octopus, co-production).
27. Provision of OR infrastructure.
28. Accessibility - can people read our research, and does it make sense?
29. Proportion of research outputs published open access – in articles, data, software, monographs, and other outputs.

*SO4: Mutually supporting and developing research teams*

1. Increase in the proportion of staff taking part in researcher development programmes, by career stage.\*
2. Increase in the proportion of staff who have held both a PI and Co-I role, compared to those who have only been a PI or Co-I (over a rolling five-year period to avoid fluctuations).\*
3. Increase in the range of staff profiles included in grant applications (e.g., involvement of experimental officers, research associates and research professionals).\*
4. Numbers of bullying and harassment complaints, referrals, or disclosures.\*
5. Increase in the proportion of staff on FTC that have accessed redeployment.\*
6. Participation in researcher development programmes, by career stage.
7. Alignment with the Researcher Development Concordat.
8. Uptake of career coaching.
9. Impact of career coaching.

10. Uptake of mentoring schemes.
  11. Impact of mentoring schemes.
  12. Mentor vs Mentee ratio.
  13. Matched vs unmatched requests.
  14. Areas of mentoring requested e.g. careers.
  15. Diversity of roles that individuals take on, i.e. pathways from Col to PI to senior leader.
  16. Proportion of bids where PIs are at different career stages – building research leadership capability.
  17. Pump priming of research teams – internal resources to help build capabilities.
  18. Wellbeing: Audit of provision available and levels of engagement. Some of this is done via OD&PL.
  19. Average workload for researchers.
  20. Use of workload models / support for flexible working.
  21. Workload measures and the balance between teaching, research, and other allocations.
  22. Use of codes of conduct.
  23. Bullying and harassment data, numbers of complaints, referrals or disclosures.
  24. Number of referrals to workplace mediation service.
  25. Requests for support from PGRs to LUU.
  26. Effectiveness of redeployment / numbers of FTCs.
  27. Number of researchers currently on redeployment.
  28. Number of researchers on Fixed-term contracts.
  29. Average contract length.
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**Endnotes**

<sup>i</sup> Information about the REF can be found at: <https://ref.ac.uk>.

<sup>ii</sup> The Research Culture Statement is available online: <https://www.leeds.ac.uk/research-and-innovation/doc/research-culture-statement>.

<sup>iii</sup> S stands for START with what you value, C for CONTEXT considerations, O for OPTIONS for evaluating, P for PROBE deeply, and E for EVALUATE your evaluation. There is more on it in (INORMS, 2023) and at: <https://inorms.net/scope-framework-for-research-evaluation/>.

<sup>iv</sup> The San Francisco Declaration on Research Assessment. See: <https://sfedora.org/>.

<sup>v</sup> The Centre for Facilitation website can be found at: <https://centreforfacilitation.co.uk>.

<sup>vi</sup> An acronym for Specific, Measurable, Assignable, Realistic, and Time-bound.

<sup>vii</sup> Access the metrics workshop at: <https://sway.cloud.microsoft/TKBsP05v1E1VOLaN>; or as a case study here: <https://inorms.net/scope-framework-for-research-evaluation/>.



# Working Towards an Inclusive Research Culture Through EDI Education, Engagement and Empowerment of the Research Community

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## Abstract

*This paper provides critical reflection on work and progress to embed EDI in our research and innovation workforce, practice and culture at the University of Manchester. Our university aim is to take an intersectional and holistic approach to educate, engage, empower and support our staff and student community at all levels to prioritise EDI. To embed EDI in research and promote collective responsibility to help shape a fairer, inclusive research culture the University launched the 'Inclusive Research Transformation Programme'. This programme included developing inclusive research mindsets and building inclusive leadership capacity (from UG to senior research leader); a University EDI award scheme which catalysed innovative local and national researcher led EDI initiatives; and targeted funding schemes to help address gender, ethnicity, and disability inequities within our research career pipeline. Three schemes were developed, an UG EDI summer placement scheme, an early career research staff EDI fellowship underpinned by inclusive advocacy and an established academic returners scheme.*

**Keywords:** active-bystander; equality, diversity, and inclusion; inclusive leadership; intersectionality.

## **Introduction and Aim**

Equality, Diversity and Inclusion is a strategic priority for most Higher Education Institutions including the University of Manchester (2020). It is increasingly seen as integral to HE success with growing sector wide recognition that EDI underpins an open, responsible and positive research culture. In line with research funder strategy developments, we are prioritising the creation of a ‘world class research and innovation system “by everyone and for everyone”’ (UK Research and Innovation, 2023).

The University of Manchester has a growing understanding of the EDI demographic profile and experiences of our researcher community. This has predominantly focused on the progression of gender and ethnicity equality through our equality charter marks<sup>i</sup> (Advance HE Athena Swan Gender Equality and Race Equality Charter, currently awarded 2 institutional silver awards). The university is also supporting early career research staff careers through our comprehensive researcher development and HR Excellence in Research actions (award held since 2009). More recently as a ‘Disability Confident Leader’ employer we have prioritised disability data monitoring and for the first time published our gender, ethnicity, disability, sexual orientation and religion pay gaps (University of Manchester, 2024).

Sex, ethnicity and disability analysis of our university student and academic staff profile shows the characteristic ‘leaky pipeline’ (Goulden et al., 2011). In all disciplines representation of academics who identify as female, ethnic minority or disabled at the highest professorial level is lower than at early career researcher (ECR postdoc and PhD) level; which is in turn lower than the diversity of our undergraduate (UG) population (University of Manchester, 2023). We currently lack comprehensive pipeline data beyond binary sex, for other protected characteristics such as sexual orientation or for related factors associated with disadvantage e.g., socio-economic background. The loss of diverse talent we experience is reflected throughout academia resulting in a UK professoriate that is 69.7% male and 89.6% White (Advance HE, 2023).

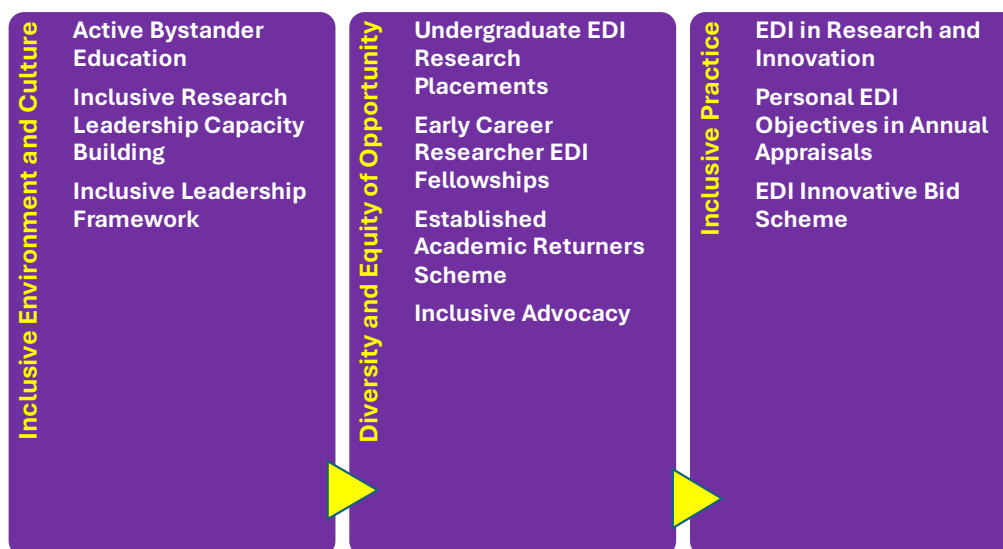
Grogan argues that this is not a passive leakage from the research pipeline but the result of systemic biases and barriers within research practice and culture that prevent diverse talent entering and progressing in the sector (Grogan, 2018). This could be through a combination of unequal recruitment and retention, higher barriers to develop as a research leader and slower career progression. Analysis of data throughout our pipeline is helping us pinpoint where the most significant talent ‘leaks’ are and simultaneously target interventions to increase EDI demographic diversity at each career stage and provide tailored support for disadvantaged researchers. We are also working to understand and ‘fix the leaks’, address

systemic barriers, create equity of opportunity and a positive and inclusive culture. Known inequities highlighted by our data include females applying for and receiving lower grant funding levels and ethnic minorities experiencing lower success rate. Gender disparities are corroborated by national funding distribution data (NIHR, 2022; UK Research and Innovation, 2021). Other key marks of esteem such as representation on decision-making bodies and research committees also show that females and ethnic minorities are under-represented. Analysis of the experiences of our researchers shows that female researchers perceive lower levels of recognition for their work and female, ethnic minority and disabled staff are significantly more likely to report experiencing discrimination, bullying and harassment. There is limited quantitative data and understanding of the leaky pipeline faced by people who are non-binary, however, qualitative data from our University Staff Survey 2022 showed that staff stating 'Other Gender Identity' perceive significantly lower levels of recognition and value for the work and were more than twice as likely to state they had experienced bullying or harassment at work (data not shown).

The University recognises the need to elevate our approach and shift focus from individual protected characteristics to addressing the intersectional and systemic inequalities experienced by our research community. Therefore, in early 2021 we launched a two year 'Inclusive research transformation programme' allowing us to build on existing EDI successes and establish new initiatives aligned to our three EDI strategic priority areas (Figure 1).

Figure 1: Overview of Inclusive Research Transformation Programme activity aligned to the University of Manchester's three EDI priority areas.

## Inclusive Research Transformation Programme



This paper takes a reflective perspective documenting progress and challenges of implementing our system-wide, co-created, EDI approach. Our aim was to initiate local and centrally delivered activity to engage as many people as possible and begin to work towards collective action and personal accountability for EDI progress across a large research-intensive University.

### **Definition of Terms**

For clarity and to avoid misinterpretation across an international, interdisciplinary readership key terminology has been defined:

*Equality:* Ensuring that every individual has an equal opportunity to make the most of their lives and talents.

*Diversity:* The practice of including people from all protected groups and different social backgrounds that are associated with disadvantage in study, work of society.

*Inclusion:* The culture in which people can work, study or live and feel comfortable and confident to be themselves and to be able to fully contribute.

*Equity:* A system of justice and fairness, where the individual needs and requirements of each person is taken into account and treated accordingly

*Intersectionality:* The interconnected nature of social categorisations such as gender, race and socio-economic status, as they apply to a given individual or group, regarded as creating overlapping and interdependent systems of discrimination or disadvantage.

