SHIFT LEARNING

Research Culture | Opinions Research | Qualitative Report Wellcome Trust

Report written by: Helene Moran and Lucy Wild

CONTENTS

EXECUTIVE SUMMARY

BACKGROUND, OBJECTIVES AND METHODOLOGY

Wellcome is launching an ambitious programme to understand research culture and commissioned Shift Learning to conduct in-depth qualitative and quantitative research to explore current perceptions, impacts, drivers, and ideas for improvement. This report presents findings from the qualitative phase, which consisted of 94 in-depth interviews with a diverse range of researchers working in the UK, as well as 4 co-creation workshops (in London, Manchester and Glasgow), each with 9 representative members of the research community.

PERCEPTIONS OF RESEARCH CULTURE

- Respondents' perceptions of research culture are difficult to fully assess, partly because there are so many **different factors and interpretations at play**. **Experiences and perceptions of research culture are highly varied**: even among individuals within the same institution and department with a complex set of interconnected conditions and behaviours at play.

- Respondents often saw culture through their own lens – reflecting their background, previous experience and bias. For some, certain cultural aspects, such as competitive and challenging environments, represent an important rite of passage to give researchers the skills, intellect and resilience to be successful – for others, they reflect a system that is exploitative and discriminating.

- Most expected certain less desirable aspects of the academic culture to be present, including: long hours, high-pressured working environments, multiple commitments, isolation, poor work-life balance and frank exchanges. **Historically these had been offset** by other cultural characteristics, such as job security (once in permanent positions), autonomy, collaboration, creativity, societal contribution and flexibility. Participants felt that these previous career advantages are being negated by systems that are open to gaming, pressured by financial needs and focused on metrics at the cost of individuals. The decrease in these benefits is also seen to impact on researchers' wellness and sense of job satisfaction.

- While there were several frustrations with the current culture, with many respondents often feeling undervalued or exploited, many did report high levels of satisfaction with their current working teams and PIs. Many early-career researchers (ECRs) felt that their supervisors and PIs were **trying their best, but often in difficult financial circumstances**.

- Research culture is perceived to be a 'hot topic' of late, with **interventions potentially seen as tokenistic**. Most reported initiatives or brochures publicised by their institutions, but suggested such initiatives were often for show, rather than a serious attempt to solve issues. While institutions were thought to have increased their focus on culture, for many the drivers of the current culture were in conflict with each other, and continuing to make it worse.

- Researchers believe they were generally keeping the quality and quantity of outputs high, but felt that **cracks are beginning to show** and there is worry about how sustainable the current system is in the long term and the cost on researchers themselves.

IMPACT ON RESEARCHERS

- Those who reported working in positive research cultures described the support and collaboration they felt from peers and managers and how this aided both their research and personal wellbeing.

- Research is seen by many to be a vocation, with our respondents highly passionate about the work they were doing. Respondents held themselves to high ethical standards, striving for quality in all they did, but recognised these were challenging times for researchers.
- However, this very personal passion meant that **lack of success could feel like personal failure**. Institutions were considered, by some, to be good at exploiting the passion of researchers.
- While various policies and procedures to support more positive culture were regularly cited as being in place, there was often a concern about enacting them. This stems from a **fear of being seen as 'rocking the boat'** but also due to the fact that bad behaviour (impacting researchers or the research) was often very difficult to identify. A number of respondents shared instances where they had enacted policies only to find that very little was done at an institutional level. Very **well-established PIs were generally reported to be 'untouchable'** – nearly all accounts (anecdotal or experienced) of extreme bad behaviour were attributed to those that were extremely well-established in their career.
- Long working hours, a pressure to find positive results, a lack of job security and intense levels of competition create the conditions ripe for **stress, anxiety, poor mental health, bullying and aggressive behaviour**. Many talked about the impact of this not only on their own wellness but also on their families. Academia was often cited to be 'a lifestyle choice' rather than simply a job.

DIFFERENCES IN EXPERIENCES

- **Experiences of culture were seen to be highly varied** (even among individuals within the same institution or department) and often experienced differently by individuals depending on their own personalities, supervisor, institution, stage of life, state of home life, etc.
- However, **some researchers did appear to be more exposed and vulnerable** to the negative aspects of culture, including ECRs, women and those with caring responsibilities, interdisciplinary researchers, those from less affluent backgrounds, BAME researchers, disabled researchers and non-UK-national researchers.
- While few reported incidents of directly sexist, racist or homophobic behaviour, there were often suggestions that **unconscious bias played a significant role** in the ability for those from diverse backgrounds to succeed within the current academic culture. Unconscious bias was thought to be at play during the decisions made by grant panels, funding committees, journal publishers, institutional leadership, department heads and supervisors – all of whom were predominantly perceived to come from white and affluent backgrounds.
- Disabled researchers **often referred to the current culture as being an ableist one**, in which limited funds and time often seemed to prevent adaptations to working life that would making the culture more inclusive. Disabled researchers often highlighted ways in which the system actively discriminated against them, making grants, jobs and promotions difficult to win.

IMPACT ON RESEARCH

- Researchers generally felt that they **put the needs of the research ahead** of their own wellbeing.
- While many shared anecdotes of questionable research methods and fraudulent data practices, **few suggested that they had witnessed this type of behaviour first-hand**.
- However, many did feel that **current reward systems were driving quantity over research quality**. A regularly cited example was the actions taken by researchers to try and gain publication in high-impact journals, which often preferred shorter report-style entries with

positive findings. This was unquestionably felt to make replicability harder, with less focus given to method, and lead to some inflation of results or massaging of the data. However, issues here were considered difficult to spot with any certainty without significant investigation, making bad practice **difficult to distinguish on first inspection**.

- Few doubted that this increased level of output would impact the quality of research in the long term, with many raising concerns that the **current culture did not afford time or space** to properly consider research, which would ultimately lead to less creative and innovative work being produced.
- Indeed, many felt that the **current culture of research was too risk-averse** and focused on preserving the status quo, and that these attitudes would make it significantly harder to produce research offering real breakthroughs.
- **Loss of talent** from the sector was another concern, with talented researchers already being lost due to increased pressures and instability. So too was the fact that many researchers may be **developing the wrong values** as a result of the current culture, with new researchers only knowing the current competitive environment.

KEY DRIVERS

- Research cannot be seen in isolation and the **combination of challenges facing universities** undoubtedly plays a role in shaping research culture.
- Financial uncertainty is undeniably seen by respondents as having an impact on the day-to-day culture felt by researchers, as **institutions try to strategically secure an income** (e.g. student recruitment vs research income). Often these initiatives were considered knee-jerk, opaque and business- rather than people-centred.
- Many held the **REF and wider culture of metricisation accountable** for the increased presence of poor research culture, or rather how these frameworks had been implemented within institutions. For many, they increased bureaucracy while providing opportunities to 'game the system' and view research staff as commodities. This led to cynicism that new measures focused on culture could be 'another hoop' for researchers to jump through.
- A small number of researchers suggested that poor research culture might **limit the quality** of research outputs – including the aforementioned pursuit of publication in high-impact journals.

WELLCOME PERCEPTIONS AND RECOMMENDATIONS

- Many felt Wellcome was a **positive force** in improving research culture through their commitment to open access and lobbying influence.
- However, a few felt Wellcome's funding allocation process was contributing to a split in research between the **'haves' and 'have nots'**. The allocation process was currently seen to reward funding to those with existing strong publishing records, limiting access to those yet to publish. It was felt therefore that a small, successful minority of researchers were able to **monopolise funding**.
- 'Diversity', 'collaboration', 'public engagement' and 'leadership is celebrated' were deemed **particularly powerful** within Wellcome's proposed goals. However, concern remained around 'competition', as this was seen as a driver of negativity in research culture. Others had **reservations about the ambiguity of certain goals and the number of goals suggested** – feeling that Wellcome would have greater impact by focusing on fewer, more specific goals.

- It was felt that Wellcome's status, trust and autonomy places them in a uniquely powerful position and respondents recommended they **provide training programmes** on:
  - Management skills.
  - Delivering and receiving feedback.
  - Initiatives that drive a healthy work/life balance.
- **Longer-term funding for projects** was a popular suggestion, as it would bring greater job security and thinking space for researchers, while many recommended that Wellcome make **changes to their funding criteria**, such as:
  - Rewarding funding to research teams that demonstrate strong ethics.
  - Putting less focus on impact factors.
  - Reducing significance of publication records.
  - Amending the grant application process to encourage diversity.
- Investing in ECRs and providing **more smaller-sized grants** to help them kick-start their research careers was a common suggestion.
- Some recommended that Wellcome **directly supervise projects** they fund to inspect the working conditions, rigour and wellbeing of staff.
- Respondents felt Wellcome could improve research cultures by **using their influence widely**, encouraging other funding bodies to replicate their commitment to open access, redefining the importance of research in public spheres and championing diversity.

VISION FOR AN IMPROVED CULTURE

- At the heart of many respondents' vision for positive research culture is the idea of a supportive and collaborative community, which values quality, creativity, diversity, flexibility and freedom, while respecting researchers' wellbeing and career development.
- Ideas generated by respondents (in both interviews and co-creation groups) were often framed around the following areas and on **making small improvements to current systems**:
  - Mentoring and leadership
  - Acting on bad behaviour
  - Funding
  - Support for ECRs
  - Wellness and space to think.

BACKGROUND, OBJECTIVES AND METHODOLOGY

BACKGROUND

Wellcome is one of the world's largest funders of biomedical research and their investments have helped improve the health and lives of millions of people. There is increasing evidence emerging about the culture surrounding these research achievements and the impact this has both on researchers and the research itself.

Wellcome is **launching an ambitious programme to improve research culture**. A critical element of this programme is to expand the evidence base around the research culture and its impacts – generating a **rigorous foundation of data** from which to better understand the problem and target interventions. This work will sit alongside, and be supported by, an inclusive and wide-reaching communications campaign.

Wellcome therefore commissioned Shift Learning, a specialist education market research agency, to conduct in-depth qualitative and quantitative research into UK research culture. This report presents the **results of the qualitative phase**.

RESEARCH OBJECTIVES

Overarching project research objectives were as follows:

- To explore researchers' opinions and perceptions about the culture of research.
- To identify key drivers of this culture.
- To understand what a vision for a great research culture looks like.
- To determine what needs to change to achieve this vision.
- To identify differences in perceptions, attitudes and vision by demographic factors (including career stage, location, institution type, gender).

METHODOLOGY

For the qualitative phase, two main investigative techniques were used: in-depth interviews and co-creation workshops.

IN-DEPTH INTERVIEWS

94 x 1-2-1 telephone interviews were conducted with a diverse range of researchers, lasting approximately 45 minutes. A mixture of random and targeted sampling was used to recruit the respondents. All interviews were carried out by experienced interviewers following a mutually agreed script, which included prompts where necessary and projective techniques. Interviewees were incentivised with a £60 cheque for taking part.

These interviews **focused principally on perceptions of the current culture of research and what the main drivers of this culture were**. The interviews were recorded and then transcribed verbatim so that no important nuances were lost in the analysis.

CO-CREATION WORKSHOPS

4 x 2 hour and 15 minute co-creation workshops were conducted, with each group containing 9 representative members of the research community. Respondents were recruited from the interview stage, as well as targeted and random sampling. These workshops were **primarily focused on solutions and visions for an improved research culture**. Attendees were incentivised with a £150 cheque for taking part.

2 groups were held in London, 1 in Manchester and 1 in Glasgow. Detailed notes of the discussion were taken, plus verbatim transcriptions of the group exercises.

ANALYSIS

The latest version of the **advanced qualitative data analysis software** Atlas.ti was used to interrogate interview transcripts. Verbatim interview transcripts were 'coded' using thematic analysis to draw out key themes in experiences of research culture.

The software enabled the relationships between respondent thoughts and the research objectives to be mapped, providing a solid basis for reporting.

Each transcript was also tagged with **key demographic information** to help identify further patterns in experiences based on characteristics such as institution type, career stage, gender, disability and race.

RESPONDENTS

The researchers interviewed and those who attended the co-creation groups came from a **diverse range of backgrounds** in terms of subject specialism, career stage, institution type, geographical location, ethnicity, gender, and disability.

Respondents were asked to self-report answers to the below demographic questioning on an expression of interest form. Whilst disabled respondents are represented in our sample, the true number of respondents who were disabled or those with long-term physical or mental health conditions is likely higher than explicitly stated. It is worth noting that the manner in which we collected this information changed part way through recruitment to include long-physical or mental health conditions which may not have been identified in early interviews. We should also reflect that some people may not have felt comfortable reporting personal information in the expression of interest form which naturally could lead lower reported numbers across certain demographics.

BAME respondents are also likely to be underrepresented in our sample due to an element of self-selection bias, opting not to take part in the research. These individuals are likely to experience an element of survey fatigue with minority groups being frequently targeted by similar research projects to achieve diverse and representative samples (this was explicitly given as a reason for declining to take part in some instances). It is also likely that both Shift Learning and Wellcome Trust networks may be likely to underrepresent these groups also.

PROFILE OF INTERVIEW RESPONDENTS (94 IN TOTAL)

94 UK researchers were interviewed individually about their perceptions of research culture:

- 81 in higher education (HE), 5 in non-university research institutes, 8 in industry

- 19 late-career, 31 mid-career, 15 early-career, 10 postdoc, 18 PhD students/entry-level

- 51 in biomedical or biological sciences, 20 in other sciences, 15 in social sciences, 8 in humanities

- 68 white, 15 Asian, 6 black, 5 other ethnicities

- 53 male, 38 female, 3 non-binary

- 83 with no disability, 9 with some disability

Four co-creation workshops in London, Manchester and Glasgow, each involving nine researchers, focused on solutions and visions for an improved research culture (total of 36 participants):

- 34 in HE, 3 in non-university research institutes

- 3 heads of research, 5 late-career, 14 mid-career, 5 early-career, 4 postdoc, 5 PhD students/entry-level

- 17 in biomedical or biological sciences, 6 in other sciences, 9 in social sciences, 4 in humanities

- 29 white, 3 Asian, 2 black, 2 other ethnicities

- 18 male, 17 female, 1 non-binary

- 32 with no disability, 1 with some disability

SECTION 1: PERCEPTIONS OF RESEARCH CULTURE

Researchers are keeping the quality and quantity of outputs high, but feel that issues are becoming more apparent and there is concern about how sustainable the current system is in the long term and the cost on researchers themselves.

UPSETTING THE BALANCE

All respondents **stated a passion for their field of study**, placing great value on the quality of research they produce. However, most respondents, even those in well-functioning and supportive teams, felt that the state of research **culture is not as good as it once was,** making it increasingly difficult to operate at the high standards to which they strive.

For researchers working in academia, long hours, high levels of competition and demanding working conditions were generally considered to be part of life within the research community, but **these conditions were historically offset by positives,** such as autonomy, intellectual freedom and challenge as well as a sense of societal contribution. Many felt that these positive benefits were becoming increasingly scarce, as institutions became more commercial in outlook and the sector as a whole became **increasingly focused on outputs and metrics**.

"There's always more and more intensity, uncertainty, more and more metrics, more and more demands from the students as well. Overall things are going to get far more intense and far more stressful for people."

Late Career Researcher, MillionPlus Group Institution

Frustrations with the system (largely perceived to be driven by government, funders and institutions) were common. Many felt their **goodwill and personal passion were being exploited** by their university – resulting in longer working hours and lack of financial compensation or personal recognition for this. These feelings were less common in industry, where terms of employment were considered to be simpler, fairer and generally upheld.

"No, not at all. Really, I think it's about to collapse. Huge things need to change, otherwise they're going to find everybody's going to have left academia. Some incredible geniuses will make it, but some extremely good researchers, who had fantastic knowledge and ideas that could have really revolutionised science, have left and gone to industry because it's just getting too difficult."

Post-doc, Russell Group Institution

LEADERSHIP IS KEY

Positive experiences and culture were nearly always the **result of good supervision and leadership**. PIs and managers do appear to have a significant role in setting the tone for the culture within their working groups, but were said to frequently not be given the training, support and time to effectively do this. This can mean that individuals' exposure to positive cultural experiences can feel more like **'luck of the draw'** than a basic working right. Many also raised concerns that the difficulties of the current culture were leading a lot of talented researchers to **simply leave the sector**.

"Something I got very upset recently when I mentioned to my boss … that she can't expect that everyone behaves in the way she expects them to behave, to be successful. Her answer was (and she has discussed this with another PI). In the end, she said it's natural selection that only the ones that are able to cope with the pressure, to cope with my way of managing would be the ones that stay and succeed. The others would have to leave. That comment, I found it quite sad. I was biting my tongue not to reply to that, the strongest will survive. It's ridiculous."

Middle Career Researcher, Research Institute

While there were a small number of extreme cases of bad behaviour from individuals, these were largely in the minority. Most respondents **saw their PI as trying to do their best**, but in a system that rewarded outputs and money over the researchers themselves. While individuals can make the day-to-day working environment more pleasant, there is **little they can do to change the key factors** that make research culture and working life difficult for the researchers themselves.

VIEWS OF RESEARCH CULTURE

Research culture in general was often described as:

- Chaotic
- Stressful
- Siloed
- Comfort highly dependent on institution

It was common for respondents to describe research culture as hierarchical and one that **bordered on feudal**. Early-career researchers (ECRs) were required to work long hours, create huge levels of output and sacrifice their own personal lives and wellbeing to win the patronage of influential individuals and institutions in order to succeed and survive in the sector.

Many felt it would be easy to look at the current outputs of UK research and see culture as healthy. The majority of respondents felt that while elements of culture were highly problematic, the outputs and quality of UK research generally remained reasonably high. But many agreed that there were tensions (generally

around the pressures of high productivity and increased competition), and many – even those that felt supported in their current culture – had concerns about the **sustainability of this culture for the future**.

HOW CAN WE JUDGE RESEARCH CULTURE?