*Myth of Meritocracy:* The belief that we work or study in organisations where individuals that work hard will be rewarded, whilst those who do not, will not be rewarded.

### **Building Inclusive Researcher and Leadership Capacity**

From the point of entry to our university, as an UG or as a senior academic leader, our aim is to enhance EDI knowledge, skills and attributes and develop people as inclusive leaders. This strategic priority is fundamental to ensuring fair and effective study, work, and research with as wide a societal impact as possible.

#### *Embedding EDI education and inclusive leadership in our student curriculum*

The University commissioned a credit bearing, interdisciplinary, UG unit 'EDI: Your role in Shaping a Fairer World'. The unit was co-created with UG and postgraduate (PG) students, the EDI Directorate and equalities research experts across the University and launched in February 2021. The

unit includes modules on EDI in research and innovation, health and social care, education, the workplace, and gives a historical and global perspective of EDI history and legislative development. The fully flexible, online unit promotes extensive self-reflection and peer discussion. Learners share culturally diverse perspectives and experiences; confront personal values, beliefs and codes of behaviour leading to bias and discrimination; and consider privilege, dominance, and power and how this contributes to ongoing individual, organisational and systemic inequalities. Over 400 students have completed the full unit. A unit taster is available to all students and staff and sent to all University offer holders. This signals the importance and value of EDI to all prospective and current students and staff. Example second year UG student feedback highlights learning and inclusive leadership development through the unit:

*I believe that if we apply the mind-set represented throughout these modules, we can make any environment more inclusive, diverse and equal. (Student Feedback)*

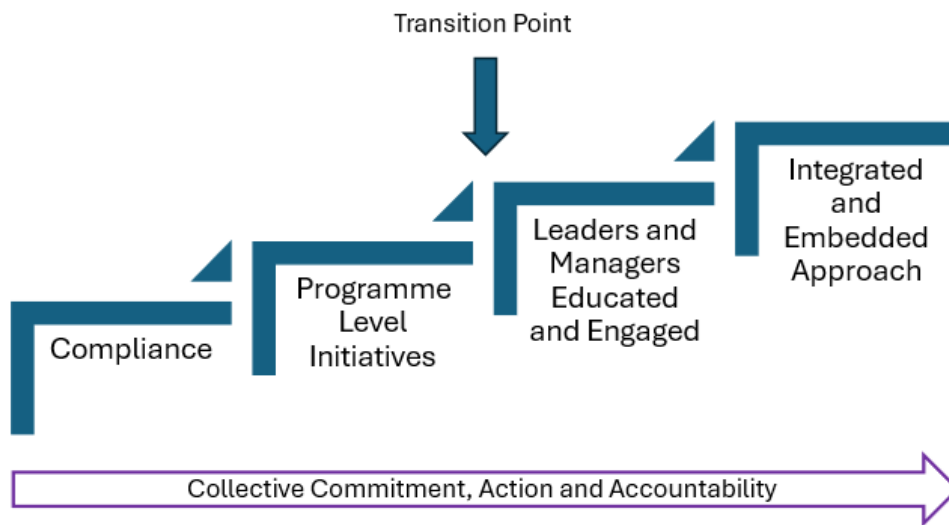
Importantly, the unit introduces the concept of being an ‘active bystander’ (Fenton et al., 2016), emphasises our zero tolerance of all forms of bullying, harassment and discrimination and raises visibility of our confidential report and support system. This empowers students and supports them to be personally accountable and safely act, calling out behaviours that erode an inclusive culture.

*Embedding EDI education and inclusive leadership in our organisational development offering*

We know we have much more to do to engage, educate and support researchers at all levels to take responsibility and collective action towards an inclusive culture. Self-assessment against our EDI strategic priorities, research staff concordat and charter mark action plans show that we are going beyond compliance and making progress through programme level initiatives. Following the Deloitte Diversity and Inclusion Maturity Model of Inclusive Organisations (Bourke, 2018) (Figure 2, adapted model) we are working hard to move past this transition point to harness the inclusive leadership capacity of all of our leaders and managers.

Figure 2: Pathway to a fully inclusive organisation. Adapted from (Bourke, 2018)

## Pathway to an Inclusive Organisation



Leader led inclusion has been shown to improve diversity, increase team performance, decision making and collaboration. The university learning and organisational development function created a leadership framework co-developed with participants (professional services and academic middle managers) on our in-house leadership and management programme. Nine key attributes were identified including role model for inclusion (**Figure 3**).

Figure 3: University of Manchester Leadership Framework.

## University Leadership Framework



The framework was launched alongside an associated self-assessment online tool in 2021 and has been tested with leaders at all levels and in all areas. The framework is now available to all staff to inform their personal development and growth. It is used within leadership development programmes for new academics and fellows. Integrated into annual appraisal processes for leaders and managers the framework helps assess inclusive leadership capacity and the setting of personal EDI objectives. Measurement of engagement and impact on our culture is still to be assessed. Through our biannual University Staff Survey 2022 we have been able to capture baseline culture data against which changes can be measured.

### **Catalysing Inclusive Practice and Culture Change Through Our Innovative EDI Bid Scheme**

Adapting good practice from the Manchester Advanced Biomaterials Centre for Doctoral Training, the University of Manchester was able to harness the creativity of our research community through a university wide innovative EDI bid scheme. Open to researchers at all levels we welcomed new ideas, activity and research that supported, celebrated, or promoted diverse researcher success and inclusive research practice and culture change. Through a rolling 12-month call we funded 13 projects (from £1.5K – £5K funding per opportunity). Projects were led by PhD students through to senior academics and collectively engaged, empowered, and educated >1000+ researchers through a range of team, discipline, department, and University level events. We also funded preliminary research to inform institutional policy developments (breast feeding and shared parental leave) and a national level EDI event celebrating and supporting UK postdoctoral researchers. Project leads provided 6-month post evaluation of impacts, all citing how valuable the scheme has been. ECRs gained experience of internal award application and success, project execution and reporting. One project lead won a national postdoc conference EDI award. Legacy resources were created helping embed EDI in researcher and academic development. Inclusive research blog posts and inclusive methods were developed. University support has been secured to progress policy development and evaluate the longer-term impact of the scheme. School and Faculty funding has been committed to continue initiatives e.g., annual women's writing retreat in the School of Engineering. The EDI bid scheme also sparked local EDI funding competitions within research groups and divisions/departments helping extend the life of the scheme.

## **Creating Equity of Opportunity at Key Transition Points in the R&I Career Pipeline**

We invested in three personal funding initiatives at the UG, early career contract researcher and early/mid tenured academic career stage. This was in response to persistent barriers in accessing higher research degrees, difficulty in subsequently sustaining academic research careers and the under-representation of people from protected groups at senior academic research level.

### *Establishing undergraduate EDI research placements*

We offered UG placement opportunities to late stage UG students from under-represented protected groups as defined by the Equality Act 2010 (**Act, 2010**). We modelled the process used for summer research placements offered through our university careers service for students from widening participation (WP) backgrounds. We recruited EDI research placement students through an open call including a positive action statement highlighting under-representation. Demand exceeded expectations (9.1% success rate) with 20 students supported annually. EDI data showed a 79%:21% female:male split, 37% ethnic minority, 16% disabled, 55% first in family at university and/or from a low socioeconomic background. All received funding for 2-month full-time research projects (with online and face-to-face options offered). Benefits cited included gaining valuable insights into contemporary, cross disciplinary research fields; developing research methods, technical, analytical and transferable skills (teamwork, confidence, communication skills); and exploring the research work and careers of academics. Perhaps most crucially, 76% reported increased access to new academic networks of support; people who could demystify academic research processes and expectations for academic career success; senior career mentorship providing the cultural capital which people from under-represented groups may lack (**O'Connor et al., 2020**).

Short term evaluation showed 100% supervisor and student satisfaction. Tangible outputs included generation of literature reviews, publishable results, report and blog writing, conference organisation and participation in international collaborative research. 85% of students expressed a desire to pursue PG research. Example UG EDI placement student feedback emphasises the impact and influence of the experience on future career choices:



*More confident to go towards my master's and PhD plan, conducting research in a captivating field [...] More knowledgeable and informed about the opportunities in industry and academia [...] It is worth pursuing a career in research [...] a unique opportunity to gain insight into the field and make connections. (Student Feedback)*

Supervisor and student suggestions to enhance the EDI placement offer included increasing placement numbers; extending placement duration and offering on a part-time basis; and bringing placement students together to share cohort experiences and engage in research careers training. It was also challenging to effectively communicate the scheme across our large, dispersed organisation (31,275 UG students, 5190 academic and research staff, July 2023 data) although placements were taken up in all Faculties.

We are now working with the careers service to bring best practice and learning from UG EDI research placements and WP research internships together. We will evaluate the long-term career impact and consider how we can strategically link UG research internships with targeted Masters Scholarships and PhD studentships. Encouragingly, we are also seeing UG EDI research placements included within research capacity building and centre grant applications and renewals.

#### *Establishing early career researcher EDI fellowships*

This initiative was developed to acknowledge and begin to address the sector-wide need to do more to support early career researchers (ECRs). ECRs are predominantly on fixed-term contracts, or open-ended contracts linked to finite funding, of varying length but often of too short a duration. The scheme aimed to help under-represented ECRs build a portfolio of academic achievement. Including independent research that would allow them to make the transition into a personal fellowship or tenure track academic position. We are making concerted efforts to support ECRs (strategically led through our Research Staff Concordat/HR Excellence in Research Award/Action plan). Our ECR community is drawn from an international talent pool and as such is relatively diverse (56% female, 33% Ethnic minority, 16% state a disability). The university provides comprehensive researcher development and careers support for ECRs pursuing broad research careers within and outside academia; provides support for internal and external independent fellowships through our fellowship academy but we wanted to supplement this with a scheme that harnesses the diversity of our ECR talent. Therefore, we established a new EDI 'Perera' fellowship scheme, honouring Prof Katharine Perera, our former Pro Vice-Chancellor and first Athena Swan gender equality lead. We adopted the same inclusive recruitment approach as for placements with an open call for people from all protected groups. Additionally, we

used the narrative CV format adopted by UKRI to allow applicants to showcase broad academic contributions (**UK Research and Innovation, 2024**).

We supported seven, diverse, talented, ECR staff (5 female, 2 male, 71% ethnic minority, disability status not captured). All awardees had been significantly impacted by COVID-19, either by being redirected to COVID response research or clinical practice, and/or having caring responsibilities during the pandemic (43%). All had non-traditional career paths and were recruited on merit. The fellowship aimed to allow awardees to develop their independent research ideas and profile. Recognising the 'myth of meritocracy' that exists in the sector, which makes it more difficult for researchers from under-represented groups to gain recognition for their work and access networks of support, we paired all fellows with a senior research leader who acted as a career advocate. With constraints on funding duration, we were able to provide salary and consumables for only 1 year.

However, the early impact has been considerable including increased social media presence, invited talks/visiting professorship, publication success, team building, PGR supervision, PI/line management experience, leadership opportunities and fellowship/grant bid submission and success. Early success of the EDI Perera Fellow award is exemplified through qualitative feedback from an awardee:

*I finished a successful PhD and Postdoc ... and was able to patent two ... products .... After the birth of my second daughter, I had to take a break to help her with her special educational needs. The fellowship enabled me to resume my research and publications and was the first step towards my independent career' and 'I truly believe that I couldn't obtain this new fellowship without having the EDI fellowship, the EDI-Advocacy programme and your support. (Awardee Feedback)*

#### *Embedding an established academic returners scheme*

Our final award scheme aimed to support established academic researchers whose career trajectory was impacted by taking an extended career break of 6 months or more. Open to all teaching and research academics taking a break for any reason e.g., maternity, paternity, adoption, caring, sick leave. The academic returner's scheme provided backfill of salary or research assistant support for a semester plus additional research consumables or funding for career profile raising activity upon return to work. Longitudinal (12-18 month) evaluation of 18 academics (100% female, 11% ethnic minority, disability data not captured) showed extensive personal benefits and research impact. This included securing internal seed corn funding; execution of pilot fieldwork

and establishing new collaborations; grant and fellowship success; publishing papers, book chapters, first monographs; attending and hosting conferences; smoother return to work than previous leave; increased productivity, wellbeing and cover of additional caring costs incurred because of profile-raising activity.

Academic returners feedback shows the impact of the scheme:

*Best thing that has happened to me in the Uni [and] hugely beneficial to me... I have been able to submit one internal and three small external research grants, one Advance HE Good Practice grant and have another larger grant in progress. I'm delighted to say my applications this year have been successful... These are my first wins after two years and my maternity leave and they are a huge boost to my confidence and hopefully the longevity of my research career. (Researcher Feedback)*

This scheme is now part of our core package of benefits for academics across the University on both teaching and scholarship and teaching and research pathways.

### **What Have We Learned?**

There is widespread EDI interest and commitment across our research community with researchers at all levels coming forward to innovate and advocate for EDI in research. We have been able to establish new initiatives and take good practice activities that were happening in pockets across our institution and make them available across the University with relatively modest investment. The research and career impact of relatively short-term personal awards (from 3 months to 1 year) has exceeded our expectations and further re-enforces the need for equity of opportunity and advocacy for 'hidden talent' in our current system and culture.

Positive action statements highlighting sustained under-representation in research careers, and communication of the rationale for targeted development opportunities, have been effective in increasing the diversity of researchers in the applicant pool and awardees. Aligning inclusive research transformation work with our EDI strategy has been essential to facilitate the cascade of

activity and allow us to monitor progress through our University EDI governance and accountability cycle. Where possible we have built in evaluation of impact using evidence of success to embed initiatives as standard across the University.

## **Challenges and Future Development**

Beyond sex, race and disability we do not have comprehensive diversity data for other protected characteristics and associated factors such as socio-economic status, parental and caring responsibilities that are known to impact research and academic careers (**Morgan et al., 2021**). Legislation, cross-funder or cross-sector mandates or consensus on what comprehensive diversity data should be collected would be helpful, as would expanded EDI data gathering at the national level e.g., by HESA.

We have taken positive, rather than affirmative, action to promote diversity and equity of opportunity and have been mindful of the legal and ethical challenges that can arise. Especially when there is a lack of specific data demonstrating a clear problem for a particular protected group. We regularly review and assess the impact of positive action in line with our institutional positive action statement and agreed approach. When data becomes available over time, we will use this approach to refine and justify the continued need for such measures.

It has been challenging to secure ongoing funding for initiatives where we have shown short term positive benefits but where the evidence of longer-term impact has yet to be completed. This is creating a lag and preventing us from being able to offer all opportunities on a rolling or annual basis. We are aware that this could create frustration amongst researchers, and particular those who are early career and on fixed term contract, so may never personally engage with, or benefit from equitable support.

Work is ongoing to ensure strategic alignment of EDI strategy and research strategy which should help counter ongoing perceptions that EDI is 'a nice to have' and the work of EDI champions and EDI Directorate. This alignment may be helped by the increasing focus on research culture across the sector. New funding streams are being made available to the sector to support investment in positive culture change. New leadership and operational research culture roles are being created and may be an opportunity to sustain and fully embed EDI in research work. Researchers are more likely to be incentivised and rewarded within the current system and culture to progress EDI under the auspices of research culture work. By pivoting towards research culture more researchers including those resistant or ambivalent to the EDI rationale may also be engaged. However, given the broad, undefined scope of research culture work this could also result in duplication of activity or the sector pivoting away from EDI and solely focusing on other aspects of research culture. It is imperative that we continue to call out inequalities in research workforce, practice and culture and guard against any dilution of EDI in research progress.

Although we faced challenges to engage and communicate with our large staff and student community, we recognise the advantages that size brings. As a research-intensive institution with established central EDI, researcher development and research and business engagement infrastructure and teams we acknowledge advantages we may have compared to other institutions. Where possible we are collaborating through researcher development, research culture and EDI networks to share resources. We must acknowledge, reward, and celebrate any gains made no matter how hard won, or slow we feel the progress we are making. Creating truly inclusive mind-sets and culture throughout an organisation will take time and concerted action from all key stakeholders in the research and innovation ecosystem is needed.

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## Acknowledgments

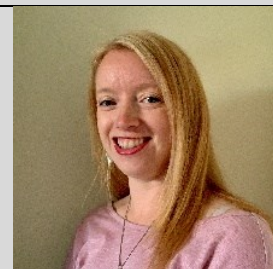
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Diane Harris is a senior lecturer in education and senior research fellow at the University of Manchester. She is passionate about advancing women and girls in STEM fields. Her dedication led to a 'Making a Difference Award' from the University in May 2023 for her impactful work with women in higher education in India and Brazil. Committed to gender equality, she develops transformative initiatives to empower women academically and professionally in STEM disciplines. Diane's advocacy continues to make a positive impact in the field of education, leaving a lasting legacy of empowerment and opportunity for women in STEM.



Michael Dixon undertakes his research in craniofacial biology. Among other conditions, Michael identified the mutations underlying Teacher Collins syndrome, Van der Woude syndrome, and popliteal pterygium disorders, as a result molecular testing for these conditions is available as an NHS service.



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## Endnotes

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<sup>i</sup> Advance HE Athena Swan and Race Equality Charter Marks are international frameworks used to support and transform gender and race equality respectively within Higher Education and Research.

# Empowering a Global Community Through Co-Production of a Connected University Research Culture

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## Abstract

*Heriot-Watt University (HWU) is a global university with five academic Schools connected across five campuses. To foster a vibrant and inclusive research culture across the global research community, HWU has invested time and resource to strategically improve research culture, building on current strengths, while addressing cultural challenges faced by the research community. We have engaged all members of the community through a lengthy consultation and co-design process to co-produce a global action plan. The global community has a forward looking, unconstrained and ambitious future vision of what an ideal research culture at HWU should look like, and there are gaps between that vision and the diagnostic of perceptions of the 'as-is' culture. The action plan will drive forward an active strategy for supporting the research community. This paper gives an overview of the action plan development process using Lippitt and Knoster's Model of Complex Change as a framework, sharing the key themes that emerged from consultations, plans for moving ahead, reflections on the successes and challenges, with a focus on how to foster research culture and connect a global university.*

**Keywords:** global university; research culture; inclusive culture; consultation; co-design; co-production

## Introduction

Like many other universities in the UK context, Heriot-Watt University recognises that ‘research culture is a crucial cornerstone of research excellence’ (Whalley & Rowe, 2024) as there is evidence to show a significant relationship between research culture and research outcomes (González-Díaz et al., 2022).

Research culture (RC) is a complex and multi-layered eco-system that ‘encompasses the behaviours, values, expectations, attitudes and the norms of our research communities’ (Royal Society, 2024). RC cannot be done *to* people; it cannot be changed from the top-down. Systems and structures and support mechanisms need to be changed so that people engage and participate so behaviours and norms shift, and this is what leads to culture change *by* people (Lippitt, 1987). Thus, in order to engage people in behavioural change an inclusive RC needs to be one that is: bottom-up; empowering; nurturing; values all contributions; and provides formal and informal opportunities to discuss research. To foster a vibrant RC across our campuses, five academic Schools, professional partners and career stages, in 2022 Heriot-Watt University (HWU) made a strategic decision to invest resource in developing a focused strategy around RC.

One of HWU’s unique selling points is the interface between RC and the strong enterprise culture in the university, so our goal is to foster a vibrant, inclusive and *enterprising* RC. An enterprising university is one which embraces creative innovation, entrepreneurship, and industry engagement that leads to tangible impact on society and the economy, while fostering a strong culture of research, teaching, and learning. Given the profile of HWU as a globally connected university with a strong interdisciplinary and entrepreneurial outlook, the focus is on aligning our RC work with the HWU Enterprise Team in fostering and promoting an *enterprising* RC, as the ethos is that all members of the research community could be identifying opportunities to foster and contribute to a vibrant RC.