Respondents' perceptions on the state of research culture are **difficult to fully assess**, partly because most recognise that (particularly academic) research culture is a **very specific environment** and one in which certain working practices were more likely to be considered acceptable – these often related explicitly to working hours, work-life balance, isolation and frank exchanges. Many respondents had only ever worked in academia, so were unable to make direct comparisons with working culture in other industries, but academia was expected to be a very different working environment than the 'average' office job.

QUESTIONS AND TENSIONS

This poses some **key questions** around how current research culture can be assessed:

- Can researchers themselves actually appreciate the state of culture, or is there some kind of collective Stockholm Syndrome at play?
- Are the needs and parameters too specific for ordinary norms to apply? And if this is the case, how are the lines between overworking, exploitation and difficult working environments to be drawn?

There are clearly tensions here:

- For some, a number of current working practices represent an important **rite of passage** to give researchers the skills, intellect and resilience to be successful.
- While for others they are reflective of a **system that exploits** individuals' goodwill and personal passions for institutional organisational gain.

INDIVIDUAL PERSPECTIVES

Respondents' **feelings around culture can also appear to change** depending on their career stage, working environment and current levels of personal and professional satisfaction. Experiences of research culture were **strongly dependent on the character of supervisors,** PIs and department heads.

"I think I'm quite lucky where I am now, I have a lot of research friends, and I think some are also very lucky, but I've definitely heard some examples where it really sounds quite horrendous and it was often to do with the supervisor… because they ultimately have the power"

Early Career Researcher, Industry

Perceptions of current culture **varied significantly from team to team** rather than following subject or institutional trends. It was common to see some institutions cited as being good on research culture by some respondents, only to be heavily criticised by others. Personal **experiences are likely to colour researchers' perceptions** and previous poor experiences can lead to individuals feeling greater satisfaction with their current culture than others in the same team.

Personal attitudes and values also play a significant role in shaping respondents' perceptions and satisfaction with the current culture. There were regular instances of respondents who had personally

benefitted from the culture recognising that it was damaging, particularly to specific groups of researchers, and that the often hostile and aggressive environment could prevent real talent doing well.

"It is highly competitive and good people can have a very, very rough time if they're not lucky, or again, they're not mentored, or they're not really quite gifted enough or sharp enough, whatever the right word is, to navigate around what the funding agencies are after"

Middle Career Researcher, MillionPlus Group Institution

Interestingly, while culture was experienced and perceived very differently, the suggested **drivers and ideas for a future vision were highly consistent across all researcher audiences** (discussed in more detail in Sections 2 and 3 of the report).

LENS AND INCLUSIVITY

Experiences of research culture are highly individualised and it is important to remember that respondents themselves often saw culture through their own lens – reflecting their own background, previous experience and bias. For example, caregiving was often naturally viewed in traditional gender patterns, i.e. women's careers impacted by childcare responsibilities. Only in exceptional circumstances (such as looking after relatives or children with specific care needs) did men appear to be affected by its impact or consider it in relation to their careers.

It is also worth noting that some respondents used the term 'academic slavery' when discussing some of the more exploitative aspects of working research culture – i.e. the long hours, increasing responsibilities and lack of autonomy. This term was usually used without apparent awareness of the historical context of the term or the potential negative impact the use of such language might have on others. It is interesting that this arose in the context of a discussion about improving research culture, and highlights some of the challenges in creating a more inclusive research culture.

KEY COMPONENTS OF RESEARCH CULTURE

While huge variation in perceptions and experiences exist, there was generally agreement around the characteristics that are needed (or not) for positive research culture to exist:

Characteristics seen as definitely part of a good research culture:

- Support
- Creativity
- Collaboration
- Security
- Strong interpersonal relationships
- Diversity
- Feeling of being valued
- Zero tolerance to poor behaviour
- Transparency / openness.

Characteristics that were seen as more ambiguous or conflicted:

- Competition
- Focus on impact
- Ambition

- Single-mindedness
- Short-term contracts
- Challenge.

Characteristics definitely NOT seen as part of a good research culture:

- Bullying
- Metrics / outcomes focus
- Lack of transparency
- Corporatisation of universities
- Bureaucracy
- Risk-aversion.

Characteristics considered definitely not part of good research culture were often those being **implemented at institutional or systems level,** meaning they were the ones that many researchers simply had to put up with or overcome in order to do the work they cared about.

PERCEPTIONS OF CURRENT WORKING CULTURE

While interview respondents had **concerns for the health and sustainability of research culture** in general (and many also shared personal experiences of negative culture), **over half were positive about the state of their current working culture,** generally considering it to be supportive and collaborative.

'Challenging' was often an ambiguous term, used to describe environments that were both:

- Demanding and rigorous intellectually (generally recognised to be a good thing)
- Aggressive and prompting competitiveness.

It was also used to describe the difficulties of working in the current system and how the requirement for high quality and quick results naturally led to a challenging work environment.

Where referred to in working environments, **'competitive' was generally used as a negative term**. High levels of internal competition were seen as:

- Driving negative behaviours (such as bullying, harassment, exploitation, long hours)
- Encouraging researchers to accept them as part of the status quo.

It often led to a lack of peer support, making researchers (particularly young ones) feel more isolated.

FEATURES OF 'POSITIVE' RESEARCH CULTURES

Positive research culture were **ones in which respondents felt valued, secure, supported and had a sense of autonomy**. When these key foundations were in places, researchers seemed more able to withstand and flourish through the more challenging aspects of working culture.

Cited features of positive working culture were:

- Diversity encouraged and celebrated
- Collaboration encouraged and celebrated
- Individual contributions feel valuable and valued
- Individuals feel supported
- Individuals feel safe and secure
- Leadership is transparent and open
- Time to think is valued.

Where working environments were cited as particularly positive, this often stemmed directly from the actions of management and leadership to **create a family feel within working teams**. Leaders throughout the system appeared to play an important role in setting the tone of the culture to junior staff, and there were several instances where respondents strongly saw their management attempting to **protect them from negative outputs of the current culture**.

"Our head of department is extremely supportive, in terms of helping us to achieve our research goals, where possible, and not putting huge amounts of pressure on us as PIs, to get the next grant, the next paper. We all have those pressures, which we place on ourselves, but we're not getting that additional pressure from above"

Middle Career Researcher, Russell Group Institution

Another feature of more positively perceived working culture was the clear value placed on other members of the research community – notably **administrators and technicians**. Many raised the importance of these individuals in:

- Helping with grant applications
- Easing administrative burden
- Setting up and managing experiments
- Conducting risk assessments
- Providing technical support.

Working environments **recognising the value of these individuals** (through good long-term employment contracts and similar benefits packages) were generally seen as healthier than institutions that sought to centralise (remove from departments or teams) or place these individuals on short-term contracts with little stability or additional employment benefits. Often respondents felt that administrators and technicians were

overlooked in discussions around culture, but were a critical component to good quality work and researchers' own wellbeing.

POSITIVE ACTIONS FROM INDIVIDUAL LEADERS

Initiatives from individual leaders and managers seen as contributing to positive culture included:

- Setting positive examples around working hours and culture.
- Giving junior researchers more autonomy around their tasks and scheduling.
- Inviting team members to dinner / out-of-hours socialising.
- Taking the time to know them as an individual.
- Offering flexibility around working hours.
- Demonstrating good work-life balance.
- Giving support / help when needed.
- Being constructive in feedback.
- Offering / sharing credit.
- Being approachable.
- Setting up opportunities for networking / learning about others / lunchtime talks (these were nearly always bottom-up initiatives).

POSITIVE INSTITUTION-LEVEL ACTIONS

A number of positive institutional initiatives to improve research culture were noted by respondents, such as:

- Initiatives aimed at helping new mothers back into the workplace.
- Enacting policies around parental leave, sickness and caring responsibilities.
- Providing evidence that policies are being acted on.
- The decision not to pass KPIs down to individuals.
- Strong administrative support for grant applications.
- Formalised PhD / post-doc programmes (including training on key future career components, such as project management, budgeting and leadership).
- Collaborative town-halls around university initiatives.
- Having physical infrastructure or spaces designed to support informal socialising and collaboration.

INITIATIVES OFTEN PRESENT BUT INEFFECTIVE

A number of respondents were **highly sensitive to initiatives that they considered to be tokenistic** or superficial. Many suggested that, while they were aware of the availability of policies and procedures to support their wellness and work-life balance (and that university brochures often strongly sold the quality of research culture within the institution), these were often considered to pay lip service to the problem rather than enacting any positive change.

For some, this was in part because it was **not necessarily considered 'the done thing'** to activate or use a particular policy benefit. Some also suggested that previous attempts to activate a particular policy were ineffective, there was a lack of capacity to actually use the benefit or leadership simply did not respond. This generally led to a sense that while these policies were there in principle, they were less apparent in practice.

"I mean if anyone from outside came in, they would see all sorts of policies to do with staff wellbeing, policies and groups and meetings and surveys and everything, but they're just basically covering their back as it were to show they do take this seriously. I think about probably 5 or 6 years ago the local GPs actually put in a formal complaint to the Health and Safety Executive that too many of our staff were going to them for stress. They actually complained about it. That's a serious issue. They offered counselling and all this kind of thing but that doesn't change any of the job or the pressures or the expectations or the demands. All they're saying is now you can talk about it and then hopefully that will make you feel better."

Late Career Researcher, MillionPlus Group Institution

There were **varying attitudes to lighter-touch initiatives**, such as fruit, massages or the odd lunch:

- A few saw these as small ways in which employers could **show they value researchers** and care about their wellbeing – where these were positively received it was nearly always the case that researchers had established a good relationship with their management or PIs.
- For those where this relationship hadn't been established, such efforts were always viewed with high levels of cynicism, seen as **'putting a band aid on a broken leg'.**

"I don't care really whether they paint the tearoom with a different colour paint and these cosmetic changes that they want to bring in to make our environment better. That's not really helpful to me. I want them to genuinely support all of my colleagues in a way that does not threaten their very academic existence."

Late Career Researcher, Russell Group Institution

WHAT ARE THE URGENT THREATS TO RESEARCH CULTURE?

Urgent threats (and key drivers) for poor research culture were largely identified to be:
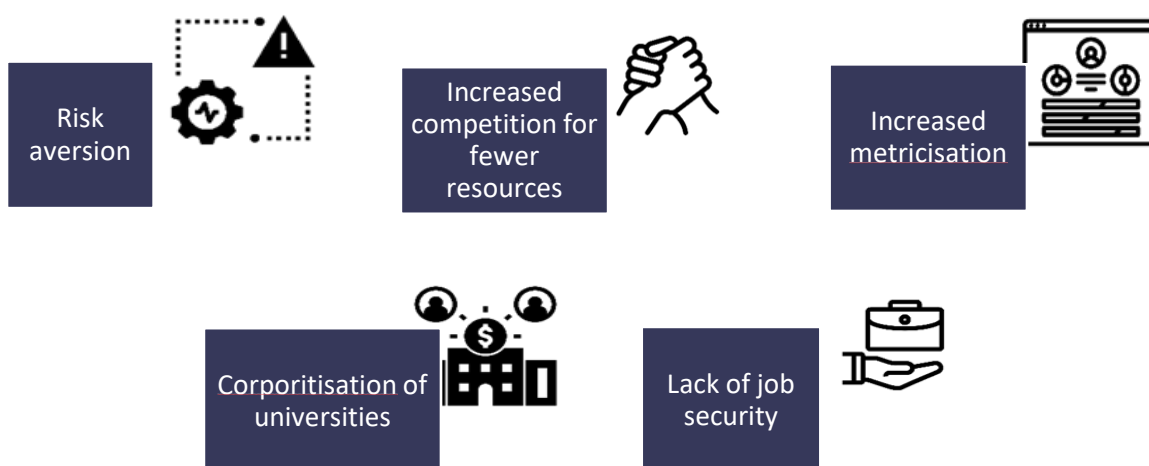
Risk aversion

- Key **stakeholders in the sector** (government, publishers, funders and institutions) were all considered to be increasingly risk-averse. This was generally seen as a barrier to creativity and diverse thinking.
- To do well in a risk-averse system, it was believed that researchers needed to be already established and part of the status quo, have significant output (measured by publications and impact factor), follow conventional thinking (not upsetting the status quo) and design research that is applicable and with instantly obvious practical application. This was widely considered to be **limiting for the broader development of knowledge**, as well as a means of **keeping current hierarchies in place**.

Increased competition for resources

- This was felt by **researchers at all levels**, from PhDs looking for their first post-doc position, to PIs seeking grant money to keep their teams employed.
- Generally, there were seen to be increasing levels of competition for grants, funds and jobs – with more people **fighting for fewer resources**. This was seen as creating conditions ripe for aggressive, unkindly behaviour and generating high levels of pressure, as researchers try to succeed and survive in an increasingly competitive environment.

Increased metricisation

- As discussed, this was seen to place huge pressure on individuals, leading to more effort being placed on **gaming the system** rather than focusing on research quality.
- It was seen by many to create a system that values outputs (often in terms of quantity rather than quality) above individuals.

Corporitisation of universities

- Puts additional pressures on institutions to act as businesses, and **diminishes previous benefits** of careers in academia by putting strain on individual workload with increased roles outside of research.

Lack of job security

- Raises the stakes for everyone in the system, which was said to lead to **more extreme behaviour**.
- **Lack of transparency** from institutions causes significant stress to individuals, due to the lack of career certainty and feeling they are continually having to pre-empt upcoming institutional policies.

Areas that felt urgent to address were regularly cited as:

- Fixing the culture of short-termism (lengthening funding awards / research contracts).
- Proving more support for ECRs.
- Reducing metricisation.
- Placing importance on the wellbeing of individuals.
- Reducing the rewards of 'playing the game'.
- Providing alternative career pathways.
- Enforcing penalties for poor behaviour.

There was a general frustration that **'stars' of the research sector were largely untouchable**, and that poor behaviour from these individuals was only acted on once incidents were in the public domain. There are many similarities here with other professions and sectors that have experienced scrutiny over working culture – notably arts and media. One respondent directly made comparisons with the #MeToo movement and how this related to science – whether science can be separated from the scientist and whether scientists' work should still be cited if they had been accused of misconduct.

WORKPLACE-FOCUSED IMPACT OF CURRENT RESEARCH CULTURE

There are various ways in which research culture appears to manifest itself within workplaces (all discussed in more detail later in the report):

- The need to 'play the game'.
- Makes working environments highly competitive.
- Long working hours, high workload and high levels of pressure.
- Bullying and harassment.
- Individualist / isolated working.
- Cutting corners and inflating the positive.
- Volatile career pathways.

These factors can lead to negative impacts on researchers as well as the quality of research outputs.

PLAYING THE GAME

Many researchers in academia referred to success in research as being able to properly play the game, this largely referred to **winning grants and publishing in high-impact journals**. For many, an increasing problem in current culture was that this game was becoming increasingly convoluted and complex, and less open to those not already succeeding in the current system.

The **REF was criticised for promoting this culture**, with institutions seeking to maximise their rankings often doing so at the expense of good culture.

"I think that some of the incentives are set up right but as soon as you try to define and codify a set of objectives, you end up with some perverse incentives which make people play to the rules. That is an insoluble problem and as with the REF where the rules keep changing every time, you have to keep changing the rules in order to get round the problems created by the last time you changed the rules. That is an obvious set of issues there for most subjects, as well as the question of the economic utility of the research that they're doing. Either, you have to claim that your research has economic utility where you're not that convinced that it does or you have to twist your research in order to create some kind of economic utility from it and that is potentially problematic."

Middle Career Researcher, Russell Group Institution

The culture of gamification of the system was considered to be present in all systems where rewards and incentives are **built around measured performance**. To do well or even survive in the current culture (for institutions as well as individuals) you needed to:

- Show good levels of publication output (preferably in high-impact journals)
- Attract funding.

In order to do both, you needed to pursue or promote the specific areas that the REF, publishers and funders cared about. With all three generally perceived as **risk-averse and impact-driven**, it was typically agreed that this current system creates high levels of unhelpful competition, which in turn lead researchers into behaviours that may not be in their or the research's best interests.

While some indicated that they held out on entering into this game-playing (some for several years), this would **ultimately lead to a career standstill**. With decreasing job security and increasing competition for limited resources, for many not playing was simply not seen as an option if they wanted to survive. These issues were not generally reported by those working in industry.

"For 10 or 15 years my career pretty much stagnated, and as soon as I decided to play the game of publishing these very high-impact sexy titles then all of a sudden I was being promoted and more easily got research grants. It's a complete game, it is a game."

Late Career Researcher, Russell Group Institution

INSTITUTIONAL EXAMPLES OF GAMING THE SYSTEM
- Allocating credit according to the institutional needs of the REF.
- Advising against research activities (for example, certain international collaborations or book writing) that are not REF-able.
- Moving low-ranking researchers into non-research roles to avoid REF.

INDIVIDUAL EXAMPLES OF GAMING THE SYSTEM:
Respondents spoke of a number of 'game-playing' practices they knew occurred. While not always a personal action, these were often practices they were aware of happening in the wider research community as a result of increased pressures.

- Inflation of results and data massaging to attract high-impact journals.
- Focusing publication strategy specifically on high-impact journals.
- 'Research by stealth' – fitting research to suit funders' current trends and needs, then retro-fitting work accordingly.
- Shaping funding applications to suit perceived funder bias, wordsmithing funding applications to stress what funders want to hear.
- Claiming research has economic utility (when it doesn't) or twisting research to create economic utility.
- Ensuring demonstrable performance across a range of personal KPI targets set by the institution.
- Pursuing REF-able activities only.
- 'Salami slicing' – publishing the same research with minor modifications in different places.

"So in the past 2 years our institution has actually changed the designations of people who are active in research because they may not have the … for REF. They've changed their job titles to actually hide them

so that they don't have to be put in REF but still they are doing research and they do have hours as part of their contract on research."