This paper therefore gives an overview of our work to date, key themes that emerged from the consultations, and plans for moving ahead, with a focus on how to connect a global university. We have structured the paper and the description of the process using a framework that follows three themes: The Map, The Model, The Territory (Korzybski, 1933). Recognising that the map can never represent the reality of the territory (Dalcher, 2018), it can nonetheless form a useful starting point to reflect on the geographical and cultural complexity underpinning a thriving RC enacted by a community that spans the globe. Two key models were used to bridge from geography to action: first, a thematic examination centred on five common components of academic research, and the second viewed the

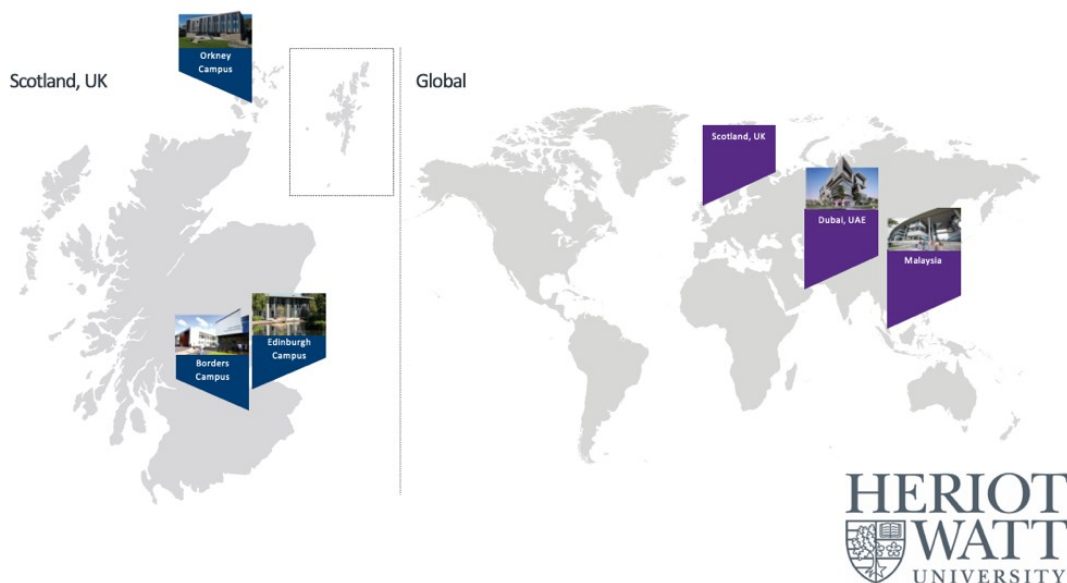
process of achieving our global community's vision of an enterprising RC through the lens of complex change.

Change projects are located within a worldview and theoretical frame. Lippitt's framework for managing complex change (Lippitt, 1987) modified by Knoster (1991) is frequently cited. This model identifies six conditions for achieving sustainable change: (i) vision, (ii) consensus, (iii) skills, (iv) incentives, (v) resources, (vi) action plan. Now often referred to as the 'Lippitt-Knoster Model for Managing Complex Change' (Luhring, 2022), the model presents a framework for identifying risk if the six conditions are not met. We recognise that change is more complex than this, but an awareness of such conditions can be helpful in planning and facilitating culture change in a globally connected university. As such, a participative co-production approach was adopted to build trust, transparency and commitment to engage in sustained culture change at HWU. Our systemic approach of co-production referencing Lippitt and Knoster's Model has helped to keep the difference and complexity of all the campuses and locations in view, whilst offering a practical way to navigate through and guide resources and actors.

### **The Map: A Flourishing and Purposeful Globally Connected University Community**

In order to contextualise the nature of our globally connected university it is worth presenting a map of our university locations, our governance and strategy. HWU is a global university with five academic Schools that have research capabilities<sup>1</sup> connected across five campuses: three in Scotland (Edinburgh, Galashiels, Orkney), one in Malaysia and one in Dubai, as illustrated in **Figure 1**.

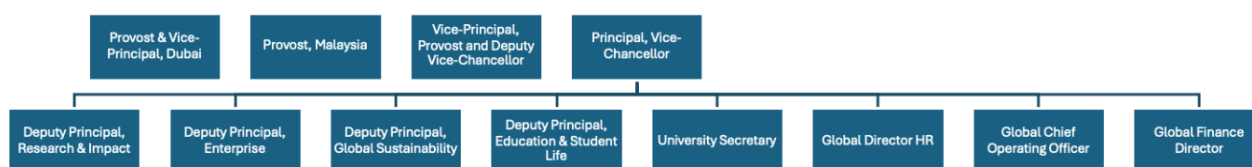
*Figure 1: Map of HWU locations (Image © HWU, 2024 and included with permission)*



A global university linked by common values across different geographies, HWU occupies a rare position from which to explore RC as we can draw on the different strengths of each campus across all locations and countries. Every campus (and person, research group etc.) starts from a different place, so we have engaged all members of the community (see **Appendix**) through a one-year process of consultation, including surveys, focus groups and co-design workshops, to co-produce a global action plan. HWU considers that the research community includes: core academic staff; postdoctoral researchers; research assistants; postgraduate research students; research/lab technicians; and research and engagement support professional partners.

The university executive is HWU’s primary decision-making body that includes senior level representation from all three countries (see **Figure 2**). The university has a clear research and operational governance structure in place, with various committees and working groups focused on delivering the university strategy. HWU’s Strategy 2025 (HWU, 2019) has four strategic themes: (1) building flourishing communities; (2) pioneering in education, (3) excelling in research and enterprise; and (4) being a global, connected university. In addition to the challenge of recovery after the Covid-19 pandemic, one of the key challenges faced by the university in delivering the research strategy is the uneven distribution of research excellence across the three country campuses, with the lion’s share of research activity being located on the Edinburgh campus; primarily due to the fact that the research funding landscape is very different in the UK and more government funding is available. Although this is a challenge in traditional research funding terms, a multi-country-campus university presents opportunities for research entrepreneurship as there are many other pathways to research funding through industrial/business partnerships in Dubai and Malaysia.

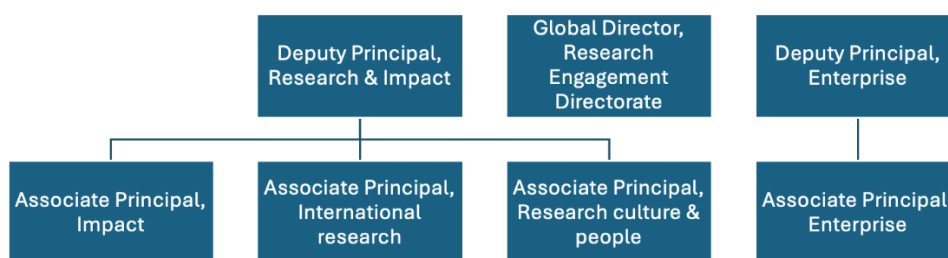
*Figure 2: HWU Governance Structure*



In terms of RC management, in 2022 the new post of Associate Principal of Research Culture & People (AP-RCP) at HWU was created to provide leadership focus on improving RC, building on current strengths, while addressing cultural challenges faced by researchers. These include, but are not limited to, equality of opportunity, personal wellbeing, inclusivity, and career fulfilment. Reporting to the Deputy Principal for Research and Impact, and working closely with the Global Director of Research

Engagement, the AP-RCP works in a team alongside three other Associate Principals (see **Figure 3**). The post originated from recognition that visible academic leadership was needed; to scale up the capacity of the Deputy Principals; to signal the importance of culture and people to achieving the ambitions of Strategy 2025 (HWU, 2019); and drive forward not only the research excellence strategy but also ensure that RC is embedded in strategic themes to build flourishing communities and to being a global, connected university.

*Figure 3: Research Culture Management Team Structure*



Also, the role of the AP-RCP, in collaboration with a newly established post of Researcher Development Consultant for Research Culture, is to support the newly formed Research Culture Working Group (as a working group of the Global Operations Executive), which brings together senior professional partners and academics to work in partnership. The Working Group has the remit and mandate to open out/extend whose voices are heard, and who can influence and direct change; and undertake work to help fulfil the ambition of creating a more positive and inclusive working culture for our research community within which excellent and impactful research can take place and a vibrant and inspiring RC can be experienced by all our researchers in our globally connected university across all campuses.

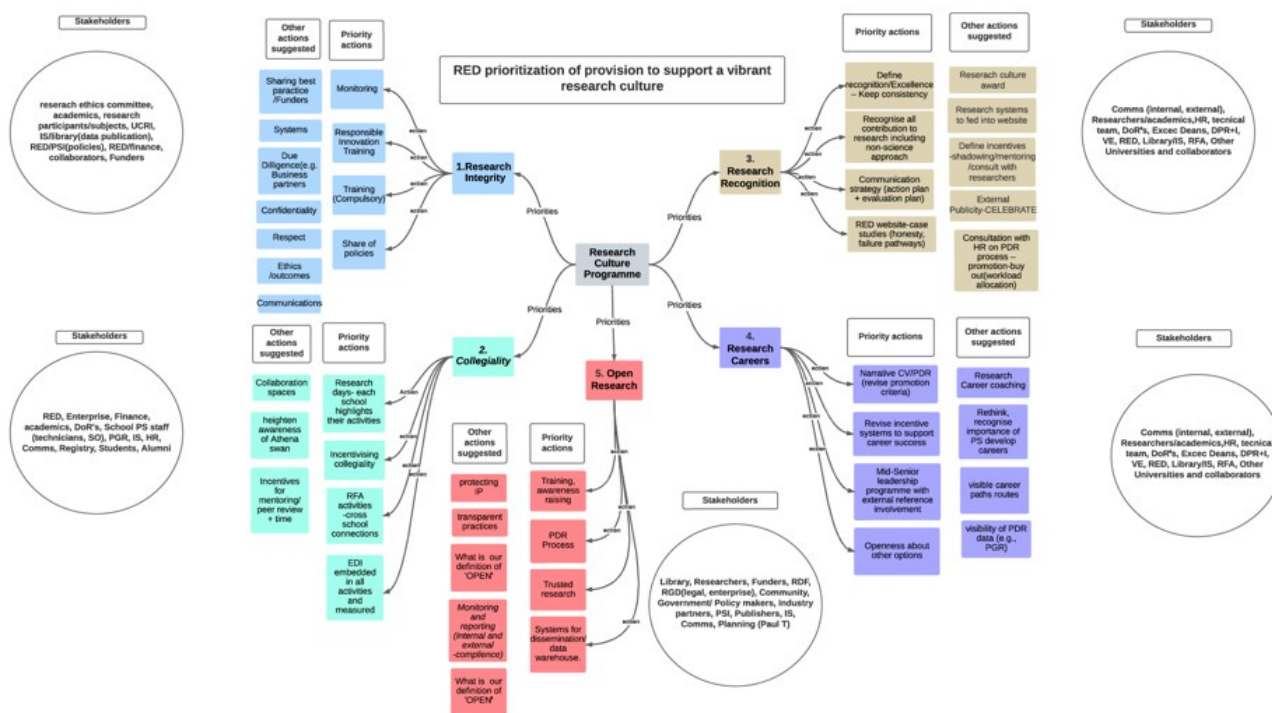
The mapping of RC structures at HWU is helpful in enabling decisions and facilitating forward movement and progress, even in challenging contexts: ‘The process of mapping, as opposed to blindly following a map, enables reasoning and adjustments to emerge so that corrections can facilitate improved performance and a more purposeful journey’ (Dalcher, 2018: 1). Before the full RC structure was established, the Global Director of the Research Engagement Directorate (RED) led the initiative to developing an initial model to take the RC work forward. RED encompasses four divisions with professional partners that provide support and assistance to researchers with the development of research proposals and bids to working with industry on R&D and knowledge exchange projects and public engagement.