<div align="right">

Late Career Researcher, MillionPlus Group Institution

</div>

RESEARCHERS SEEN AS BENEFITTING IN THE CURRENT SYSTEM:
- Established researchers – those with significant output and recognisable names.
- Those without caring commitments (able to build up a bank of outputs).
- Those working in single-discipline research areas.
- Those able to perform well across a number of skill areas (communication, presentation, design, execution).
- Those with established relationships within the sector or with strong levels of patronage from powerful names.
- Those in a position to hold out for higher-impact journals.
- Those able (and willing) to flex their research into 'attractive' topics and or areas.
- Those from well-established 'research-focused' institutions.
- Those originating from the UK (better contacts and better understanding of the 'rules').

Behaviours regularly cited as being rewarded included:

- High rates of publication in high-impact journals.
- High-impact results.
- Research that is immediately applicable.
- Downplaying risks.
- Demonstrating economic utility.

The effect of these external forces, such as superficial results and repeated studies, are explored in the 'Impacts on research' section.

For many the need to play the game in order to survive and succeed within research was **frustrating**, as it made researchers and individuals focus time and energy away from the research and into activities that were not seen to benefit the quality of the outcomes.

ISOLATION AND LACK OF COLLABORATION

These were often cited as key attributes of a more negative working culture. Isolation was seen as particularly **damaging to researchers' mental health**, whereas a lack of collaboration was often perceived to be a key indicator that research has become less congenial and supportive and more **individualistic and cut-throat**.

ISOLATION

Many researchers interviewed referred at times to feeling a sense of isolation and loneliness. This was generally **felt most keenly by those at an early stage in their career**. While most accepted that much of research (particularly scientific lab work) was often inherently solitary, this was considered to be different from **isolation, which was seen as more damaging**, both to the quality of outputs but also the mental health and wellbeing of researchers.

Isolation presented in many forms and changed depending on the researcher's circumstances:

1. **Solitary working:** Work streams are designed for individual task completion, which suits some personalities more than others.
2. **Social isolation:** Increased internal competition and reward structures (including REF) prevent a sense of community or camaraderie.
3. **Personal isolation**: Lack of agency and support to raise issues when things gone wrong, or when wellbeing is being compromised.

Social and personal isolation were both considered to be highly damaging, leading researchers to feel a severe sense of loneliness and an involuntary perceived sense of **separation from the community** as a whole. The result of this was often that, when researchers hit difficult patches, either personally or professionally, it could be very difficult to share their troubles and receive support – creating the conditions for stress, anxiety and mental health difficulties.

This seems to be particularly apparent during PhD study. Even those with supportive supervisors often felt **isolated during their PhD,** unable to raise concerns with peers or supervisors and spending a lot of time working on their own with long working hours, which prevent extra-curricular activities.

"I think a lot of people can get really bogged down in research, and especially I can see a lot of people are shutdown in their rooms and trying to generate results, and publish but might not be overly social sometimes. I think that can be quite dispiriting. I mean I have actually never suffered from any sort of mental health problems, but I have felt the most isolated I ever have in my life in this PhD."

PhD Student, Non-aligned institution

For many, the nature of PhD led to some specific drivers to these feelings of isolation:

- Supervisor lacks the technical expertise for the PhD area (working out problems alone).
- Supervisor lacks interest in PhD area or a lack of time to properly engage.
- Internal competition amongst peers is high.
- No time for other personal relationships (friends, partners and family).

COLLABORATION

Collaboration was generally seen to be a good thing. Environments that encouraged and supported collaboration were generally perceived to have a better working culture than those that didn't. For some, quality collaboration, be it within individual teams, departments, cross institutional, or international, was an important **antidote to siloed thinking** and the negative aspects of competition.

"I think that the culture here has been reduced in terms of that there is a reduction in collegiality and multi-disciplinarity and it comes back to how people are hunkering down in bunkers. I think that that has tended to make people individually pull up the barriers that go between different things. The same is also then true about going across and building across into other departments and things like that. I think that that has got worse."

Late Career Researcher, Russell Group Institution

Some suggested that collaboration and openness were often the **best indicators of healthy working cultures**, while in more toxic environments, collaboration was often the first characteristic to be lost.

BARRIERS TO COLLABORATION

There were a number of cited barriers to collaboration:

- Co-authorship often not recognised by REF (and institutions).
- KPIs and targets set at the individual level.
- Lack of funds and security.
- Increased mono-disciplinary focus.
- Lack of time and money for researchers to travel and network.
- Poor or non-existent communal areas / no "water cooler culture".

"The individualism, the need for a research culture that brings people together and they're sharing ideas on a regular basis and trying to collaborate and cooperate in thinking of new research projects and research publications. Because that has not really been there for me over the last 10 years, I've become cut off from the best work in my field. That is partly for personal reasons that I've been less able to travel than I had been. The other way is humanity in common research culture, so attendance to conferences and workshops. If you don't have a lot of people who are working with you in your department in similar things then you need an external community. If for family or other reasons, travel is difficult, then it can be quite easy to be cut off from that research community."

Middle Career Researcher, Russell Group Institution

Collaboration was considered to be easier to achieve in working environments where the research was in demand and funding was less of an issue. Many, particularly later-career researchers, saw collaboration as a **critical component of good work** – widening perspectives, allowing for increased technical expertise, offering advice and challenging thinking in a constructive way.

"If you want to have a great impact in your research, you have to work in a collaborative way. As I was working alone, I didn't think I had the same impact."

Early Career Researcher, Research Institute

CURRENT SUCCESSFUL COLLABORATION

Some subjects were cited as being more open and collaborative than others. Often **Physics** was cited (by both those working in this area and others) as a subject area in which collaboration was highly valued and strong inter-institutional links existed. Similarly, a few cited institutions they saw as particularly pro-active in this area (**UCL, Sheffield, Edinburgh and Dundee**).

Successful initiatives that aided and supported collaboration included:

- Offering co-authorship credits within promotional criteria.
- Consortium bids for funding.
- Writing retreats / away days.
- Designing communal spaces to allow more informal discussions and networking.

- Lunchtime talks / regular meet and greets.

DIFFERENCES IN RESEARCHER VIEWS

Some middle and late-career researchers made strong connections between collaboration and collegiality. There were some concerns expressed that **these values were beginning to be lost** within the current culture, and that often it was difficult to get younger researchers to work in a more collaborative way, particularly when the **incentives don't appear to work in this way**:

"They're [ECRs] much more independent of mind, much less interested in engaging in collaborative research programmes. They just want to get on and do their own thing, and I don't know whether this is partly driven by this failed introduction of KPIs, so new people coming in realise they need to produce certain types of income and certain amounts of output, and that's what they focus on."

Middle Career Researcher, Russell Group Institution

Middle and late-career researchers were also more likely to refer to a need to have a physical **infrastructure to support congeniality and collaboration**. Often the design of buildings and estates exacerbated the issues around collaboration by further isolating researchers and requiring extra effort to meet and form relationships.

"So, I don't really know what anyone else in the department is working on until I have a conversation with them and we don't have a lot of opportunities to have those conversations. I might bump into someone on a corridor but generally I don't... unless I specifically make an effort. That can be quite isolating, especially if you're a new researcher. Everyone leaves you to get on with your own thing and sometimes I wish there was a bit more of an active community of research here."

Early Career Researcher, Russell Group Institution

Increases in the numbers of PhD students were generally thought to increase the level of competition for post-doc positions.

DESIRES FOR COLLABORATION IN THE FUTURE

Researchers were **keen for collaboration to be better supported throughout the system**. Greater levels of collaboration between teams, departments, institutions, international researchers and government and industry were all considered to be deeply beneficial for research. Suggestions for improved collaboration were often the core of ideas suggested for a more positive research culture in the future. Some of these suggestions can be found in Section 3 of this report.

CREDIT AND AUTHORSHIP

First publication and notable publications were regularly cited by researchers as being key moments in their academic careers. Publication, particularly in high-impact journals, brings important career benefits, which naturally creates some **tensions around recognition and credit.**

Several respondents referred to instances when **more senior colleagues took credit and authorship** for their work. Nearly all of these seemed to occur early on in careers, highlighting again the difficulties around the **power structures** in place within working relationships for ECRs.

"My post-doc wasn't much fun. The person I worked for decided that everything that was my idea was actually his idea but there you go. It happens in life. He just decided to get in ambitious and own my ideas. That's when it tends to happen actually. It rarely happens later in life. It's when you have a boss who decides what you're finding out is very interesting and then decides they're their findings. I survived. It happens to lots of people. There are very good academics who let their post-docs flourish and are very happy to see them flourish and seeing them flourish is their output and there're those who are very ambitious and he was very ambitious and part of his ambition required him to take ownership of stuff he wasn't really the owner of."

Late Career Researcher, Russell Group Institution

Not sharing credit and accurately representing authorship **led to researchers feeling unvalued** and discouraged. Anecdotally, there were a number of cases where this type of behaviour was considered to be extreme, and usually associated with those **very successful and powerful professors and PIs**:

"There are some highflying professors who just take all the credit for everything, and I think for those research teams that's very dispiriting if they're working so hard and not getting the credit. I think there's a lot of bitching inside those teams."

PhD Student, Non-aligned institution

"He's a really good example of somebody whose name is on every single paper, he's on hundreds of papers. He's on papers, he's on grants and, if you look at it, it's not physically possible that he is involved in all these, and nobody does anything."

Middle Career Researcher, Russell Group Institution

In these instances, **funders and publishers were criticised for not doing enough** to recognise and act on this behaviour. Some suggested that funders, publishers and institutions often propagated this behaviour by **continually giving funds and first credits to the same individuals repeatedly,** usually those already doing extremely well and perceived as part of 'the establishment'.

One issue within the current system was that funders often left it to the discretion of the institution to assign PIs on grants. A couple of respondents reported instances where grants applied for and won by one researcher got **reassigned to a more senior member** within the department or institution to PI, thereby given them the credit for another colleague's ideas and work. A small number of respondents also provided examples where their **credit became downgraded on the paper** due to senior colleagues needing the citation for their REF, this was often cited as being for the greater good of the department and recognised as such, but still demotivating for the individual.

PEER REVIEW

There were some frustrations with the peer-review process. This was particularly felt by mid-career researchers, who felt that the process was **open to exploitation and nepotistic behaviours**. Often the specificity of the subject meant that only a small set of researchers would be available to review, which led to the system being **rigged in the favour of the current establishment** and status quo.

"I think maybe a part of the peer review, an early part maybe, could be anonymised and just on the scientific proposal and protocols. Then, maybe potentially, a second round where the individual track record is taken into account, as well. I sort of feel, in research funding, it's a bit of who you know. When I

peer-review grants I'm guilty of it as well, it's kind of the first thing you do, you find out who it is, what they've done, where their last few papers have been published, what they're doing, are they big. And I think that just really cuts off the newer scientists, who are trying to fight through, get through, into that bigger canopy, sort of thing."

<div align="right">

Middle Career Researcher, Russell Group Institution
</div>

Some reviewers were thought to **reject papers that might conflict with their views / beliefs** or bring personal tensions into the review process. The practice of journal publishers submitting suggested reviewers for the peer-review process was thought to have contributed to the process being gamed. Research that was more innovative and creative was considered to do less well in this process.

BULLYING, EXPLOITATION AND SEXUAL HARASSMENT

For many, a culture of bullying and aggressive behaviour was **culturally systemic,** but it was often hard to identify and there was considered to be **grey area** between a management style that was necessarily challenging to meet outputs and deliver quality results, and one that was bullying.

"The problem with all of those things is that one person's bullying is another person's heavy-handed and constructive management."

<div align="right">

Middle Career Researcher, Russell Group Institution
</div>

Exploitation was often seen as an outcome of hard and bullying cultures, with individuals unable to stand up to dominant figures. There were reported instances of sexual harassment, but these were considered more singular and less part of wider culture, although some suggested they would still be fearful of reporting if the perpetrator was in a position of power.

BULLYING

Around a third of respondents discussed experiences of bullying within the workplace either directly affecting them or close friends and colleagues within the sector. Where this behaviour was discussed, **conduct that was humiliating, intimidating and often threatening was described**. Nearly all instances of bullying referred to those in positions of power acting inappropriately to subordinates, but a small number also reported peer-to-peer bullying within their working groups.

EXAMPLES

Below are examples of bullying experienced or witnessed by respondents:

- Careers being purposefully sabotaged, through unreasonable refusal to grant a letter of recommendation or purposefully writing a poor one.
- Assuming credit and authorship for another's work.
- Aggressive demands for long hours or specific outputs.
- Undermining ideas and ability publicly.
- Being ignored and unsupported.
- Having teaching responsibilities increased (with research marginalised).
- Shouting and undermining language in the working environment.
- Comments that isolated researchers from the rest of the team.

Most bullying behaviour was considered to be **conducted relatively privately,** within teams or departments or labs. But a small number also referred to examples where colleagues or others within the same discipline publicly sought to undermine or discredit the work of others.

DEFINITION DIFFICULTIES

For many, the issue of bullying was **difficult to define**, particularly in academic research where the stakes and competition are high. It was also felt that some researchers had a greater level of resilience to this behaviour than others, which made the scale of the issue difficult to comprehend.

"If I was sure that there was bullying going on, then absolutely, but I think bullying is very, very tricky to define. Yeah. I know there is bullying going on, but sometimes the people who say they're being bullied are also bullies themselves in different ways. I think it's a very sticky, very tricky concept"

Middle Career Researcher, Russell Group Institution

A number of respondents reported reflecting on behaviour they had witnessed in their early career which they could **clearly identify as bullying in hindsight,** but which they had attributed either to individuals not being good enough, or the necessary management steps to get things done. It may be that, as much of this type of extreme behaviour is culturally acceptable, it is difficult to accurately assess the current level of bullying within academic working culture.

"I think that there are a lot of group leaders in academia who are bullies and I've been on the receiving end of that and that culture is atrocious. I think that to a certain extent it's because very clever people who've been very successful find themselves in a leadership role and some of the research isn't going as well as it might and at that point you need a completely different skill set so I've seen people bullied horrendously in academia and I think that that is unfortunately quite prevalent."

Late Career Researcher, Industry

CONTRIBUTING FACTORS AND IMPACT

Generally those in industry and institutes not aligned within an academic structure were less likely to report bullying and harassment within their working culture – although it is worth noting that industry and institutes made up a smaller portion of the total interview sample. In **academic working environments,** the following were seen as likely to contribute to increased levels of bullying:

- Often highly personalised nature of relationships between management, PIs and researchers.
- Lack of job security and high levels of competition.
- Strong hierarchical structures that give the few a lot of power.

Again, **ECRs appeared to be more vulnerable** to these types of aggressive behaviours, but there are also some indications that **women and those from minority groups** may be more exposed and impacted by this behaviour, and feel less able to confront it when it occurs. There is some anecdotal evidence, reported by a few respondents, that those working in teams led by women were more supportive with lower rates of systematic bullying and aggression. However there were still incidents of bullying and harassment by **female PIs as well as male ones**.

Bullying and harassment were **clearly damaging to researchers' mental health**. Some only realised the impact it had on them in hindsight, others related stories in which this behaviour led them and colleagues to take time off, transfer or simply leave the profession.

"One of my colleagues, who is a really lovely person, a really great scientist, on a very prestigious fellowship, has experienced some bullying from a very, very senior member of staff in his faculty. And that was really sad to hear because, naively, I didn't think that sort of thing happened anymore. He had to take time off work, he was very stressed. So, that was a real … that was a disappointment to me, that people still do that sort of thing."

Middle Career Researcher, Russell Group Institution

INEFFECTIVE POLICIES AND FEAR OF REPORTING

While many respondents indicated they were aware of institutional procedures and protocols, the likelihood of reporting was often difficult for researchers to guarantee, for the following reasons:

- Bullying can be difficult to diagnose (both for the victim and those around them).
- Challenging and aggressive behaviour seen as an accepted part of the culture.
- Fear of career reprisals.
- Perceived lack of mental strength and ability to enter into lengthy university reporting processes.
- Fear of being marked as a trouble-maker / not wanting to rock the boat.
- Lack of faith in superiors to take action.

For some, there were real **concerns about being able to effectively identify** where behaviour goes beyond instilling rigour / high standards and into bullying and harassment.

Others suggested that, while they did have faith that their institution would take action if reported, they would still be **reticent about starting a formal complaint**, worrying that they would be naturally identified by seniors (within their department and institution) as a trouble-maker. This would not only make their day-to-day work more challenging, but could also lead to career repercussions in the future. Specialist communities were generally considered small, and reputations were thought to travel fast.

"There are procedures in place to deal with this. Whether they always work is not the case, but this is not something for which you can ever give a generic answer. They're not always working because there are complicated power plays in play."

Middle Career Researcher, Russell Group Institution

This feeling of not wanting to 'rock the boat' was pervasive, and points to a systemic culture where **bullying is in many cases tolerated as long as research funding and outputs remain high**. Putting your head above the parapet was generally considered highly risky and the implications on careers potentially significant. One respondent recounted an instance of reporting academic misconduct and being publicly maligned as well as having their future career threatened.

"A student of mine, a PhD student, has taken data from another PhD student of mine ten years ago, and published it in her own thesis. I made her aware and said she cannot do that. She rejected that. She went to the committee of my university at that time and said I would bully her, and she got other academics to work against me and tell me that if I ever make this public it will have serious consequences in terms of my own publications and everything else."

Middle Career Researcher, Non-aligned University

While some senior and late-career researchers were keen to stress that, for the most part, managers would respond to concerns or criticism in a decent and understanding way, the risks for younger researchers were too high – further contributing to this tense atmosphere. With most researchers reporting high levels of personal sacrifice for their research careers, this further raised the stakes and contributed to many researchers simply **putting up with this behaviour rather than running the risk** of reporting it, often at great cost to their wellbeing.

There were suggestions that while having formal policies and procedures in place was useful, it did mean that an incident of bullying and harassment would have needed to reach an extreme point in order to **validate the time and emotional costs of reporting**. For these respondents, less formal channels to raise and deal with this behaviour were considered to be a valuable way to help solve this issue, although others felt that the **very personal nature of making any sort of allegation** around bullying and harassment would mean that this remains a difficult area in which to flag poor behaviour.

"I think the nature of the lab, with the supervisor and the people underneath, everyone underneath, means if you're complaining about the supervisor or someone above you it's always going to be tricky. Having seen other people go through the more formal routes, it's always talked about as, 'You can begin this, but it is going to be a bit messy'. There's going to be no medium ground of, 'Here's a good place to discuss this, where someone might take it on board and have a quiet word'."

PhD Student, Russell Group Institution

EXPLOITATION

For many, the current systems of reward and recognition continued to drive these behaviours that lead to researchers feeling exploited. This was not just felt by ECRs, though these groups were generally considered to be at the sharp point when it came to long hours and less palatable tasks without any of the related recognition or glory. In some respects, more established researchers were more likely to report a feeling of being exploited, by **institutions that preyed on their passion** and personal ambitions to exhort them for other purposes (including teaching and wider teaching business).

"Creating a culture that kind of shows that we shouldn't have to martyr ourselves just because we like what we're doing. We should be able to be passionate and do something we love, but also not have to struggle, kill ourselves pretty much, over work, and also just get acknowledgement."

Early Career Researcher, 1994 Group Institution

Where ECRs reported exploitation, this was usually carried out by PIs and supervisors, although it must be noted that **many also remarked that their PIs often led by example** and they were keenly aware that they also worked significantly long hours.

Exploitative behaviours reported by PhD students and ECRs included:

- Required to work long hours.
- Required to do difficult or dull tasks.
- Having ideas or work be credited to a more senior researcher within the team.
- Required to do non-research-related tasks for supervisors.

Many of these overlap with issues around credit and authorship for younger researchers and a sense of feeling valued and appreciated.

"I think that people can be very exploitative of people who are on fixed-term contracts and that's a real problem and it's very difficult for people who are on fixed-term contracts to say actually, you're giving me too much work and I don't want to do this … They probably won't but they can just replace you if they want to."

Early Career Researcher, Russel Group Institution

Feelings of exploitation were often more pronounced for **more established career researchers.** This may be partly reflective of what was seen as the **changing nature of academia** and universities (with more time allocated to teaching, administration and other business of the university), in which research was comparatively considered less financially valuable and therefore considered less valuable overall.

Common examples here included:

- Not including grant applications as part of workload or time allowance.
- Increasing teaching commitments by stealth.
- No inclusion for activities that might benefit the research community as a whole within working allowance (i.e. peer review, editorial, working groups).

Those in **large universities** (with high overheads and high demands in terms of student numbers) and those that have not been **historically research-intensive** were considered to be most problematic in regards to exploitation.

SEXUAL HARASSMENT

Identifying sexual harassment was generally considered to be **more straightforward**, and many felt more able and likely to report bad behaviour in this regard. The wider #MeToo movement was thought to be generally helpful in **opening discussions about what constitutes appropriate behaviour**, as well as giving those impacted more confidence to come forward. But there were still issues around power dynamics making these instances difficult for some to report, particularly ECRs.

"If there was an instance of sexual harassment in my research team, would I feel safe to speak up or report it without fear of reprisals? It depends who was the perpetrator. It is very specific. It depends how important they are in terms of producing research outputs, or maybe they're bringing in research money. If they're important in the department then… no I wouldn't be able to speak up."

Female, Early Career Researcher, Non-aligned institution

While in general sexual harassment was considered to be easier to identify, there were still **grey areas** for respondents, particularly those in a later stage of their careers. Some of these respondents suggested that they felt younger researchers were able to call out this behaviour, but this was not necessarily reflected in the responses from younger researchers in this study.

"I think that things are becoming easier, but it's still very complicated. I feel really this is very complicated because of my generation. For someone younger than me, sexual harassment is very clear to them, but for me at my age I'm used to the fact that older colleagues say stupid stuff, and it's not as clear-cut to me, so I don't know what to say about sexual harassment. For my younger colleagues, they're quite willing to call people out on that in a way I'm not familiar with. They'd do that without fear. It would depend on how they

perceive the power structure to influence the dynamic, but there are more mechanisms to deal with that than any of the other cases you mentioned."

<div align="right">

Female, Middle Career Researcher, Russell Group Institution

</div>

This area, like many other areas of destructive behaviour present, appear to be supported by the huge perceived disparities in power between professors and senior management.

WORKLOAD AND PRESSURE

High workloads and long working hours appear to be perceived as **part and parcel of research life**, but with increasing demands from the institution and a feeling of lower job security, these were both issues that were seen to be **increasingly impacting on researchers' wellbeing**.

WORKLOAD

Workload was felt to be generally on the increase, attributed to a number of different factors including:

- Metrics that value a high level of output.
- Introduction of new frameworks such as TEF (Teaching Excellence Framework) and KEF (Knowledge Excellence Framework).
- Changing role of universities:
  - Increasing teaching commitments
  - Increasing student expectations
  - Increasing business commitments.
- Increasing requirements from funders and government to demonstrate impact and value (including measures such as public engagement).
- Increasing competition for grant income.

A small number of respondents reported that workload and working hours were not excessive, but these were the minority and often in very specific situations that supported this.

There were a number of tensions reported here. The changing role and focus of institutions, alongside increasing demands from students, funders and government to demonstrate their value were increasing and **changing the workloads of researchers within academic institutions**. For the most part, industry workplaces and those institutes not closely aligned with academic employment structures appeared to offer a more balanced culture around workload and long working hours.

"There's obviously pressure on academics to teach and there's pressure on academics to publish and there's pressure on academics to get research income. Yes. And as a consequence of those three things and plus we all have administrative jobs to do. So as a consequence of these things there's very little time to actually think, and if you are sitting down thinking you're feeling guilty about it because you should be doing one of those other things that you're supposed to be doing … and so I think there's … in this climate there's less time for academics to think and I think actually that thinking time is really valuable."

<div align="right">

Middle Career Researcher, Russell Group Institution

</div>

For those in academic environments, a number of **recent policy changes** exacerbating an established culture of long hours and heavy workloads – particularly higher student fees causing extra demands on time due to

heightened student expectations. This combined with a lack of job security (short-term contracts perceived to be on the rise and those in permanent positions worried about potential redundancies) were creating the conditions for high levels of pressure and stress.

Lots of PhD students and ECRs suggested that they felt under significant pressures to work long hours from their superiors, and many recounted instances where they had been told to work harder or longer hours **in order to stand a chance of winning a lectureship**.

"Well, the fact that my supervisor always reminds me that PhD is not a nine to five job and I should be thinking about it all the time."

PhD Student, Russell Group Institution

For many, the chance of having a permanent position in the future was worth long hours and heavy workload in the present. Indeed, many older researchers often referred to the moment when they received a permanent contract as a high point of their career – some referred to it as **'the Holy Grail'.**

"I do about probably 60-hours-a-week constantly, and I'm very much told, 'You need to be doing more and more. You need to be working above your pay grade to really get evidence that you can do that job, so then you can potentially get some kind of lectureship'."

Early Career Researcher, 1994 Group Institution

This environment of long hours and presenteesim was considered to make life tricky for those with care commitments, particularly women returning from maternity leave. This was acknowledged as a concern across genders, but having greatest impact on females where the majority of caregiving was still felt to lie. Naturally, this was also linked with poor mental health and wellbeing.

"Every year we have a staff survey and every year colleagues complain in large numbers about problems with work-life balance and we do nothing about it. We say that we can't do anything about it, and partly we say that we do encourage people to take parental leave but it doesn't address the fundamental attitudes that if you're not using every waking hour to research and publish then what are you doing? Which I think is pervasive in university life. It's not just my current employer… it's the same for colleagues who work in other institutions. I'm sure there are other things which affect people's mental health and wellbeing around gender and sexuality and race and ethnicity but the bit that I know most about has to do with parenting and caring responsibilities."

Middle Career Researcher, Russell Group Institution

FINDING BALANCE: TEACHING VERSUS RESEARCH
Research work is clearly not done in isolation. Many reported tensions in managing and progressing their research alongside **increasing levels of teaching, admin and university business**. With student expectations, bureaucracy and the need to prove impact and value to funders and government all on the rise, many suggested that to be an active researcher you needed to work long hours.

"Throughout, really, the issues that have been most challenging are balancing different aspects of the job. Because, doing research at the same time as teaching and quite a lot of admin, are very different things, and it's very difficult to get the right balance between them, particularly because research requires a very heavy commitment. So, I think that balance is the biggest challenge."

Middle Career Researcher, Russell Group Institution

Many talked about the balance between research and teaching. There appear to be a few different ways in which institutions were assigning these, including requiring those that brought in lower amounts of research funding to undertake higher amounts of teaching – **making it particularly difficult for those individuals to kick-start their research careers**. While some funders did appear to stipulate a buy-out from teaching within the grant, these were often not enforced, as researchers felt that this would reflect badly on them or make them lose approval from management. Some were also reluctant to place more teaching responsibilities on colleagues as a result.

Some respondents noted their institution was trying to help through **workload modelling** but, while this was sometimes useful as a way of being able to legitimately refuse to take on additional duties and working groups, the issue remained that for the most part academic staff are working significantly over-capacity and the current financials do not allow for enough staff or support to change this.

"There are far too many things academics are now supposed to be good at all at the same time. I think demands of admin … increased demands of contact hours because of TEF mean those colleagues who have a high student load can't be doing in term time as much research as they're expected to do, which means they are spending weekends and all their summers just catching up with the research that should have been part of their weekly workload, and therefore I can see burnout on the horizon for so many. There is no work-life balance for many of my colleagues."

Late Career Researcher, Russell Group Institution

While many suggested strongly research-focused establishments were more immune to the threats to research time, some respondents from these institutions did not suggest that this was true. Indeed, **most institutions appeared to be struggling with increased student expectations** and difficult recruitment conditions (some hoped that this might improve once institutions were through the demographic dip).

NEEDING TO BE A "JACK OF ALL TRADES"

Something suggested by many respondents, and clearly contributing to workload and pressure, was how the current research culture was seen as requiring academic researchers to demonstrate success across a **wide range of skills**. For many, their career progression and promotion was dependent on being able to measure success across a variety of often highly differentiated skills.

These included:
- Writing grant applications (and understanding the necessary wordsmithing required).
- Presenting and communicating work.
- Networking.
- Research knowledge and skills.
- High levels of specialist subject knowledge.
- Teaching.
- Pastoral care (often felt most strongly by women, who were also more often cited as taking on this role)
- Writer and agent.
- Marketing (student recruitment onto new courses).
- New course development.
- Management and leadership.
- Budgeting and finance.
- PR / public engagement.

- Project management.
- Careful negotiation of organisational politics (i.e. institution, funders, government and field).

"Everyone in their job has to multi-task, but this is a bit different. This is a bit absurd, where you go from lecturer, you need to be a teacher, you need to be a scientist, you need to an accountant, you need to be a politician, you need to be a very skilled writer, an excellent communicator and all of those different things take up a bit of time, so that's possibly in second place why I will eventually leave the job. It's pulling you in too many directions. Coming back to research, that makes doing research tricky, because to really do the very best research, you need clear blocks of time. Having 40 minutes free, or an hour, just doesn't cut the mustard. There's been research to show that you have to have these blocks of time to really get into flow and start to be creative, and come up with good ideas that will really generate novel research. Disrupting that with meeting… I haven't even mentioned management. As a university professor, you have to be a manager of people and projects."

Middle Career Researcher, Russell Group Institution

For some, a tension here was that, while academic researchers were required to be multi-skilled there was often **very little training and support offered to help them develop these skills.** Management and leadership was an area regularly cited as one that would benefit from greater support and training.

As mentioned previously, the **availability of good lab technicians and administrators** was seen as an important factor in being able to effectively deliver across high levels of competing requirements. In these instances, respondents often talked about the need to **properly value these key supporting roles**, also treating them better within the current system.

PRESSURE

High levels of competition and a lack of job security were said to create the perfect conditions for a pressurised working culture. While the pressures felt by PIs were different from those experienced by PhD students and post-docs, the root cause is potentially the same: **scarcity of positions and resources**. For many, the personal passion for their research and high levels of ambition made the stakes feel particularly high and the pressure intense at a range of career stages.

A small number of more established researchers suggested that in some cases these extreme working hours and high levels of pressure provided a useful measure to weed out those academics that simply 'aren't up to it'. **'Sink or swim' was for many seen to be the prevailing culture**, but many disagreed that it was an effective way of nurturing talent, creating environments of fear rather than of creativity and a desire to produce good research.

"I think that younger leaders could be given more support, I've seen that work, rather than being put under sink or swim. They can be given more support. It's very cut-throat, science. You need to get your publications to be REF-returnable and that puts people under a huge amount of pressure and unfortunately, that does lead to lab environments that I don't think are particularly… people who are working under a fear of not delivering, rather than a desire to produce good results. I think that that is a carrot, not a stick."

Late Career Researcher, Industry

Particularly negative cultures were often seen as due **to key performance metrics being passed down directly to individuals**. This was considered to create a particularly toxic environment between researchers at all levels in the institution, while creating high levels of pressure that were closely linked to stress and anxiety.

Shorter research grants and awards were also thought to contribute to a sense of pressure – with the need to produce fast results and outcomes in order to satisfy the needs of employers and funders.

PIS

PIs regularly suggested that they experienced **high levels of stress around securing grant funding**. For many, this was as much about keeping their research teams employed and looked after as it was about personal gain.

"I'm very successful at winning funding, but it still doesn't mean that I'm not stressed about it. As soon as I've won a grant, I'm thinking, 'When does this end?' and, 'When is the next one coming along?'"

Middle Career Researcher, Russell Group Institution

POST-DOCS

For post-docs and ECRs, pressure was often reported to come from the need to secure enough output and funding to **achieve a permanent contract**. Some also suggested that **financial constraints pushed projects** to be completed in faster turnaround times.

"I think a lot of the time there can be huge pressure on early research scientists, to balance trying to progress a research career with a life outside of research. Especially in some of the academic labs that have a very demanding PI, they might feel very isolated."

Early Career Researcher, Industry

PHD STUDENTS

PhD students often reported pressure in terms of **working through their research area without enough support or technical knowledge from supervisors**. Having to grapple with problems and issues alone, alongside other commitments, was regularly cited as a cause of stress and pressure for these respondents.

Many indicated that they were already thinking about future pressures and were **struggling with the pressure to publish from an early point** in their careers. Many senior researchers indicated that pressure for PhD students to publish was a significant change over time.

"Sometimes you just see the thread re-tweeted on Twitter and sense that profound sense of insecurity, and pressure with the academics that you either publish or perish. Otherwise if you don't have publications during PhD time you won't be able to get a post-doc, you won't be able to get funding and you're done."

PhD Student, Russell Group

Continual pressure of this kind was considered to be **damaging to researchers' mental health** and wellbeing – often leading to researchers leaving the sector and, in a small number of extreme circumstances, taking their own life.

"Some of the gloomy things I've said about management here, you could probably find similar examples elsewhere. In [a Russell Group university] some guy threw himself off the roof. There was a guy committed suicide in [another Russell Group university]. There's bad practice throughout the entire sector. There's evidence of these things happening. The guy who threw himself off the roof … he was probably the person who had submitted more grant applications than anybody else in his department, but hadn't succeeded in bringing in sufficient money for the managers. This is what had happened. This individual was trying but not successfully. Instead of taking him to one side and saying 'Look, maybe you're putting in too many grants. Maybe we need to buddy you up with someone to slow you down so you become more successful' they just kept ramping the pressure up about you need to bring in more money, which meant the guy was trying harder and harder, so the result was in the end he snapped and took his own life."

Middle Career Researcher, Russell Group Institution

ISSUES OF REPRESENTATION AND DIVERSITY

Issues around diversity and inclusion related to 3 key issues:

Representation	Inclusion	Equality

REPRESENTATION

Representation was still considered to be a **significant issue**. While the sector was considered by some to be more diverse than it has ever been, it was still thought to be significantly behind and possessing a **leadership that was generally white, male and heterosexual**.

"I think my experience is the UK struggles with that in academia… I noticed that in my building, the majority of… a lot of the senior academics are white men and there are very few people of colour. There are very few people that are trans or openly gay or queer or lesbian. Yes, it's not as representative of the UK demographic."

PhD Student, Russell Group Institution

While representation of women was thought to be improving, some suggested that generally it was a **specific profile of women that could be seen in leadership positions** – namely white, from affluent backgrounds and without children:

"There are many white female professors, but they've probably come from very different backgrounds to what I've come from. Most of the ones I know don't have families either, so it's difficult to compare like-for-like."

Middle Career Researcher, Russell Group Institution

Athena SWAN[1] was generally considered to have been a beneficial initiative to help some issues of representation and inclusion within academic departments – although in some cases the implementation of the charter still felt **tokenistic** to researchers, with many institutions still failing to adequately remove the obstacles that may impact women specifically within the key points of academic career development. With

---

[1] https://www.ecu.ac.uk/equality-charters/athena-swan/

childcare still seen to fall primarily to women, it brought practical issues such as arranging childcare around working commitments, with meetings often still arranged within drop-off times. This was coupled with issues of performance increasingly being measured by output, meaning those choosing to work part-time show lower output in metrics that **don't take account of their circumstances**.

Interestingly, while Athena SWAN was mentioned multiple times by respondents, few referred to the Race Equality Charter (REC)[2]. This **could suggest the REC is less established or prioritised**, although it is possible that some see this as interchangeable with the Athena SWAN charter.

Similarly, one respondent drew attention to the fact that disabled researchers, especially those with more severe disabilities, are **greatly underrepresented in academia**, which to some extent reflects the many barriers to employment they face in general. This respondent also believed that some disabled researchers felt pressure to overcompensate for being perceived as less efficient and effective workers and they needed to have even better credentials than non-disabled researchers to stand a chance of competing with them.