## The Model

### The first model

A sub-set of the RED team were involved in a two-part workshop process to anticipate what RED might need to deliver in order to support the School research strategies. Part 1 involved a review of the draft School research strategies, and part 2 focused on developing the model. There was a clear intention behind this: the University of Glasgow (UoG) had already established a reputation for having progressed a model of good practice in RC. Their resources were open<sup>ii</sup>, and their proposed themes seemed like a reasonable map to consider a RC programme at HWU taking into account the local context. So, the second part of the workshop involved a translation of the established UoG themes into actions and stakeholders, in order to anticipate what might be needed to deliver and support the HWU research excellence strategy, and in particular, to help the Schools identify actions as part of their own research strategies. On reflection, this initial workshop turned out to be a rather accurate predictor of what have eventually been recognised as action plan priorities for HWU. As such, the first model of HWU RC identified five priority themes that could be the potential focus of a RC agenda, that mirrored the UoG themes: (1) Research Integrity; (2) Collegiality; (3) Research Recognition; (4) Research Careers; and (5) Open Research. These themes were mapped out to give consideration to potential priority and other actions and key stakeholders for each theme, as seen in **Figure 4**.

Figure 4: The first model – 5 priority themes (Image © RED, 2022 and included with permission)



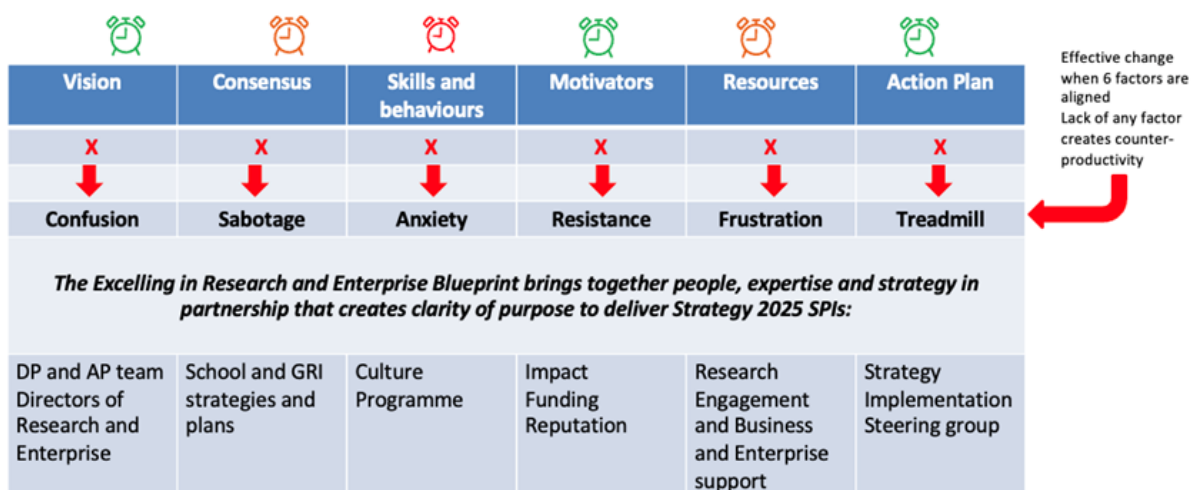
This first model provided the initial foundation for discussion of what is meant by RC generally, and at HWU specifically, and a useful touchstone for reference as the RC work progressed. The first model was viewed as a good starting point from which to explore what is meant by RC, using key concepts – *research integrity*, *research recognition* and *open research* that describe critical aspects of the research production process together with the personal and social expectations of researchers (*collegiality* and *research careers*).

*The second model*

The strategy to excel in research and enterprise can be seen as a model of complex change in Lippett and Knoster’s terms, as well as a foundation of, and blueprint for, change. So, it was important for us to consider how we can work across all of our university community to align the RC.

Using Lippitt and Knoster’s model for managing complex change, we then developed a second model by reviewing their suggested six conditions for achieving sustainable change (see Figure 5). The second model is orientated towards considering the development and delivery of our Excelling in Research and Enterprise strategy as a process of complex strategic change. The RC programme is seen as a means of influencing and aligning skills and behaviours in service of the goal of delivering excelling in research and enterprise. The model also offers a perspective that aims to view RC as a process of complex strategic change; taking into account the organisational, behavioural and strategic rationale in a systematic way. It offered us a tool to form a realistic assessment of the

Figure 5: The second model (Image © RED, 2022 and included with permission)<sup>iii</sup>



Developing these models was a proactive way to envisage what the possibilities might be for fostering a vibrant RC at HWU, and to connect culture with strategy. But the next stage was the most critical part of the process: to engage in a method of consultation to translate the model so



that it was meaningful for the HWU research community; to examine the model in the territory, that is, with the HWU research community in the context of HWU as a globally connected university. The models provided us with the vision, but we needed to see if we had the consensus, skills, incentives, and resources needed to develop a meaningful, achievable and sustainable RC action plan.

### **The Method – from Map to Model to Territory**

The map-territory relation refers to the association between the map, as the representational output of the mapping process, and the object being studied, or the actual, physical territory (**Dalcher, 2018**). A map does not equate to the actual territory it represents. However, when accurate, it mirrors the structure of the territory, hence its practicality and utility (**Korzybski, 1933**). As such, we sought to engage in an agile process that would translate the RC map and the models to the territory (the context) of HWU.

HWU's ethos is that we put our community of students, staff and alumni at the heart of everything we do by adopting person-centred approaches in the development of policy and strategy and involving the HWU community in consultations, feedback and decision-making. It is recognised that adopting agile practices that have been traditionally used in business and software development to get regular feedback to optimise outcomes can be effectively applied in higher education with students and teaching practices (**Schön, Buchem & Sostak, 2022**). Core agile practices highlight the importance of: people and teamwork; shared visualisation systems; iterative cycles of development; a lead facilitator; and a workflow tool for the transparent documentation of activities and reflections on progress (**Hidalgo, 2018**). As such, an agile framework can also be applied to research practices (*ibid*) and to the development of RC (**Shaw, Errington & Mellor, 2022**).

Recognising that fostering a positive RC cannot happen quickly (**Casci & Adams, 2020**), and adopting the principle of slow scholarship (**Karkov, 2019**), we engaged all members of the research community through a slow, agile, one-year process of consultation and iterative feedback in order to carefully examine the RC landscape at HWU. Hence now we shall focus more closely on the process; what we did and our learning along the way.

From the outset we approached the consultations as a partnership piece with inclusivity at the heart of everything we did; a team endeavour blending together academic and professional partner credibility to include the whole of the HWU research community.

The consultation process used a mixed-methods approach, combining different qualitative and quantitative methods (Creswell, 2013) to examine RC at HWU through different lenses to gain deeper, more complex insights and thus broaden the scope of our work. The methods used included surveys, focus groups and co-design workshops, to co-create a global action plan and embedded principles of equality, diversity and inclusion in the research eco-system to ensure that marginalised researchers were actively encouraged to participate and all consultation stages were accessible and inclusive. The stages were as follows:

### *Stage 1- Scoping of 'ideal' research culture*

School-level hybrid workshops were held inviting the research community in each academic School to participate in brainstorming what an ideal RC would look like at HWU, what has already been done and what they thought was needed, using creative in-person and online methods (such as Padlet) to map out the key themes.

*Figure 6: Research culture consultation in action (Image © Catalina Bastidas, 2023 and included with permission)*



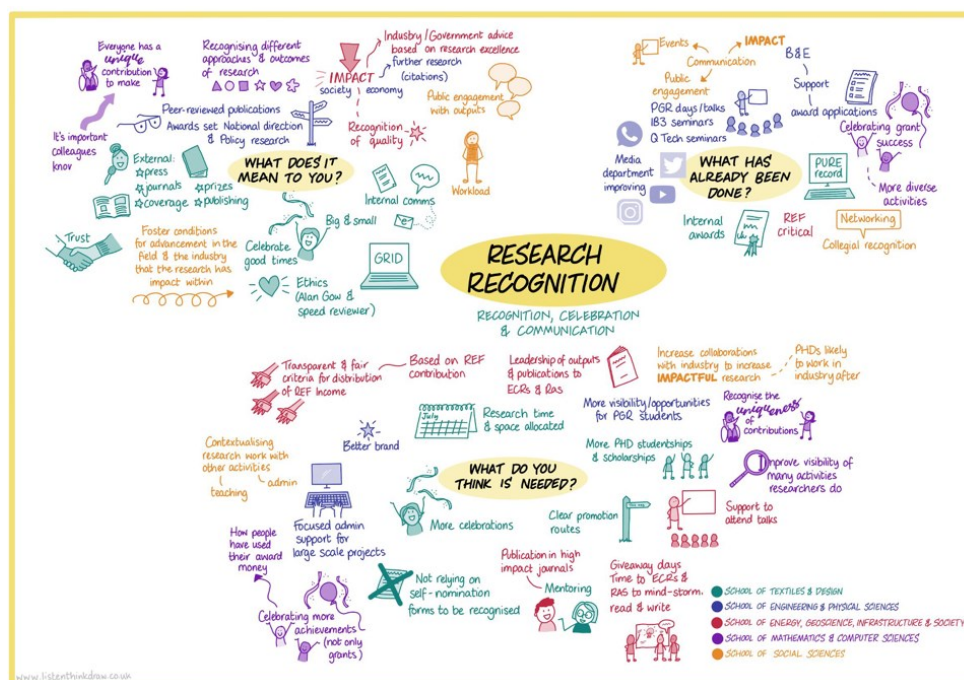
Seventy-six participants were involved in-person during visits to the Borders campus and four Schools on the Edinburgh campus, and online from the Dubai and Malaysia campuses (see Appendix). The discussions gave a clear overview of the ideal RC, with artistic representations of the five strategic RC themes (see Figure 7 for an example of the artistic representation of the research recognition theme).

### *Stage 2 - Diagnostic of 'as is' research culture*

Surveys and cross-disciplinary focus groups were externally facilitated by HEdway Group Ltd<sup>iv</sup> using UKRI (UK Research and Innovation) Funding Stabilisation funds to drill deeper into the research community's

perceptions of the current HWU RC and any specific suggestions for how to bridge any gaps between the reality and the ideal. Bringing in an independent facilitator for this part of the consultation was felt to be the best way to encourage the research community to open up and be truthful about their current research cultural experience. A survey which was administered by the Wellcome Trust in 2020<sup>v</sup> that elicited information from researchers across the UK about what they thought about the culture they worked in, was adapted for the HWU context and distributed online. Respondents who expressed interest in being further involved were invited to participate in follow-up focus groups held in person in Edinburgh or online. Costs for researchers from Borders and Orkney campuses were covered for them to attend in person in Edinburgh, while Dubai and Malaysia researchers participated online. We received 286 survey responses, and 58 participants attended the focus groups in-person or online (see Appendix). The focus groups led to 129 suggestions for things that could be done at HWU to improve the RC, which were mapped against the five RC strategic themes.

Figure 7: Artistic representation of research recognition



### Stage 3 - Co-creation of action plan

In person and online workshops were held with all five academic Schools and on all five campuses over a 3-month period to discuss key findings from Stages 1 and 2 and prioritise actions and next steps. Plus, five task and finish (T&F) groups were established as sub-groups of the Research Culture Working Group, focusing on each of the strategic RC themes (see Appendix). Participants in workshops were asked to prioritise the 129 suggestions, and the T&F groups were asked to consider theme-specific

key findings and outcomes from the consultations, to give recommendations and suggested next steps.

This 3-stage method empowered and enabled the research community to feel globally connected, involved and committed to participate in fostering a positive and inclusive RC. As noted earlier, working in an agile, collaborative, iterative way allowed us to use a diversity of approaches to draw in the whole, global HWU research community to co-create from the bottom-up an action plan that is transparent, meaningful, realistic and achievable.

### **The Territory**

So, what does the RC territory look like at HWU? It is evident from the consultations that identifying RC in the HWU context is complex. As a globally connected university there are many examples of good practice across different parts of the university. But there are more actions that can be taken to foster not one but many research cultures across the institution and bring in the different strengths of each campus and the focus on an enterprising RC. As the university is located in different territories (countries) and research funding landscapes, the research cultures are inherently linked to the local (campus, School, discipline, research group) as well as global territories.

Nevertheless, the consultations did give rise to a clear consensus that one of the unique selling points (USPs) of HWU RC is that we are a *unique, enterprising, inclusive, global* university that conducts *interdisciplinary* research that generates new *knowledge* that can be *applied* to create real-world *impact*. The working definition of RC at HWU can be seen in **Table 1**.

*Table 1: Working definition of research culture at HWU*

<p>Heriot-Watt University endeavours to foster, maintain and support a positive, vibrant and enterprising research culture. In line with the HWU research strategy priority themes of <i>excelling in research and enterprise, building flourishing communities</i> and <i>being a global, connected university</i>, at HWU we strive for a successful, enterprising research culture that:</p> <ul style="list-style-type: none"> <li>• is ambitious, dynamic, agile, innovative, exciting, open, and communicative;</li> <li>• is collegiate and collaborative;</li> <li>• promotes ethical behaviours in a well-balanced research and innovation environment;</li> <li>• embeds equity, diversity and inclusivity;</li> <li>• enables career development and research excellence by members of the community at different career stages;</li> <li>• creates impacts for research, society, industry, and academia</li> </ul> <p>Aligning with our university values, we seek to embed an enterprising research culture that promotes a sense of connectness and <i>belonging</i> across the whole research community, <i>celebrates</i> holistic research success, enables <i>collaboration</i>, and <i>inspires</i> the research community to do and support the best research they can do, and be the best researchers they can be.</p>
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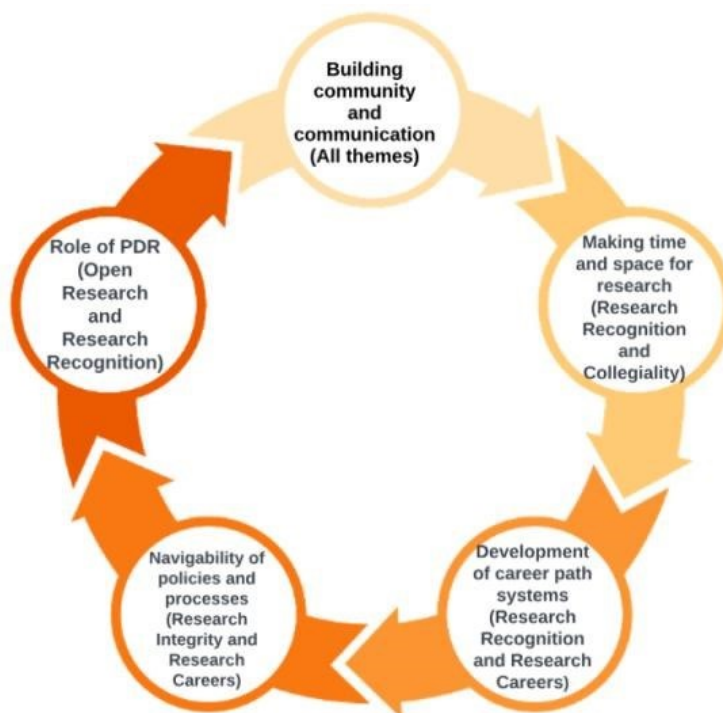
Key concerns that were raised by the HWU research community were the depletion of connection across the university in the post-Covid pandemic era, and erosion of time to do research due to competing demands from teaching and administration. This gave rise to the identification of salient issues that need to be addressed in order to foster a positive and inclusive RC, as seen in **Table 2**.

*Table 2: Salient issues identified to foster research culture at HWU*

A workload model that appropriately recognises time for research.
Opportunities to encourage collaboration and nurture collegiality.
Improved communication processes.
Review of systems and processes to support research and career development.
Celebrating research in many different ways.

As such, we have been able to identify priority actions for HWU, as seen in **Figure 8**.

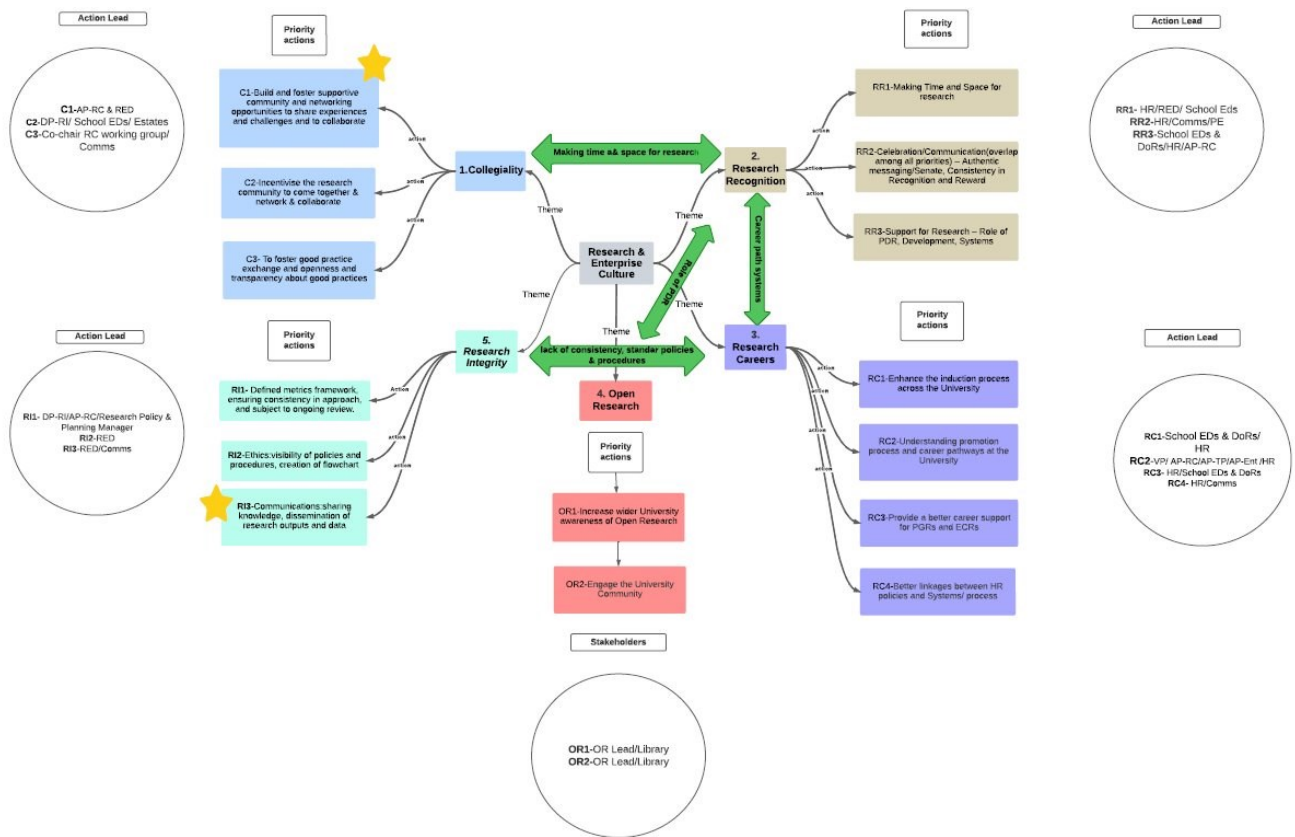
Figure 8: Priority actions for HWU



The culmination of the 3-stage culture work is a bespoke, living action plan for HWU that has been co-created with the HWU research community and incorporates short, medium and long-term goals. The global HWU community has a forward looking, unconstrained and ambitious future vision of what an ideal research and enterprise culture at HWU should look like, and there are gaps between that vision and the diagnostic of perceptions of the ‘as-is’ culture. The action plan seeks to highlight work that is already being undertaken at HWU, implement new initiatives that will address the gaps identified through the consultation process, and drive forward an active strategy for supporting researchers.