INCLUSION

The majority of respondents interviewed were **strong proponents of diversity within the sector**, believing that it helped enrich research:

"Academia can only thrive on diversity and having people from different backgrounds, different experiences, different perceptions, different points of view coming on board, so it's only going to hurt ourselves if we're not breaking down those barriers and bringing everyone in."

Middle Career Researcher, Russell Group Institution

There were few reported incidents of directly sexist, racist or homophobic behaviour, but there were suggestions that **unconscious bias played a significant role** in the ability for those from diverse backgrounds to succeed within the current academic culture. Unconscious bias was thought to be at play within the decisions made by grant panels, funding committees, journal publishers, institutional leadership, department heads and supervisors, all of whom were predominantly perceived to come from white and affluent backgrounds and more likely to provide rewards and patronage to those from similar backgrounds and circumstances.

"It's the white boys with the blonde hair and blue eyes get more attention and are pushed forward more than others. I think people from other backgrounds, because they're not always minorities, but from other backgrounds can be left behind, and I don't know if that's on purpose or if it's just that's the way things go, but sometimes it feels like people from other backgrounds have to fight to make it through. I know a lot of white guys with blonde hair and blue eyes who are very nice people, but it seems to be them who get the attention and drive, or are driven to push forwards, and others are not so."

Middle Career Researcher, Russell Group Institution

In addition to unconscious bias, some felt that **current employment and reward systems** made it difficult for those that:

- Could not afford the low levels of pay and instability during early careers.
- Needed to have career breaks for caring responsibilities.
- Cannot move around easily (caring responsibilities or cannot move institutions easily).

---

[2] https://www.ecu.ac.uk/equality-charters/race-equality-charter/

- Required additional support and adjustments to apply for jobs and work effectively / efficiently.

This is discussed in more detail in the later section on 'Differences in experiences'.

EQUALITY
Less representation from minority groups and systems of reward driven by patronage and small numbers of individuals in powerful positions generally led to **perceptions of inequality**.

RACE
Some, though not all, BAME respondents felt their experience of research culture (and ability to succeed within it) was **intrinsically harder than their white counterparts**. Many felt as though unconscious bias often prevented winning grants and funding, and some suggested that an **anonymous application process** would be greatly beneficial to help BAME researchers succeed more against such panels.

"The fact that I am somebody from a group that you'd call the black and ethnic minority groups kind of makes it again feel that maybe that's why the story behind you not having as much access as you wanted to, but then there is no concrete data to support that, but that's the impression and the feeling … especially also when we make applications, I wish that some of these applications could be reviewed double blind, which means that the applicant doesn't know the assessor and the assessor doesn't have a record of the name of the applicant, so that because there is the impression that you have that's some people once they know that this name is not from here they might be more judgemental in does he or she have the ability to do this at all. So the equality, diversity, inclusion practices, in the assessment or publication is a concern for me."

Late Career Researcher, University Alliance Institution

Worryingly, these respondents often also appeared to feel **less able to report bad behaviour** than their white colleagues. One respondent linked this feeling directly to a concern that they would be less likely to be believed due to their race.

"So especially again going back to my identity as somebody that is not white, we tend to think that anything we say is not really considered on the same level of merit as if someone who is from here says the same thing."

Late Career Researcher, University Alliance Institution

Discrimination was often felt to be covert – taking the form of being overlooked for promotions, not being properly credited for work or mentored by senior academics, rather than obvious racist behaviour. This in turn made it more difficult for researchers to call out and report.

"It's not overt. It's things like, when it comes to promotion time, getting support from senior people. When people want to get even support to do their research, to get the backing of senior colleagues or even get credit for driving a research project of their own, and showing initiative and independence, sometimes that's not credited properly. Those are the main discriminatory factors I've seen."

Middle Career Researcher, Russell Group Institution

Even BAME respondents who had not directly experienced discrimination recognised their workplaces as **environments lacking in diversity,** with a majority of staff and management who were white:

"My impression of my environment as I tell you before, it's very friendly and it's quite open. I never experienced any issue with race at all… Overall, I have to admit that there's a majority of white people, but there are people from minorities. If you go again to management… yeah, in my centre, you see also, there's also the same thing. White people. You know it's something that is a white elephant in a way."

Early Career Researcher, Research Institute

Ethnically un-diverse staff bodies often presided over more diverse student bodies. This occasionally led to **staff comments that connected a student's ethnicity with their academic performance**.

"There's been some comments from members of staff in terms of performance of students who have been unreasonably based on their race or nationality and management doesn't seem to answer to those comments or put things clear."

Early Career Researcher, University Alliance Institution

Students, **recognising shared experience,** were more comfortable discussing issues of race with BAME or international academic staff members. Having a more diverse staff body was therefore felt to improve academic culture at the student level as well.

"I hear a lot from our students, while my colleagues don't hear those complaints. The reason for that is they feel more coming to a person, who is, okay, I'll put it in quotes 'foreigner' and talk to that person, because they believe she has experienced what they are experiencing now. I think there is a place to improve the whole environment in that sense."

Middle Career Researcher, Russell Group Institution

GENDER

Women were thought to be disadvantaged by career tracks that required long working hours and significant output (often at a time when women might consider starting families). It was considered **difficult for women to balance family and work commitments,** although sometimes small changes (e.g. only scheduling meetings from 10am) made a significant difference for working mothers (parenting issues were rarely discussed for fathers). This was primarily highlighted by female researchers who had directly experienced these difficulties, but was also acknowledged more widely among other respondents.

While attitudes generally around the effectiveness of Athena SWAN were mixed, many female respondents indicated that this had **led to an increased number of small changes** to the working environment that could made a significant difference to them.

While things were thought to be **slowly changing for the better** for female researchers, established ways of thinking were still often prevalent and articulated, particularly by senior management.

"I'm thinking of one individual in particular a number of years ago who commented that individual X would've done so much more if she hadn't stopped to have two babies, and to my perennial shame, I didn't call her out for that, but that kind of attitude is around in some of the higher areas. I would, because at the end of the day, I'm in that stage of my career where I don't really care."

Late Career Researcher, Russell Group Institution

LGBTQ+

Some LGBTQ+ researchers we spoke to indicated that they **didn't feel comfortable being open** about their sexuality with colleagues. There were also some examples cited in which LGBTQ+ researchers potentially felt placed in difficult circumstances as a direct result, such as being placed on secondments to countries less tolerant of LGBTQ+.

"As an LGBT person, when you're not out to all your staff, or you start at a new place for example, you always have to take a long time to assess what the culture is. Are these people going to be inclusive? Are they going to be accepting and that whole process is... it's exhausting ... I think being somewhere where I knew that everyone was going to be supportive means that I can be more open with people, I can have better relationships with people, and do better science."

PhD Student, Russell Group Institution

DISABILITIES

For those with disabilities, there were **strong suggestions that research culture was one of ableism**. It was thought to be significantly harder for disabled researchers to progress their careers and do well. This was seen in a **general lack of adaptations to working conditions,** the requirements in early careers to win multiple short contracts (often in multiple locations), a perception that disabilities would make researchers more difficult to manage and less productive, and barriers in the current funding processes.

Behaviour that was often unintentionally exclusive was reported:

"A common one is during talks and the speaker will say 'Well, I'm not going to use the microphone. You all can hear me, can't you?' This is not intentional, but what you do is you automatically exclude the people that have got auditory processing issues, either because they're deaf, hard of hearing or because they've got cognitive dysfunctions. Whatever it is, but the point is how comfortable would you personally be to put your hand up in a room of 100 strangers to say, 'Actually, I do need you to use that microphone'?"

PhD Student, Russell Group Institution

Small adjustments were regularly reported to make significant differences to those with both physical and mental disabilities, but often this could be **easily forgotten by colleagues and managers**.

Many suggested that **tight constraints on funding** made it very difficult for those with disabilities to be as successful in applications as others, as their bids would usually require additional allowances for necessary adjustments, such as hotel rooms, assistants, transcribers:

"The thing that everybody's saying is, 'Well, actually you just don't bother applying anymore.' You have a look at, 'What is it that they will fund? What is it that you can legitimately ask for within that funding?' If that doesn't take into account people like a research assistant, a transcriber, an extra night in a hotel for accommodation purposes or whatever, then they just don't bother applying because they know they can't do it."

PhD Student, Russell Group Institution

With funders seen as increasingly cost-sensitive, many felt that disabled researchers were **directly discriminated against in the current system**.

One disabled researcher reflected that even though the move towards greater diversity and equality was positive and needed, it shouldn't mean that different minority groups could be treated the same.

"Yes, and disability's different because with disability you have two things, which are quite … fairly specific to disability. With disability, you have to have reasonable adjustment and also, to a lesser extent, public organisations have to have a duty of equality but certainly a reasonable adjustment is very different. You don't have to have reasonable adjustment to people's ethnic background, and this is really central. If a person's not into disability they probably don't understand it, so they treat you more as if you're an equalities … it's an equalities issue. It isn't. With disability, you also are entitled to reasonable adjustment and it's quite different."

Early career researcher, MillionPlus Group institution

Disability **differed from other dimensions of diversity,** as it required more support and enough reasonable adjustments for disabled researchers to be able to work and function. Therefore, institutions without a specific focus on disability in their diversity initiatives were likely to further reproduce inequality. For example, a university employee focusing on improving the experiences of women in academia was less likely to be able to provide the same required level of support for disabled researchers as a dedicated disability officer.

MENTAL HEALTH ISSUES

It was **difficult to find and recruit researchers that self-identified as having a mental health** disorder, although significant numbers did report feelings of anxiety, depression and stress (currently or historically).

In some cases, respondents reported that it was only in hindsight that they were able to recognise that they had been suffering from these feelings. A small number also suggested that they would have been **concerned to reveal these issues for fear of being perceived as weak or "not up to it".** The highly competitive nature of the profession was thought to make it less tolerant of these types of mental health issues (discussed under 'Lack of diversity' within Section 2 of this report).

NEURODIVERSITY

One respondent had a sensory-processing disorder and another an autism spectrum disorder. In both these instances, **institutions were quick to provide support and equipment** (e.g. noise-cancelling headphones) and make necessary adjustments. But as with all mental health problems, disclosure rates were considered by a number of respondents to be lower than actual rates.

DISABILITY

Those with reported physical impairments often articulated a range of ways in which they were adversely impacted within the current working culture:

- Mobility issues can make travel to conferences (particularly international) difficult.
- International impact can be less easy to prove if travel abroad is more challenging.
- Conferences and campuses are not adapted for those with physical impairments.
- Disability policies and procedures can be found lacking (or non-existent).
- Concerns that jobs feel harder for disabled researchers to win.
- Funding application processes are difficult for those who require information to be received, shared and presented in different forms (e.g. due to visual impairment).

"Yes. Oh, it's just disgusting and it's everywhere. The buildings are inaccessible. We were at an equality event fairly recently. There were 11 funded projects across the UK looking at equality and inclusion in academia, and ten of them were on gender and one was on disability. The people approached … professors who were at this equality event approached the person on the disability poster and said, 'I wouldn't employ a disabled post-doc'. The majority of the casework taken on by our union is disabled people, people experiencing long-term ill health, particularly people with mental health issues that are triggered, exacerbated or impacted on by the working conditions where they are. Yes, no ableism is shocking everywhere but I do think that it's particularly bad in academia, especially around mental health."

Post-doc, Universities Scotland Institution

It was suggested, primarily by disabled researchers but also those without disabilities, that physically **disabled researchers often found it more difficult to get jobs** due to:

- Logistical reasons: interviews can be harder to get to or no adaptations are made.
- A perception from employers that a disabled researcher is likely to be more costly (due to adaptations) and less productive as a direct result of their disability.
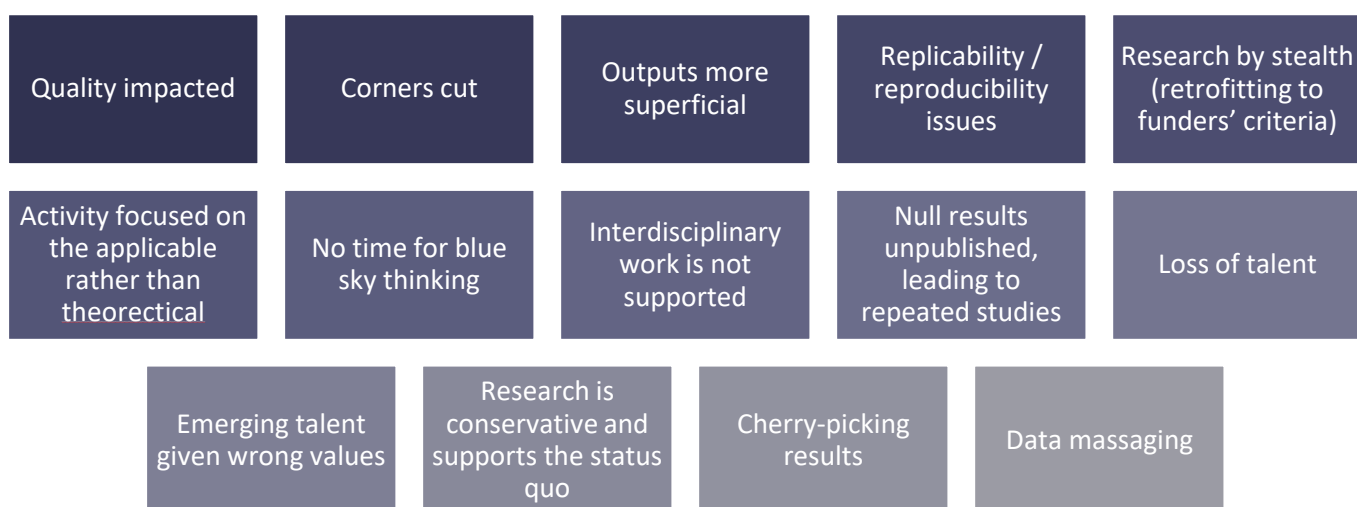
Some suggestions for improvement included **reasonably simple changes**, especially those that took advantage of technology, to make work more accessible. This could include remote meetings and more diverse ways of sharing information – especially accessible formats of documents when submitting journal articles and applications for funding.

In a system where competition is high and resources are scarce, many suggested that this created a natural culture of ableism, potentially **leading those with disabilities to think twice before disclosing their conditions or speaking out for adaptations or against poor behaviour**. This was again cited directly by respondents with disabilities, as well as expected to be the case by some other researchers.

IMPACTS ON RESEARCH

For the most part, respondents indicated that current research culture was considered to currently **impact more on individuals than on the quality of research output itself**. However, the requirements to meet a range of specific and individual KPIs in order to survive and succeed in the sector were thought to be **increasing behaviours that were not in the interest of science and research**.

There was a strong sense that the system increasingly places value on attributes that matter less, but that are **easily measurable**. Key impacts of the current culture on research were often cited to be:

Quality impacted	Corners cut	Outputs more superficial	Replicability / reproducibility issues	Research by stealth (retrofitting to funders' criteria)
Activity focused on the applicable rather than theorectical	No time for blue sky thinking	Interdisciplinary work is not supported	Null results unpublished, leading to repeated studies	Loss of talent
	Emerging talent given wrong values	Research is conservative and supports the status quo	Cherry-picking results	Data massaging

PERCEIVED IMPACT ON QUALITY

While a small number suggested that the results of this culture could be observed in the increasing number of retractions, others felt that **generally the quality of outputs did not suffer,** largely because researchers themselves were sacrificing their own wellbeing and personal time to ensure that the science remained solid.

Still, few doubted that working continually at this level of speed and output would not impact quality in some way. Researchers that are tired, stressed and under significant amounts of competing pressures are **not able to complete their best work**. One respondent colourfully described this situation as "a runaway train whose wheels are about to come off", with many feeling that the research community is holding things together, but for how long?

The current system was thought not to afford any time to properly consider and contemplate research projects. **Space and time to think and reflect** was now perceived to be a largely unobtainable luxury rather than a key foundation for quality research, which was for many a significant concern.

CUTTING CORNERS

While most respondents did not think that the current culture was leading to poor-quality outputs, the increasing speed required to turn around results and the pursuit of publication in higher-impact journals was considered to make papers shorter, lower in detail, harder to replicate and potentially using data which is **'just about good enough' rather than fully watertight**. Sometimes this was thought not just to stem from above, but from individual pressures to deliver.

There was a definite feeling from many respondents that research is often being completed at too fast a pace, with these **fast turnaround times** often driven by:

- Pressures to publish first.
- Funders fast deadline requirements.

- Institutional REF needs.
- Institutional funding needs.

"I mean the demand is always for high-quality research super-quickly but of course when there are deadlines and stuff they take priority. I can think of lots of recent examples where it's been like it has to be done first and even one example where someone has said look if I do it in that time it's not going to have had the effort in it that it needs, but the priority has been in getting it done quickly... Validation work is cut because people want to be submitting before other people submit. If your big golden story that's going to put you on the map gets taken by someone else, you're back to square one."

Post-doc, Russell Group Institution

Few reported evidence of serious manipulation of data, and most were keen to stress that while they often felt timescales were too rushed, the quality of the science within papers was generally sound. However, the **short timescales and focus on efficiency** often led to additional controls or steps to make the experiment absolutely foolproof not being completed.

"When I think of cutting corners, I think of quite serious manipulation of data, which isn't present in our lab. It's more like extra controls that would prove your hypothesis further and give it more concrete evidence. Maybe you could have done three steps to prove your experiment was foolproof, but you did it just once or twice, but not in the sense of you changed the data around to make it fit what you want to see. That's not present in our lab."

PhD Student, Russell Group Institution

However, some did suggest that **working at this rate was simply not sustainable,** and while corners might not currently be significantly cut, this could change in the future as researcher goodwill and resilience continues to be tested.

MORE SUPERFICIAL OUTPUTS

The **current system was considered to reward quantity,** which leads to increased levels of publication. A small number suggested that with so much being published the quality screen might often be lower than it could be, and that this often led to the **same studies being republished** in different places with small amends ('salami slicing'). Anecdotally these practices appeared to be more prevalent for humanity and social science researchers.

"A lot of my colleagues are very smart, so they've sussed out you can do salami slicing research where you publish the same article with minor modifications in different places, and it looks like they have a lot of publications, but they're very thin in terms of the difference between each other"

Middle Career Researcher, Russell Group Institution

Some suggested that with increased levels of publication, it felt as though the **screening processes** for publication were likely to be compromised. With the rewards of publishing in a high-impact journal so high, both at institutional and individual levels, many felt that research outputs were being designed and manipulated to best appeal to these publications.

With this perceived focus on impact, as well as financial constraints, producing research outputs quickly was common – resulting in short, report-style papers, sometimes seen to skimp on methodological detail or data.

REPLICABILITY / REPRODUCIBILITY ISSUES

Results from short report-like papers were considered to be more difficult to replicate. While publishers were cited as being increasingly pro-active about requesting data sets to accompany publication, these also often were seen as **missing valuable information from which to replicate studies**. There were reports often of these data sets being considered and collated too late (often after the findings have been submitted) which led to errors symptomatic of **sloppy record-keeping**.

"One of the previous people in my lab in my PhD lab was a bit … I didn't spend that much time with her, she left soon after I started. But when she was writing a paper, for example, my supervisor would ask her for the controls and she would say 'oh, I didn't do them' and then the next day would appear with a graph, showing the controls. I think there are a lot of examples of that type of thing, where I would imagine the data was either pushed from somewhere else or was completely faked. That was very much about speed. But that wasn't necessarily pushed on from the supervisor, it was definitely a personal thing that this researcher was doing, to get a better outcome, I guess, for her."

Post-Doc, Industry

A lot of time was considered to be lost attempting to replicate findings, and for some PhDs this often formed a significant part of their workload.

While many had experienced issues in replicating previous studies, a number of these were resolved with enough time and patience. This area was **not often raised unprompted by respondents,** many of whom did seem to believe that researchers were acting in good faith and not knowingly hiding questionable research practices.

Where authors were willing to engage with other researchers on issues of replicability, solutions were usually quickly identified, but responses to these types of enquiry could often be given short shrift or simply ignored.

"It was incredibly frustrating, so you read the paper, you reproduce the methodology, so my research area is mostly in numeric and modelling so I write the code, all looks fairly simple, I think how could it possibly fail and it fails. So you can't contact the author and ask them for detail and in fact I asked him for a copy of his code and they were unwilling to give the code. I asked but why can't I reproduce the results and they said 'Well it's very sensitive to different materials parameters' and that's rubbish."

Late Career Researcher, Russell Group Institution

RESEARCH BY STEALTH

Many researchers talked about having to conduct 'research by stealth' – retrofitting their own research interests to the **topics and areas that funders appeared willing to fund**.

"Getting funding… you feel you're interested in it but you've got to twist it in a way that's going to make people want to pay for it, which sometimes feels a bit… I read a blog post on it once. Research by stealth it's called, I think. Its stuff you're interested in but you only get it paid if you can make it into something which your funders care about."

PhD student, Russell Group Institution

There was frustration from many that current grants and funding streams didn't place enough emphasis on theoretical research. This was considered to narrow the focus of research outputs and **prevent real innovation and creativity**.

In order to really contemplate improvements, researchers felt that they needed more time and space to think. In the constraints of the current culture this could not generally be supported.

"There's clearly some underfunding for blue-sky research, which is a big issue. There's a drain too for us, so some pressure to have applications and to have some impact within a short amount of time, which is not reasonable when you do fundamental stuff because it takes years sometimes to get to some applications."

Middle Career Researcher, 1994 Group Institution

INTERDISCIPLINARY WORK NOT SUPPORTED

Respondents suggest that while interdisciplinarity was often widely talked about as being important for institutions, the **current structures and reward processes make it difficult** for quality work to be achieved in this area. For a small number of trans-disciplinary researchers, identifying as such was felt to have a significant impact on their careers.

"I don't have a career, I made the decision not to have a career. Because, to have a career in academia means that you really do have to stick to disciplines, as much as they say that you don't."

Middle Career Researcher, Russell Group Institution

Collaborating with different disciplines was generally considered to be a valuable and mind-opening exercise, but often one that had challenges to overcome as:

- It takes time.
- It takes an openness to potentially change approaches.
- Often disciplines can be locked in a traditional way of doing things.
- Issues around credit and funding allocations are not easy to resolve.

REPEATED STUDIES

While systems were focused on high productivity and outputs, many felt that a culture of journals favouring positive results meant that null results were rarely published or read. For many, this was an example of poor efficiency as many of the same studies were repeated to the same conclusion due to previous studies not being published. This **devaluing of null results was considered to be problematic for research**, not allowing researchers to build on previous related work.

LOSS OF TALENT

There were concerns that a lot of academic researchers were leaving for industry or even the profession all together. While many thought it was natural and appropriate to lose a percentage of young researchers in the early stage of their careers, there were **concerns that real research talent was often being lost, in part due to issues around poor culture.**

Growing numbers of PhD students were thought to have naturally made competition for post-doc positions worse, often exacerbating poor cultural behaviour amongst peers. For some, higher levels of attrition were a natural reflection of increasing numbers of PhD students, but some felt that proportionately more researchers were leaving and that the **system often didn't nurture and support** emerging talent enough.

EMERGING TALENT GIVEN WRONG VALUES

The metricisation and corporatisation of universities was thought to be ultimately a damaging thing for researchers. A number suggested concerns that early researchers brought up in this environment would ultimately begin to **naturally adopt some of its core values**.

An important outcome for many of culture was the ability to develop a new generation of quality researchers. Many felt that the values and constraints of the current culture were in danger of **developing researchers that had tunnel-vision, were outcome-driven and focused on individual achievement**. This could further impact the future creativity of research, but also lead to increased levels or questionable research practice.

SUPPORTING THE STATUS QUO

Funders, governments and publishers were all thought to prefer and reward research that is largely positive, conservative and in support of the status quo. For many this was **directly leading to less creativity, risk taking and innovation** and ultimately outputs that were narrower in vision and potentially less able to make world-changing breakthroughs and discoveries.

Increasing silos in discipline areas were also thought to contribute to more narrow-minded research.

FOCUSING ON THE POSITIVE

Behaviours such as cherry-picking results and massaging data were considered to be fairly systemic, but the level to which they are applied and the impact of them on the research itself was considered to be highly varied depending on the individual circumstances. It was often **perceived to be difficult for researchers themselves to be able to identify when they may be engaged in these behaviours** – for example, at what point does cleaning a data set become massaging the data for a specific output or just reinforcing the positive story of the research?

While it was clear that a number of drivers in the system naturally encouraged and reinforced these activities, it was often felt that the **majority were not consciously attempting to be dishonest** (although some clearly were), but instead were falling prey to an array of predetermined bias.

"Yes. Hugely. As soon as people get a whiff of maybe an interesting and positive story, you need an overwhelming amount of evidence for them to change their minds. There's no way they would publish in the same journal, the same high-impact journal being like we found this thing, initially it was interesting. If that paper finishes up being actually we were wrong, either it doesn't quite pan out or it looks different or it's flawed because of these ways, it just doesn't get them the same place. It's in their personal interest to ignore all the information that says they're wrong."

Post-doc, Russell Group Institution

FEAR OF REPORTING

Issues relating to these activities were often considered **difficult to raise, discuss and resolve**. Similar to issues of bullying and harassment, many researchers indicated that they would be hesitant about reporting issues relating to potential scientific misconduct, including questionable research practices, issues around replicability and the validity of results. While all hoped that they would raise what they saw as significant misconduct (knowledge of fabrication of data), many suggested that in the current culture they would be **likely to let smaller misdemeanours slide**.

This was often attributed to the following reasons:

- Lack of support from institutions for whistleblowers.
- Pressure to adhere to the team line (threat of complicity).
- Misconduct, particularly in very technical areas of specific specialisms can be very hard to identify and judge.

For younger researchers it was clear that this often stemmed from working cultures that made it clear that the party line on the results needed to be adhered to and obeyed. In these types of environments, **simply questioning practices and validity could lose important favour and impact careers**.

Researchers at all career stages also provided **examples when institutional leadership responded poorly to those reporting scientific misconduct** and, in some cases, stressed the potential personal implications of coming forward (in terms of their own careers) in no uncertain terms.

"I think if you're a whistleblower you come under attack, because there are people in large organisations and institutions that want to bury that type ... because that shines a light on them if they're senior management, that this is happening under their watch. They want a clean ... they want under their watch to be clean, hassle-free. They don't want to have people complaining about ... because that makes them look bad and so, I mean, I understand where they're coming from, I just don't think they deal with it appropriately."
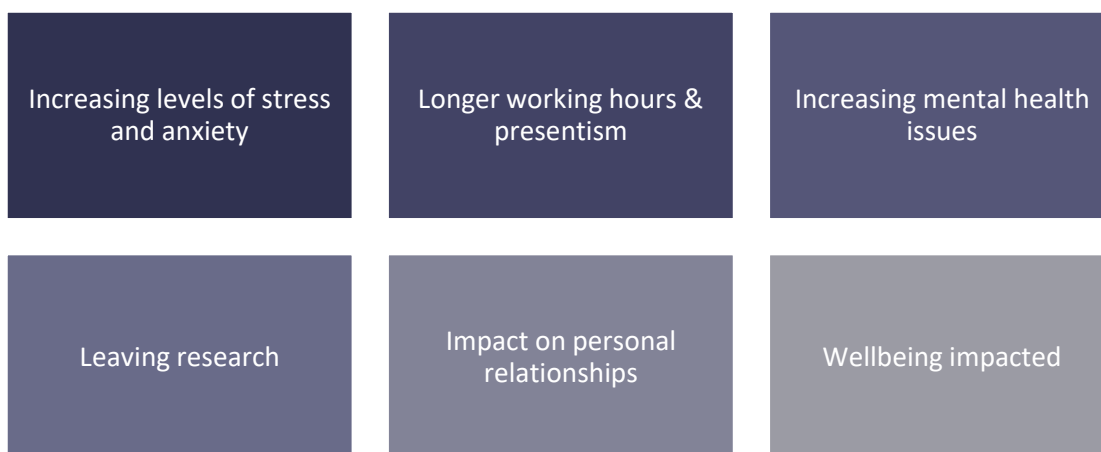
Late Career Researcher, Irish Universities Association Institution

Established researchers often raised the fact that scientific misconduct, particularly in interdisciplinary or cutting-edge areas was **difficult to identify with any certainty**. Understanding the implications that such an allegation could have on a researcher's career, few were willing to come forward unless they felt **absolute certain that misconduct had taken place**. This hesitancy potentially creates a catch-22, where misconduct cannot come to light without investigation, but a culture of fear and uncertainty is so established that many feel unable to raise issues and so it may be difficult to fully assess the extent of this within the community.

IMPACTS ON INDIVIDUALS

While a range of different impacts to research were raised and discussed, current culture appeared to **weigh most heavily on individual researchers** – impacting their wellbeing and work-life balance.

Increasing levels of stress and anxiety	Longer working hours & presentism	Increasing mental health issues
Leaving research	Impact on personal relationships	Wellbeing impacted

Some respondents were also quick to suggest that issues around wellbeing and long working hours were not only driven by their employers or other system stakeholders, but by their own personalities, **ambition and love for their discipline**.

"I'd say maybe sometimes it's hard trying to strike a balance between all the things you need to do to try and have a successful research career and the expectations and the roles and responsibilities that you need to fulfil if you want to progress. So I'd say it can be challenging to essentially have a balance between work and life and there is a danger of spending almost too much time working to try and fulfil those commitments because you're passionate and dedicated to wanting to progress in your career."

Early Career Researcher, Russell Group Institution

INCREASING LEVELS OF STRESS AND ANXIETY

Many reported high levels of stress and anxiety. This was usually attributed to **concerns about job security, finding positions or getting grant funding.**

For **younger researchers,** stress and anxiety often stemmed from:

- Ensuring their output was high and good enough to secure them a role in the future
- Not being able to ask for support and advice if something might not be going well.

For **PIs,** worrying about money and job security (not only for themselves but their teams) was regularly cited as an issue that **kept them awake at night**.

Short-term contracts were considered to exacerbate this. Several more established researchers indicated that the **regular threat of redundancies** looming within their institutions, and the lack of transparency by senior management, also contributed.

"I'd just look at the people starting off their careers and how they cope working in a far more precarious employment situation. Sometimes I feel stressed out and have a wobble because of the pressures that I'm under. Some of those pressures are pressures that I put on myself. There is no doubt that the changing nature of the research world is going to be more competitive, more internationalised, more aggressive and I'm not sure that we are building the research infrastructure that allows people to cope"

LONGER WORKING HOURS & PRESENTEEISM

As mentioned previously, increased competition and a lack of perceived security are perfect conditions for presenteeism and a culture that encourages long working hours.

INCREASING MENTAL HEALTH ISSUES

Mental health issues were generally thought to be on the rise – though there does appear to be some stigma attached, and few admitted to mental health issues personally. This rise was attributed to **increasing levels of competition and uncertainty within the culture,** but also perceived to reflect a wider societal issue, with many also remarking on significant increases within the student population.

While many did cite policies and initiatives for support available within their institutions, for the most part these were **not readily accessed,** for reasons including:

- Stress and anxiety was seen as a part of the job – a rite of passage for younger researchers.
- Issues can be hard to identify when working significantly long hours.
- Fear of being seen as weak (by supervisor / institution) and the impact this might have on their careers.
- Counselling services are stretched (dealing also with increases in student mental health issues).
- A lack of belief that initiatives would make a difference when the root causes remain.

Key, however, was that the current culture does not give room or **fully accept the idea that someone may be struggling.**

"And then, in another situation, which was actually in the lab that I did my PhD in, when we were writing up our theses, the other student that I was working with went to the supervisor and said 'my mental health is being really affected, I'm not feeling very well, I'm getting really stressed'. The supervisor told her that she was just weak, basically, and said 'this isn't something that … it's just you, you're being weak'. When she tried to stick up for herself, and said 'why do three people have mental health issues and even more during thesis write-up?' she was like 'no, it's just the weak people'. In that situation, where there is not room for weakness, is a big issue. Not allowing for wellbeing in general, it all has to be about the research."

Post-doc, Industry

LEAVING RESEARCH

As mentioned previously, a small number of researchers were actively contemplating leaving academic research for either a **research role in industry or something completely different**. These decisions were not lightly made, and often appear to come at great personal cost.

IMPACT ON PERSONAL RELATIONSHIPS

Many researchers indicated that often the research was prioritised over partners and family, and this was generally seen to be the cultural expectation. For ECRs there were often **significant conflicts between their work and personal relationships**. This was made more difficult by short-term contracts and pressures for researchers to live and travel across the UK and abroad.

"You have to be ready to relocate, to go to a completely different country. You might need to leave behind friends or your partner, you need to change houses and everything."

PhD Student, Russell Group Institution

Difficult relationship decisions often had to be made, particularly among ECRs for whom **big decisions within relationships and careers often uncomfortably coincided**. Perhaps unsurprisingly these issues were often most keenly experienced by women. But it was not just these groups: many researchers spoke of the **sacrifices they were required to make in terms of family life** to advance their careers, while some shared examples when having care commitments (children, elderly relatives, family with disabilities) effectively stalled their academic careers.

"Yes, it puts a lot of stress on you, and really interferes with family life. I'm married with two kids and I see very little of them. They're on summer holidays right now and I wanted to take time off, but I've had to cancel that because of other things going on at work right now, and it just puts a lot of pressure on your personal life. That work-life balance, a lot of people have managed to get that balance right, but if you're still feeling like you've still got to struggle and prove yourself to others then sometimes that work-life balance doesn't work."

Middle Career Researcher, Russell Group Institution

Some respondents did feel they had the balance between work and family right, but often this had **taken years to achieve and only truly come from supportive leadership** within the department and a certain level of agency to be able to say no to requests and demands.

WELLBEING IMPACTED

Long working hours, pressure, competition and a sense of isolation were undoubtedly thought to impact negatively on researchers' wellbeing. Experiences were **highly individualised,** not only from person to person, but for individuals across different stages of their own career. Where there were initiatives around positive culture, this appeared to make a significant difference to researchers' sense of wellbeing. It was **important that these did not feel tokenistic or trite to be truly effective**.

EXPECTATIONS AND THE UNIQUENESS OF THE ROLE

Respondents often stressed the uniqueness of working in research, which was considered to be demanding both in terms of the **range of skills required, but also the high levels of passion and resilience needed to achieve within this culture**. Institutional HR departments were often thought not to properly understand this and institutional senior management were sometimes thought to exploit it.

Researchers expected certain aspects of challenging culture as a given:

- Long hours
- High-pressured working environments
- High levels of competition
- Multiple commitments
- Impacts to work-life balance
- Isolation

SHIFT
LEARNING

- Frank exchanges.

But historically this had been offset by other cultural characteristics such as:

- Job security (once in permanent position)
- Autonomy
- Collaboration with peers
- Intellectual challenge
- Creativity
- Flexibility
- Joy

These were often seen as critical needs. The removal or diminishing levels of these elements often led to **less tolerance and resilience for the more challenging aspects** of academic culture, and a greater sense of sacrifices not being worth it in the end.

MORE THAN JUST A JOB

Many researchers saw academia not just as a job, but as a life choice:

"I think that the stress issue is an intrinsic problem of the research culture. Unfortunately, speaking to Human Resources, I don't think they really understand that. I had to explain to somebody quite recently that researchers often see their job as rather more important than a job. It's a vocation, it's a way of life kind of thing. That's something that for an outsider is not very easy for them to understand."