The action plan aligns with HWU’s values and research strategy and its ongoing commitment to the principles of the Concordat to Support the Career Development of Researchers<sup>vi</sup> and the plans as outlined in the HWU Concordat annual reports<sup>vii</sup>. The plan maps (on average) 3-4 actions against each of the five RC strategic themes, along with suggested ways to measure whether actions have been achieved, who are the key stakeholders and which locations (campuses) across the university that the actions are most pertinent to. As a consequence, the resulting model of HWU RC updates the first predictive model (**Figure 4**) to link the themes to actions and stakeholders (**see Figure 9**).

Figure 9: The resulting model (Image © RED, 2023 and included with permission)



## Reflections

On reflection, it is important to mention the challenges we have experienced, such as the difficulty in getting researchers to commit, since it is often the same people who are keen to come forward and collaborate. It is also difficult to break a culture that is based on 'award' or 'incentives' and not all members of the research community who think about 'giving' for the benefit of their community without expecting anything back. The number of participants in the three stages might seem small compared to the size of the research community, but in reality, there was a much higher response rate to previous staff surveys, so we were pleased to see the level of engagement from the research community on RC issues.

The burgeoning momentum behind the cultivation of a robust RC within our global university community has underscored the critical need for enhanced support structures within our Schools. Recognizing this imperative, efforts have been directed towards aligning School strategies with the overarching objectives of the RC movement. To facilitate this alignment and ensure effective monitoring of action plan progress, the allocation of resources has been sought to hire three dedicated research culture coordinators. These coordinators, positioned within the Schools,

will serve as pivotal conduits in supporting the fulfilment of objectives outlined in the action plan, as garnered from the research community.

Furthermore, in acknowledgment of the intricate interplay between the RC action plan and the HWU Athena Swan Bronze Action Plan, collaborative initiatives have been initiated with the Equality, Diversity, and Inclusion (EDI) team at HWU. Drawing insights from the UKRI funded EDI Caucus project<sup>viii</sup> that is led from HWU, we aim to cultivate inclusive research environments that empower a diverse spectrum of researchers. This strategic collaboration seeks to create conducive environments where researchers from diverse backgrounds, including women, disabled individuals, LGBTQIA+ communities, racial minorities, and those with caring responsibilities, can thrive and contribute meaningfully to research and innovation careers.

In tandem with these efforts, the establishment of a dedicated RC fund has been identified as crucial to promote activities aimed at fostering the RC across the university. Such initiatives signify a commitment to fostering an environment conducive to research excellence and innovation. Critically, culture should not be viewed as disconnected to research quality and strategy. Moving forward, the realization of these objectives will necessitate the formation of a more structured team for RC. By leveraging collective expertise and collaborative partnerships, we aspire to cultivate a vibrant RC that nurtures entrepreneurship, inclusivity, diversity, and excellence.

## **Conclusions**

In revisiting the Lippitt-Knostrer model for managing complex change, we will review the six key areas that are required for sustainable change. Through an initial process of consultation across all disciplines, campus locations, research roles and career stages, HWU was able to develop a *vision* (1) of the ideal RC for the university. Further consultations through surveys and focus groups led to a *consensus* (2) on a definition of RC at HWU; and co-production of the identification of the *skills* (3), *incentives* (4) and *resources* (5) required to foster a vibrant, inclusive and enterprising RC. A final stage of cross-campus discussions involved the HWU research community in the co-design of an *action plan* (6), with clear themes mapped against the university values and research strategy, with tangible goals and suggested measures.

The agile framework and the methods we have used have placed our research community at the heart of the process. The action plan will drive forward an active strategy for supporting the research community, so we see this process as just the beginning of our RC journey. The Research Culture Working Group will oversee the implementation of the plan, as



well as the provision of a RC programme, which has already begun in earnest. For example, we have already launched a RC Café Series including panels and workshops related to the RC themes, begun to deliver Narrative CV workshops, the good practice exchange and facilitate discussions about Nature Masterclasses on research-related topics, and are offering regular dedicated virtual writing sessions for all researchers including PhD students.

In order to ensure that the action plan is implemented we need to encourage the whole university to engage with the plan and take steps to effect change. So, we will ensure that the action plan feeds into School research strategies, and we will also recruit a network of RC champions across the university and all its campuses to create a strong RC throughout the global university, and to contribute to the development of others.

Furthermore, we plan to develop our own RC indicators so we can measure positive shifts (such as increased engagement in RC activities, more promotions, etc.) or negative shifts in the RC (e.g., reduction in number of research proposals, workload model not being fit for purpose, etc.). Although (like everyone else) we are waiting for REF2029 People, Culture and Environment indicators, we believe that, as stated by Whalley and Rowe (2024), it is important to adopt an approach 'where institutions can recognise, address, and assess research culture challenges within their unique contexts'. Using the INORMS SCOPE Framework<sup>ix</sup> for responsible evaluation will be critical in developing indicators that are positive and supportive, and that help us to evaluate positive shifts in RC, measure research excellence and provide insights into where more work needs to be done.

We would recommend this approach to other universities who are considering their own RC work. It is intensive, takes time and has its challenges, but our estimation at this early stage is that it is worthwhile because it empowers the research community to foster the RC that they want to see. This method of consultation and research community engagement allows universities to identify priorities for research culture and research excellence in an inclusive way.

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## Acknowledgements

We would like to thank the HWU research community for their participation throughout each stage of the research culture consultation process. It would not have been possible to co-design such a robust action plan without the level of engagement we had. Furthermore, would like to acknowledge the work of Craig Walker and the HEdWay Group Ltd for their independent, expert assistance with the Stage 2 consultations through adapting and administering the survey, arranging and conducting the focus groups, carrying out the analysis and presenting a final report.

Professor Jemina Napier is Associate Principal of Research Culture & People at Heriot-Watt University, where she has the remit as academic lead to strategically support the university research community to foster positive and inclusive research culture(s). As Chair of Intercultural Communication in the Department of Languages & Intercultural Studies her research sits at the intersection of applied linguistics, interpreting studies, deaf studies and gender studies where she specialises in the study of mediated communication and linguistic accessibility for deaf communities. Jemina is a Fellow of the Academy of Social Sciences (UK) and Corresponding Fellow of the Australian Academy of Humanities.



Dr Fiona Armstrong is currently Global Director of Research Engagement at Heriot-Watt University, taking up the role in October 2019. Joining the University from UK Research and Innovation (UKRI) where she was Deputy Director of Community Engagement for UKRI's EU Exit Programme. Fiona joined the Engineering and Physical Sciences Research Council in 1999 and worked in a variety of roles across the Research Councils, including Knowledge Exchange, Research Capability and Organisational Change. Fiona's PhD is in Plant Biophysics and she is a Fellow of the Royal Society of Arts.



Catalina Bastidas joined HWU in 2018, and serves as a Researcher Development Consultant dedicated to enhancing Research Culture. Collaborating with the Associate Principal and the Working Group for Research Culture, she fosters solution-oriented research across HWU's global campuses. With over a decade of international development and research support experience, Catalina brings valuable insights to R&D partnerships. Holding degrees in Law and International Studies, her passion lies in equitable access to opportunities, and empowering communities through innovation and justice. Her experience has driven impactful change by catalyzing partnerships and translating research into viable projects, driving positive societal impact through academia.



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## List of Images

Figure 1: Map of HWU locations (Image © HWU, 2024 and included with permission)

Figure 2: HWU Governance Structure

Figure 3: Research Culture Management Team Structure

Figure 4: The first model – 5 priority themes (Image © RED, 2022 and included with permission)

Figure 5: The second model (Image © RED, 2022 and included with permission)

Figure 6: Research culture consultation in action (Image © Catalina Bastidas, 2023 and included with permission)

Figure 7: Artistic representation of research recognition

Figure 8: Priority actions for HWU

Figure 9: The resulting model (Image © RED, 2023 and included with permission)

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## List of Tables

Table 1: Working definition of research culture at HWU

Table 2: Salient issues identified to foster research culture at HWU

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## Appendix

This appendix provides tables and figures outlining the involvement of the HWU research community in different stages and aspects of the research culture consultation process.

### Research Culture Working Group: By role and discipline/affiliation

Role in community		Discipline/University Affiliation						Total
		School: EGIS	School: EPS	School: MACS	School: SoSS	School: SoTD	University-wide	
Research support/ Professional partners	RED						5	10
	HR						2	
	Information services						1	
	Technician	1	1					
Academics	Professor		4	1*			5**	9
	Associate Professor	1		1	1***			3
	Assistant Professor					1		1
Researchers	PGR		2					2
	PDRA					1		1
<b>Total</b>		2	7	2	1	2	13	27

\*This Professor was also the co-chair of the research culture working group

\*\*These Professors were representing the research degree & ethics committees, or as Associate Principals, not their disciplines