Middle Career Researcher, MillionPlus Group Institution

It was common for respondents to talk about roles in terms of a vocation. This sense of personal passion, pride and ambition undoubtedly fuels many of the cultural behaviours visible, but can also mean that **failures feel deeply personal too**, exacerbating the negative impacts felt by researchers.

DIFFERENCES IN EXPERIENCES

Experiences of culture were seen to be highly varied, and influenced by personalities, supervisors, institution, stage of life, state of home life, etc. Experiences differed across the following areas:

- Researcher group
- Institutions type
- Organisation type
- Subject area.

RESEARCHER GROUPS

There are some observable trends, with some groups appearing to be more exposed and vulnerable to the negative aspects of culture:

- ECRs
- Women and those with caring responsibilities
- Interdisciplinary researchers
- Those from less affluent backgrounds
- International researchers
- Minority groups.

EARLY-CAREER RESEARCHERS

Many (including established researchers) felt that the current culture was particularly challenging for ECRs, with all having experienced the **difficulties of being an early-career researcher**:

- Long hours
- Short contracts
- Lack of agency
- High levels of competition
- Vulnerability to patronage and power.

"I think the current research culture is extremely stressful, especially for people at the junior level, who are by far in the majority in terms of sheer numbers of people doing research. They are frenetic and stressed and under a lot of pressure. It's only really people who are at a fairly mature stage, who can have a more Zen-like approach to research culture. The majority of people would be highly competitive and working very hard."

Late Career Researcher, Russell Group Institution

Many felt that conditions were getting worse:

- Increase in shorter-term contracts
- Higher pressure to publish
- KPIs being applied on a personal level
- Competition for permanent contracts higher.

MINORITISED GROUPS

Issues around representation and diversity are explored under 'Lack of diversity' in Section 2 of this report. However, it was generally felt that those from less affluent backgrounds were more negatively impacted by a short contracts, long working hours and lack of job security as there is **less of a financial safety net –** making it harder to persevere through the challenging stages of an early research career.

Similarly, a system where achieving high levels of output early in your career was necessarily to achieve success was generally considered to be **disadvantageous to those needing to take a career break or scale down their activities**. This clearly affects women wanting to start families, but also any individual that might have caring responsibilities or experience ill health (either personally or within the family).

"There have been examples where people … where I've seen people not be supported nearly as well as I have, where for instance people have difficult times returning to work after all sorts of things, not just having children, but people who have been returning to work after being ill, or having caring responsibilities, who have had very little allowance made for that. Lots of people wouldn't want masses of

allowance made but I think making reasonable adjustments, to make sure that people can perform at their best and perform comfortably I think is really important. And I have definitely seen examples where that hasn't happened."

<div align="right">

Middle Career Researcher, Russell Group Institution

</div>

RESEARCHERS FROM OVERSEAS

Non-UK-native researchers often referred to having a different experience to others, including:
- Greater feelings of isolation.
- Greater feelings of job insecurity.
- Less understand of the rules of the game.
- Language and other cultural barriers.

International researchers also often referred to **bringing a set of cultural norms with them,** some a reflection of their country's culture, but others specifically a research culture from the other country/ies in which they have worked.

INSTITUTION TYPE

Institutions that were more comfortable (in terms of financial security, student recruitment and TEF or REF rankings) were generally reported to offer a **healthier culture than those struggling** in the current environment. For less traditionally research-focused institutions, the majority of income was often brought in from student fees and teaching income, with **research generally deprioritised** in favour of teaching – requiring researchers to work on research in their spare time.

"If you are at Oxford, Cambridge, Imperial, UCL you're maybe perhaps actually known as a research excellence institute, so you actually have … you're more likely to get the big money so then there is a little bit more focus on maybe harnessing research. Taking more time to do the big research, focussing more on the quality a little bit more, having bigger research teams. I think [my institution] is one of those places that because they actually get a lot of their … there's a lot of focus on our students and the recruitment of students, and the teaching and so there's this weird kind of conflict between people having to teach, but would rather be doing research."

<div align="right">

Early Career Researcher, 1994 Group Institution

</div>

But with increasing numbers of institutions feeling financial pressure, this wasn't just an issue for those in traditionally teaching institutions, with some researchers from established research institutions also referring to **attitudes around research changing depending on whether it was a TEF or REF year**.

The size of institution also appeared to play a role, with big universities (in terms of student numbers and financials) often having **multiple strategic objectives in play,** which made the culture more corporate and less academic in tone and was generally perceived as detrimental to research culture.

Those in very well-regarded institutions for research output often appeared to be in **more competitive and challenging cultures**, where cases of long working hours, bullying, lack of support and feelings of isolation appear to be particularly pronounced.

"Some bigger universities that I hear about were really kind of do-or-die in that if you don't' meet their research criteria thresholds of x-publications and x-pounds in grants then you're out the door. So I'd say

because we're a little bit smaller we're maybe slightly more protected from that, but then equally it also feels like because we're a bit smaller it's sometimes a bit harder to show that we're as good as bigger institutions when you're looking for grant funding and stuff."

<div align="right">

Middle Career Researcher, Universities Scotland Institution

</div>

There were a small number of respondents from smaller institutions or departments that were beginning to really invest strategically in research outputs. These respondents talked about culture more positively and often referred to **highly supportive working environments**.

ORGANISATION TYPE

A smaller number of respondents in industry were interviewed and their experiences compared – some of our academic sample included researchers that had chosen to leave industry or were strongly considering a move to industry. **Stark differences** could be observed between researchers in industry and those working in academia.

While **industry research culture** wasn't considered perfect by any means and, like all culture, the experience varied between workplaces and individuals, there were some **key benefits**:

- Working hours shorter, enabling better work-life balance.
- Concerns about risk can make science more rigorous (implications and tariffs more severe if corners are cut and results are wrong).
- HR acts on bad behaviour.
- Stronger sense of team working – all pulling in the same direction.

However, these benefits did come at a cost:

- Less creativity.
- Less autonomy.
- Can offer less challenges for intellectual stimulation.
- Less individual glory.

"Like I said, much more … a big thing I found in academia is there is kind of a martyrdom about it, in terms of everyone was comparing horror stories, and was like 'well, I was here until 9pm last night' or 'my boss said this to me'. Whereas here, it's much less like that, and it's much more normal to leave at a normal time. If you are here past 6pm people think you're working late. Whereas in an academic environment, if you leave at 6.30pm, then you're leaving early. And I think that makes a big difference."

<div align="right">

Post-doc, Industry

</div>

COUNTRY

Anecdotally culture was reported as being both better and worse in the UK by respondents with experiences of working overseas.

Many saw the **UK as more collaborative than some EU territories** they had worked in (France, Italy and Spain) and many felt that the quality of outputs was far higher in cultures where corner cutting was considered to be more rife (LATAM, China, Africa).

Some respondents who had worked in the US believed bullying, harassment and exploitation to be **significantly worse there than the UK,** with some referring to it as 'toxic'. Others felt that freedom from metricisation, solid financial health and a lack of the REF generally allowed the culture to feel more autonomous and creative.

SECTION 2: DRIVERS TO RESEARCH CULTURE

SUMMARY OF THE DRIVERS

The current state of research culture was seen as driven by a complex mix of factors interacting on an individual, institutional and wider systemic level. Respondents often found it difficult to place responsibility on any one factor individually. However, in general, the state of research culture was seen as guided by how individuals and institutions responded to wider political drivers.
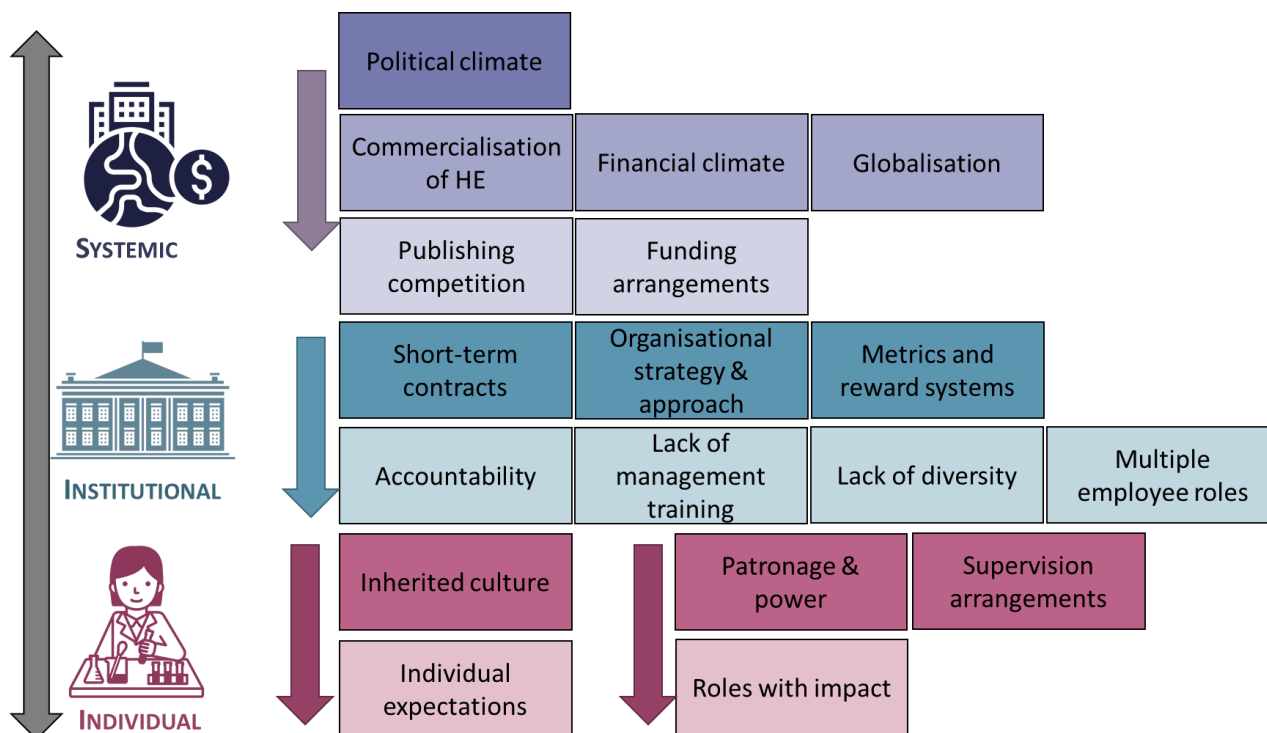
WIDER DRIVERS

THE POLITICAL AND FINANCIAL CLIMATE

Many respondents highlighted the **increasingly pressured HE climate**, having impact at both an institutional and individual level. Respondents were often understanding of the difficult position institutional leadership teams were in when **reacting to a challenging political environment**.

The commercialisation of higher education, with **students seen very much as consumers,** was felt to be shifting priorities. **Teaching and the NSS were already seen as a major focus,** over research, for universities

due to the impact this had on student numbers and ultimately funding. This shifting model of finances coming from teaching gave the impression that improvements in student satisfaction and teaching were ultimately **prioritised above staff satisfaction and research needs**.

"As with many universities … the environment is changing because the financial drivers are now generally coming from teaching undergraduates. The crude financial model that is used in all universities effectively says that research makes a loss. It clearly doesn't, but the financial model that is used comes out with this number. On the other hand, you get £9,500 for a student sitting on a seat and that sort of money that comes in… it doesn't cost you that much to teach a student, particularly if you do it in cost-effective manners. Therefore, the entire driver within nearly all academic institutions when push comes to shove is the cash-flow and that relates to doing under-graduate teaching and therefore, things have to be subservient to that."

Late Career Researcher, Russell Group Institution

Respondents recognised the real impact that the **future student fee review** could have on institutions, with fears this may result in:

- Further reduction in time and funding available for research activities.
- Loss of talent, due to lack of career stability and/or career satisfaction for researchers.
- Possible redundancies.
- Universities ultimately facing bankruptcy.

"We all knew that if reviews are just cutting down the [student] fees, which everybody said it will, then there would be redundancies. Somehow this deeply affected the mood. People were, kind of, we all realised that our positions are insecure. And we may all be made redundant all of a sudden. This was very unpleasant, kind of, everybody said it's probably this is not going to happen, but at the same time the realisation that this may happen was shocking."

Late Career Researcher, Russell Group Institution

GLOBALISATION

Respondents were seeing **increased focus on globalisation**. While considered a positive around international collaboration, it had negative impacts on research culture. As well as feeling competition to succeed in a UK context, researchers were seeing **increasing need to compete on a global stage**, feeding into the competitive environment.

At a university level, institutions were striving for **global reputation in international league tables**, both for research and teaching.

"People are expected to produce stunning, global research. In the UK community it's all about being one of the best 100 universities in the world and it's about… certainly in my university, which is a Russell Group university, one of the 20 or so, it's about being up there with the best education and research establishments on the planet."

Late Career Researcher, Russell Group Institution

On an individual level, career progression was also increasing linked into the ability to show **international impact and be an internationally published researcher** in order to progress.

"We've got REF in the UK, but you're supposed to be an internationally recognised researcher and if you don't publish on a regular basis, people forget you. You know what I mean? If you publish one, let's say, Nature paper and you don't publish for the next three years, people forget you. They may cite that paper, but they believe that you're doing nothing. The constant pressure is not just from the university, or from the research council, or the funding bodies or so on, it's from the whole international community of researchers."

Middle Career Researcher, Russell Group Institution

BREXIT

Many respondents voiced concerns over the **potential impact of a no-deal Brexit**, with some already seeing the impact caused by uncertainty over this.

There was fear over the impact Brexit would have on **funding availability.** Concerns were raised over whether there would still be access to EU funding and, if not, whether UK funding bodies would value pure research or whether they would be highly focused on impact-driven research, as currently seen.

"One of the worries that I pick up about Brexit, is that British funding bodies may not… even if they do take up slack from European research councils, they won't be as committed to pure research."

Middle Career Researcher, Russell Group Institution

There was also fear over **retaining UK and EU staff**. Amidst uncertainty in the UK, EU jobs looked more favourable. In the same vein, attracting EU staff was a concern. Some had already seen loss of staff, with **UK careers seen as too unstable** and uncertain in comparison to EU or international positions.

"Things are very unstable, and the government has no interest in the fact that the instability in the university sector… I'm not even mentioning Brexit, but the financial instability is completely destroying the sector. That's one of the reasons we have so much turnover in my department. People leave because they can't stand the fact you don't know what you're going to be promoted on next, or whether the university will be around, and here's Germany offering these very solid positions for administrative assistants. It's too unstable here. My US colleagues don't understand it. People are facing redundancies. The instability is a problem and the government has no idea how much they're destroying universities."

Middle Career Researcher, Russell Group Institution

INDIVIDUAL AND INTERPERSONAL FACTORS
ROLES WITH IMPACT ON RESEARCH CULTURE

Across interviews, respondents highlighted that while there were external pressures on research culture, **individuals had a huge impact in how they responded to such pressures** – either leading by example or creating a toxic environment.

Across roles, responsibility for negative culture was felt **perpetuated by those up the ladder**: PhDs placing responsibility on PIs, who placed it on department leads and/or university management.

Positive experiences and culture were nearly always the result of good supervision and leadership. PIs were seen to have a significant role in **setting the tone for the culture** within their working groups, yet not given the training, support and time to effectively do this.

While there were awful examples of PI behaviour, these were the minority. Most respondents saw their **PI as decent and trying their best**, but constrained by a system that rewarded outputs and money over the individuals.

INHERITED CULTURE

Many respondents **accepted that a research career necessitated a heavy workload** and were expecting this from the off, rather than necessarily seeing it as a negative outcome. Respondents often mentioned that the culture of pressure and long working hours was an **engrained view**, perpetuated by those in more senior roles, with supervisors conveying 'that's just the way it is'. The view was often passed down that PhD and ECR years were difficult for everyone and **'we all had to go through it'**.

"It's a self-fulfilling cycle. Your boss will have worked many long hours, and they'll get to the position they're currently in, and they will want you to do the same before you can move ahead because they're like 'I've done that, so why can't you?'"

Early Career Researcher, Industry

However, it was noted that some supervisors would **try to work against this engrained notion**, setting clear guidelines on working hours, encouraging junior team members to keep a good work-life-balance.

"Just two weeks ago, our head of department sent around an email, to say 'I am concerned about the stress levels of my department, the staff in my department, and I would like you not to work at weekends, if you could. If you have to work at weekends, that's fine, but please don't send emails at the weekend, because you are then just alerting others to work. Please schedule them to be sent on Monday at 8am.' I'm not sure how many heads of departments would encourage us not to work at weekends. So, it's those little things that makes us feel that there is life beyond the four walls of the lab, sort of thing."

Middle Career Researcher, Russell Group Institution

However, a few respondents noted this was **'all talk'**, with it not being possible due to the wider workload pressures imposed on them.

PERSONAL CHARACTERISTICS AND PREFERENCES

Many researchers acknowledged academia as a profession with very high workloads and pressure. However, it was not purely systemic or external factors driving this; a large number of interviewees felt this to be, **at least partially, self-inflicted**:

"I have 15 hour days every day, and I do this because I like it, because there's a massive divergence between the remuneration I'm getting for that and the amount of time I put in."

Middle Career Researcher, Russell Group Institution

Academia naturally attracts those who are **passionate about their field and their research**. Some felt research attracted and retained people who were particularly self-motivated, hardworking and resilient, and to a large extent these were **characteristics integral to success** within research:

"It's just a fact of life, research doesn't stand still, if you don't do it you're not in competition with somebody else in your university, you're in competition with the scientific community worldwide... If you

want to be the first to get something done then you have to either be incredibly clever or like me just have to put the hours in, and in any case research is something you enjoy so it's not a chore."

<div align="right">

Late Career Researcher, Russell Group Institution

</div>

Many spoke of the impossibility of fulfilling all their working obligations during a normal working week so would **often spend free time, holidays and weekends doing research**:

"I'm supposed to work 35 or 37 hours, but there's no way that you can do and deliver all of the commitments that you've got on that time scale. If you didn't deliver half of them then people would start to question it. A large majority of people, including myself, do their research effectively in their spare time. We enjoy doing that and I think that that is a true statement."