\*\*\* During the consultation this academic was promoted to Professor

### Research Culture Working Group: By role and campus location

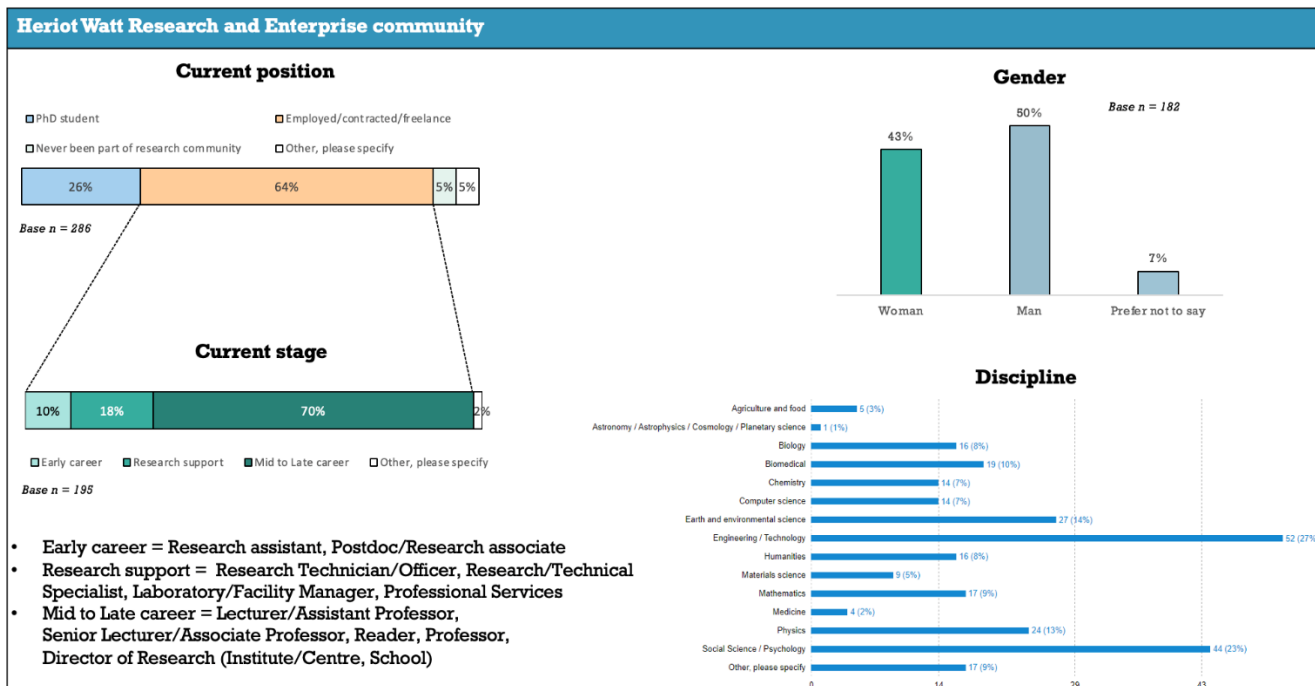
Role in community		Campus: Edinburgh	Campus: Dubai	Campus: Malaysia	Campus: Galashiels	Campus: Orkney	Total
Research support/ Professional partners	RED	5					10
	HR	2					
	Information services	1					
	Technician	2					
Academics	Professor	8	1	1			9
	Associate Professor	3					3
	Assistant Professor				1		1
Researchers	PGR	2					2
	PDRA	1					1
<b>Total</b>		24	1	1	1		27

Stage 1 consultation participants: Hybrid meetings with Schools

Role in community		Discipline/University Affiliation					Total
		School: EGIS	School: EPS	School: MACS	School: SoSS	School: SoTD	
Research support/ Professional partners	RED						
	HR						
	Information services			1	1	1	
	Technician	1	2		1	1	
Academics	Professor	6	7	7	4	2	
	Associate Professor	1	1	3	4	3	
	Assistant Professor	1		1	6	5	
Researchers	PGR	1	2	2	1	3	
	PDRA				1	1	
	Research assistant	3	2		1		
<b>Total</b>		<b>13</b>	<b>14</b>	<b>14</b>	<b>19</b>	<b>16</b>	<b>76</b>

Stage 2 consultation participants: Survey

HWU respondent Demographics: career stage, gender and discipline



*Stage 2 consultation participants: Focus groups*

Participants were not asked to reveal which School/professional services team they were aligned to in order to remove this identifier as a barrier for anyone for whom anonymity was of high importance. Thus, this table reveals only roles (Technicians were grouped with Research Support and Administration for similar reasons to preserve anonymity).

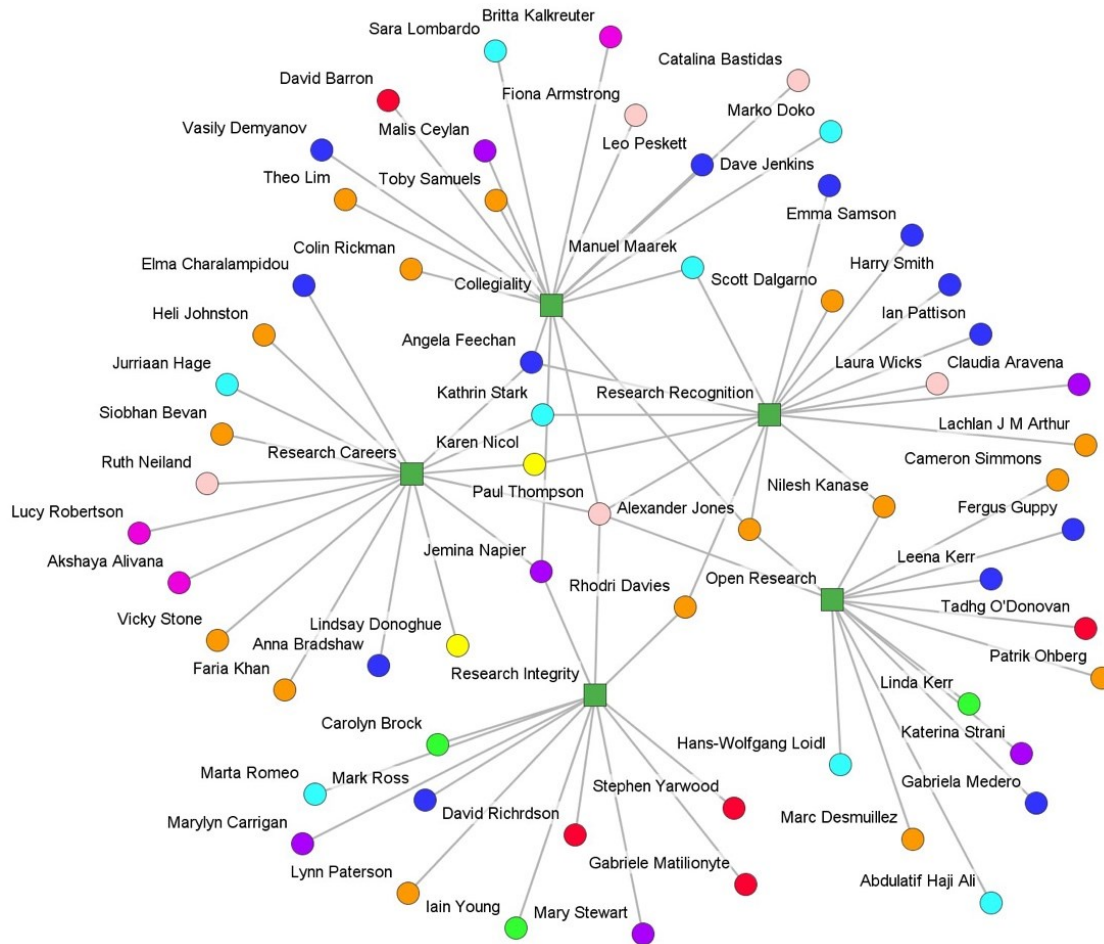
	Assistant Professor/ Associate Professor	Full Professor	PhD student	Postdoctoral Research Associate/ Research Assistant	Technician/ Research Support/ Administration	Total
FG 1 in person	2	3	2	1	4	12
FG 2 in person with BSL	2	1	3	1	2	9
FG 3 in person	2	1	3		7	13
FG 4 in person	4	1	2		2	9
FG 5 in person with BSL	2	1	3		2	8
FG 6 online	3	3	1			7
<b>Total</b>	<b>15</b>	<b>10</b>	<b>14</b>	<b>2</b>	<b>17</b>	<b>58</b>

*Stage 3 Consultation Participants: Co-design workshops*

Role in community	Discipline/ University affiliation									Total
	School: EGIS Edinburgh	School: EGIS Orkney	School: EPS	School: MACS	School: SoSS	School: SoTD Galashiel	Mixed School: Dubai	Mixed School: Malaysia	University-wide	
Research support/ Professional partners						1	1	2		
Academics	16	7	8	6	8	8	23	9		
PGRs	1	2	1	2	1	2	5	8		
PDRAs	1	1	1	1	2					
<b>Total</b>	<b>18</b>	<b>10</b>	<b>10</b>	<b>9</b>	<b>11</b>	<b>11</b>		<b>19</b>		

\*These workshops were run as drop-in sessions or Prof Napier attended research committee meetings. As such it was harder to determine the breakdown of roles of people in attendance, so in this table we give an estimation of the numbers who attended in each broad category of School or location.

Network analysis of volunteers in task & finish groups



- Green Square – theme
- Colour based on School discipline/affiliation
  - Red – other (groups only mentioned once; business & enterprise, Dubai, Malaysia, Research Futures Academy, ethics)
  - Blue – EGIS
  - Orange – EPS
  - Yellow – HR
  - Lime green – Information Services
  - Sky blue – MACS
  - Pale Pink – RED
  - Bright pink – SoTD
  - Purple - SoSS

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**Endnotes**

<sup>i</sup> Schools of: Mathematics & Computing Sciences; Energy, Geoscience; Engineering & Physical Sciences Infrastructure & Society; Social Sciences & Edinburgh Business School; and Textiles and Design; plus the Global College which functions as a 6th School and provides academic foundation and accelerator programmes to all undergraduate and postgraduate students on all campuses.

<sup>ii</sup> See <https://www.gla.ac.uk/myglasgow/ris/researchculture/researchcultureactionplan/>.

<sup>iii</sup> Key. DP – Deputy Principal, AP - Associate Principal, GRI - Global Research Institute. The alarm clocks represent ratings of level of risk (green – low risk, amber – medium risk, red – high risk).

<sup>iv</sup> HEdway Group Ltd are a network of researchers that partner with universities on strategic projects to enact positive change across systems and policies. HEdway had already worked with HWU on other strategic projects so after a tender process they were selected as the most fitting organisation to lead the consultation work as they were already familiar with the university. See: <https://www.hedwaygroup.com>.

<sup>v</sup> See: <https://wellcome.org/reports/what-researchers-think-about-research-culture>.

<sup>vi</sup> See: <https://researcherdevelopmentconcordat.ac.uk>.

<sup>vii</sup> See: <https://www.hw.ac.uk/uk/services/research-futures/resources/hr-excellence-research.htm>.

<sup>viii</sup> See: <https://edicaucus.ac.uk>.

<sup>ix</sup> See: <https://inorms.net/scope-framework-for-research-evaluation/>.