<div align="right">

Late Career Researcher, Russell Group Institution

</div>

PATRONAGE AND POWER

There was a sense of patronage driven by senior management as **embedding poor culture**. Some respondents felt that individuals deemed valuable, in terms of funding they attract, were able to get away with behaviour that may be encouraging a negative working culture. While not occurring often, junior researchers commonly felt they would be unable to report such behaviour or that little would be done to reprimand the perpetrator in such cases.

"I think it's difficult when people who are high up in the culture who have a large number of the grants have less good practice. The way that practice is dealt with is quite soft because they're valuable."

<div align="right">

Late Career Researcher, Russell Group Institution

</div>

Respondents also spoke of the **power senior colleagues had over the future career** of junior researchers, such as being needed for references. This was again highly dependent on the individual in a position of power but it was sometimes felt among PhDs and ECRs that there was pressure to **kowtow to supervisors** in order to be able to get anywhere in their career.

Similarly, there was a sense that **social capital** was important in establishing a successful career. A few respondents reported instances where they felt university funding was directed towards established researchers, and those associated with these researchers benefitting by proxy. This again was felt to give way to **sycophantic behaviour**.

"Who gets funded, why did they get funded? Is it their project that is so significant or are they super-talented or is it because they've worked in the lab of Professor X, or is it because they are working on a research project that aligns with the views of Professor Y?"

<div align="right">

Middle Career Researcher, University Alliance Institution

</div>

Researchers were acknowledged as being under increasing pressure to prove themselves and succeed in a competitive environment. With the constant pressure to secure grant funding and rolling employment contracts, respondents often cited **power-play driving toxic working environments**.

"There's a group next to us where the group leader may as well have a whip and frequently denies them holiday or makes them feel they shouldn't be taking holiday but it's their decision like there is a degree of emotional manipulation about it. […] I think it's partly personality but a lot of it is the group leader is quite

new and there's huge pressure on them to be proving themselves in terms of them securing longer funding and just establishing themselves, their name in their field."

Post-Doc, Russell Group Institution

SUPERVISION ARRANGEMENTS

The variance in **quality of supervision** received by PhDs and ECRs was a significant driver for their experience of research culture. This was highly dependent on what they saw as 'luck of the draw' as to what this working relationship would be like and their supervisor's personality. Those with experiences of supportive supervisors who made time for their supervisees reported a much happier and positive research culture, feeling the impact this had both on **personal wellbeing and the quality of research**.

Where negative experiences were cited, this was felt in multiple ways:

- **Micromanaging** – attributed to the supervisor needing to demonstrate impact and success, lacking trust in junior team members or setting unrealistic expectations.
- **Hands-off approach** – little contact time, attributed to supervisors having competing pressures on their time, meaning supervision of junior members often fell to the bottom of their list.
- **Lack of knowledge** – supervisors lacking management skills or technical knowledge to help.

This was particularly felt as damaging due to the success of young researchers being dependent on the goodwill and support of their immediate supervisor.

While this was **largely attributed to individual characteristics** of supervisors, there was also awareness that these individuals were under competing pressures on their time and workload, and many had not been offered any formal training before entering such a managerial role.

"It comes from the supervisor and the sort of relationship he holds with us, and I think partly that is he is relatively old and his style has not changed, and he's really only interested in the publications. He's not interested in ... well, for us he'll only read the parts of the thesis that might be published and so it's feeling that he's not engaged with the research, but more just the publications, which leads to a lack of feeling of support. From there, you end up in the space where you're a bit isolated and a bit, sort of, working hard but not feeling supported, and that creates the tension."

PhD Student, Russell Group Institution

MACRO AND INSTITUTIONAL FACTORS

TERMS OF EMPLOYMENT

One of the largest drivers of pressure was the terms under which researchers are employed, encompassing:

- Length of employment contracts.
- Juggling multiple roles (teaching, research, management, admin, etc.).

CONTRACTS

Short-term contracts were considered the norm for ECRs in academia and frequently cited as a driver of current research culture. A few suggested short-term contracts and funding could have a positive impact in driving progress, but **primarily this was seen in a negative light**.

"It also has an impact on my personal life, not being able to have permanent jobs with a supportive employment. It means that I'm just constantly in limbo, waiting to see where I'm going to be next."

Early Career Researcher, Russell Group Institution

Achieving a permanent contract was often described as a career high but, ultimately, the financial instability and pressure resulted in a loss of talent, with many respondents having seen colleagues leave the profession. Short-term contracts impacted the individuals through creating pressure to:

- Be financially stable.
- Find new work.
- Relocate.
- Adjust to new working environments.

"Young people can go on for several years before they get permanent position and for some, the pressure of not having permanent position, or even not having a job, is not very nice. Talented people can sometimes give up, because they feel it's too difficult. Not to talk about young female, imagine. They would like to have families, but they don't have jobs, permanent jobs. It's quite difficult."

Late Career Researcher, 1994 Group Institution

Short-term contracts were also seen to have a **detrimental impact on research quality**. A churn of researchers on short-term contracts meant **loose ends were often left untied** with efficient handovers not always occurring. Reproducibility was then at risk, with data curation often an afterthought and **data requests difficult to fulfil if researchers have left**.

Problems with employment contracts were mentioned less frequently by industry researchers.

MULTIPLE ROLES

Academic researchers frequently spoke of the competing requirements of their role, and feeling these were **unachievable within contracted hours**, resulting in a need to work longer. Many spoke of the difficulties in juggling these commitments – for examples, see the 'Workload and pressure' area of Section 1 in this report.

A handful of respondents also spoke of **promotion being tied into performance** in the many facets of their role. With increased focus on NSS scores, researchers had to prove ability in teaching for promotion, **regardless of where their expertise or passion lay**.

"The expectations in terms of research can be taxing in the sense of if you just are teaching and not producing research and publishing research, the institution where you work for will see you as a failure so to speak, you won't move up the academic ladder."

PhD Student, Non-aligned University

Institutional strategies around promotion were often seen as **knee-jerk responses** to sector-wide policies, with mention of colleagues who had been moved from research positions into teaching to avoid impacting the REF score.

"REF is proving to be a much more aggressive tool for disciplining people and making people feel inadequate, and leading to teaching-only contracts or … threatening people with teaching-only contracts, and that kind of thing."

Researchers often felt a **lack of training offered in the additional roles** expected of them, such as budget management, grant writing and management – again resulting in increased stress.

"No one ever taught me how to make a budget, how to write a budget, how to calculate a budget. There is no reason because I am actually in biology, but you know what I mean? Why would I have ever written a budget in my life or how can it be given for granted that I know how to hire a person, how to produce the paperwork for these things?"

Early Career Researcher, 1994 Group Institution

LACK OF MANAGEMENT SKILLS

Many were expected to take on managerial positions **by virtue of seniority,** with little or no formal training given here. This encompassed management of:

- Research groups
- Departments
- PhD students.

Individual **personalities were felt to be highly influential** on day-to-day research culture. Many felt there was not enough done by senior management within universities to ensure that researchers were sufficiently trained before taking these positions, resulting in **inadvertent poor management**.

"I think one of the problems we have is that people fall into management by virtue of seniority and I kind of resisted that myself because I know I could not manage people. And I think the appropriate management, professional management of the academic community, the research, is key and I think that's a pretty difficult thing to do. A lot of academics would be like me, very opinionated and think that they are mostly right and it's very difficult to manage those people."

Late Career Researcher, Russell Group Institution

With publishing and funding pressures felt to be creating a competitive environment, if **unsuitable individuals** fell into managerial roles this could further drive a toxic working environment. For example, some spoke of **PIs using a managerial position to further their own career,** at the expense of others in their team.

With funding so pivotal to measures of success, some felt that issues of poor management were **overlooked if an individual was seen to perform well against KPIs** and be valuable to the institution.

"People … who aren't necessarily being great supervisors/mentors. When that's brought to someone's attention, it is dealt with but it's not dealt with as strongly as it might be because the person is "important" for the money as it were. It's not that it's not dealt with. It's just I think it would be dealt with differently had the person not been well-funded."

Late Career Researcher, Russell Group Institution

ACCOUNTABILITY

Most respondents were able to cite initiatives in place aiming to improve research culture, but there was often the sense that these **did not go far enough** and that crucially there was a lack of accountability in cases of poor culture. For example, while guidelines were often given regarding working hours or communications etiquette, in reality this **would not be followed up** if contravened.

"I think from my point of view, on the one hand you do need somebody who people are accountable to. So, for example, in our own institution, we've got an email etiquette that says that out-of-hours, out of working hours, people must not send emails but because it's an etiquette people ignore it. There is nobody that ever slaps anyone on the wrist to say, 'Well actually, you shouldn't have written this email at this time of day'."

PhD Student, Russell Group Institution

Further to this, many sensed that it was in institutions' interests to not go looking for cases of misconduct, or in some cases to overlook this, **so long as KPIs were being met**. Among some, there was a feeling that it would be difficult to report incidents of misconduct if they were to occur.

"There is no one checking anything. So, just you do your own thing. As long as you publish papers and you get funding, no one really looks in to how you do that or how you act as a mentor or what is the culture. So, there is no rules. There is no consequences. So, people just do what they want and then that's that."
PhD Student, Russell Group Institution

There was a sense in interviews that it **would take extreme behaviour for individuals to stand up** and report cases of poor conduct, with current practice and policy not conducive to this.

METRICS AND REWARD SYSTEMS

Ultimately, respondents felt much of current research culture was driven by how institutions responded to systemic factors around **how university success is measured**.

The REF and TEF were commonly cited for their impact on university funding, with the KEF felt to play a role in future. **Rules were felt to be continually changing** and thus causing challenges for institutions to respond and communicate this with staff. These metrics were often criticised for being created by policy makers **too far removed from real-life practices**, therefore setting unrealistic expectations.

"It's a joke because it's (TEF) designed by people who don't get how universities work. Sadly, even in my department, which does try, the compliance has got out of hand so we can't keep up"

Middle Career Researcher, Russell Group Institution

Many held the wider culture of metricisation, particularly the REF, accountable for the increased presence of poor culture, or rather **how these frameworks had been implemented** within institutions.

At a top level, many could see the benefits of the REF, driving a focus on research excellence. Where this was ineffectual, focus on metrics was seen to:

- Prioritise high-impact research:
- Increase **bureaucracy.**
- Provide opportunities to **'game the system'**.
- Encourage the view of research staff as **commodities**.

Cherry-picking results, data massaging and inflating positive results were all behaviours seen as **driven by a need to chase metrics** (both individually and by institutions).

"I would argue that REF is both a solution and a problem for many issues. It's a solution in that they can put things in there which promote good practice but at the same time universities in playing the game of REF tend to organise their entire research culture around elements of it in not such a good way."

<div align="right">

Late Career Researcher, Russell Group Institution

</div>

For many, the current systems of reward and recognition continued to drive behaviours that led to **researchers feeling exploited**. In some cases, metrics and targets were imposed onto individuals and linked into performance reviews – **creating high levels of pressure, furthering the competitive environment and increasing likelihood for corners to be cut**.

"We have a habit of appointing people to new positions and saying 'we expect you to do XYZ' and if that is to publish a 4-star paper and get a research council grant, that is a huge amount of pressure to put on people. Especially if in 3 years I don't do that, I'll be out of a job and at a very different place on the job market than I am now. I don't think that universities set out to create that hostile environment in general but I think that here we're bad at it. There is very much a view that if you don't have significant grant income then you don't count."

<div align="right">

Late Career Researcher, Russell Group Institution

</div>

Metrics were seen to focus on **tick boxes as opposed to quality research,** driven in part by sector-level metrics being translated into university measures by those in senior management who had less detailed understanding of the research process. Respondents often saw these metrics as too generic and unrealistic to achieve on an individual level, **setting them up for failure**.

"The REF system in the UK requires academics to have X papers of X quality by X time and as soon as you put that barrier on someone and the university starts snarling at you, you're inviting people to cut corners to meet those criteria."

<div align="right">

Late Career Researcher, Russell Group Institution

</div>

These measures also meant that **humanities and social science researchers** felt like an afterthought and undervalued by institutions' blanket KPIs.

"There was a very aggressive management culture, very metric driven management culture and a culture which was very science orientated and didn't particularly value the kind of humanities work that I was trying to do. I managed to make a success of it because my particular personal profile of research interests and openness meant that I could make it work, but I was with two or three other people who really suffered in that environment."

<div align="right">

Middle Career Researcher, Russell Group Institution

</div>

All of this also **led to cynicism** that new measures around culture could be 'another hoop we have to jump through'.

ORGANISATIONAL APPROACHES AND STRATEGIES

Institutions were considered pivotal in leading a cultural change in research. While metrics could be seen as driving quality, it was how universities responded to and implemented these in practice that **created either a positive or toxic working environment**. Respondents generally understood the difficult position leadership teams were in when responding to ever-changing goalposts, but it was commonly felt that university initiatives could be:

- Knee-jerk strategic responses to wider environmental changes.
- Top-down, dictatorial.
- Lacking transparency.
- Paying lip service to complex issues.

"I don't know who decides this, but somewhere in senior management, whatever seems to be the most urgent imperative for REF is what is suddenly messaged down to the rest of us. One month it will be 'oh my god, impact is the most important thing in the world and we must all stop doing everything else and just do impact'. Next, it will be 'you're not getting enough research grants. Everybody must be applying for research grants'. It's entirely arbitrary to the rest of us what it is we're supposed to be doing at any one time. It shifts constantly. It's exhausting and it's not helpful".

Late Career Researcher, Russell Group Institution

University initiatives were often driven by those in management roles seen as too far removed from research (similarly to policy makers), **meaning metrics were meaningless in everyday practice** and in some cases unachievable. Those in very top-down management systems were seen to suffer most, with fewer channels available to address such issues.

"The way it was done was that out of the blue everyone received an email with what these KPIs were, and the problem was that the indicators themselves were so generic it was hard to see... not just ambitious but totally unrealistic. It was hard to see how anybody could achieve these indicators ... Things like the number of PhD students we're all expected to have coming through our labs at any one time, it meant we all had to have six PhD students, and there aren't that many students in the system. I currently have three, and that's the most I've ever had at any one time. The indicators themselves were nonsensical and unrealistic."

Middle Career Researcher, Russell Group Institution

Respondents often felt that institutions were too driven by metrics and reacted in a **knee-jerk fashion** to fit government policy. Further to this, there was sometime a **lack of transparency** from management as to the changing KPIs and success measures used.

"I think because of shifting external environments, institutions like universities can sometimes knee-jerk in terms of changing their strategy. For example, if building a reputation for fundamental research has been a key strategic priority, with perhaps a lack of funding in that area, but funding being offered in other areas, such as in the UK there's the industrial strategy challenge fund, institutions are clamouring to secure that funding, but completely changing things."

Middle Career Researcher, MillionPlus Group Institution

There was sometimes a sense that universities talked the talk in terms of creating a positive research culture, but initiatives could sometimes appear to simply **pay lip service** to the problems or not go far enough to address them: the focus on metrics and success measures was of more importance.

"You feel a little, I don't know, disorientated. Not disorientated. A little, I don't know, confused about what the actual end goal is, shall we say. Why these certain decisions are made is sometimes not clear. It would be nicer to have more of an idea why these senior management people are making certain decisions."

PhD Student, Non-aligned University

In more positive research cultures, there were channels for researchers and senior management to interact, with **policies and initiatives developed in collaboration**, rather than top-down.

LACK OF DIVERSITY

As mentioned previously, academia was often described as primarily comprised of white, middle-class, middle-aged males, with the average research team still lacking diversity. Having an inclusive, supportive environment was seen as **essential to doing good research**.

Wider **issues in the UK education system** were partly seen as a cause of lower numbers of women going into careers in STEM research. This was made worse by the prevalence of short-term contracts and high **workload demands making a career in research unsustainable for women with children**, with childcare arrangements typically still falling to them.

A handful of respondents highlighted a distinct lack of diversity, or support, seen in relation to disability in academia. Many respondents felt there was increased focus on mental health awareness and support, but that physical disability and chronic illness were overlooked, which manifested in:

- **Grant applications:** Application forms themselves may be inaccessible and, while support for disabled researchers may well be offered by funding bodies if successful, this is not made clear at the application process, stopping many from applying.
- **Interview process:** Often requiring face-to-face interviews, with Skype not offered or a lack of accommodation for BSL needs.
- **Meetings and conferences:** Inaccessibility for those with physical and/or sensory impairments

As well as these functional considerations, navigating these situations caused further stress and anxiety to researchers, often along with a **fear of disclosing being disabled**.

"I think if they were to be more inclusive, I think the actual research outputs could be more diverse and I think that, to me, I see research a little bit that they recruit people who are very similar. Like if you have a football team and every player had the same skills, do you really expect the team to excel and that's what I think I do with research, or to a large extent with academia. You want different people who have different things to offer. Sometimes you need someone who can run quickly and sometimes you will need a goalkeeper. You don't want them all to run quickly."

Early career researcher, MillionPlus Group Institution

While lack of diversity was highlighted as an ongoing issue, there were a number of initiatives cited that looked to actively change the apparent lack of diversity and **mitigate discrimination**, such as:

- Athena SWAN: focusing on improving gender equality in the sector.

- Unconscious bias training run institutionally.
- Flexible working hours to allow for childcare arrangements.
- Improvements to the physical environment – disability access, adjusting desks, etc.

There was often a sense that universities were aware of the need to focus on workforce diversity, with such initiatives in place, but there was still a long way to go.

"Overall, I have to admit that there's a majority of white people, but there are people from minorities. If you go again to management… yeah, in my centre, you see also, there's also the same thing. White people. You know it's something that is a white elephant in a way."

Minority Ethnic, Early Career Researcher, Research Institute

Some respondents stated that there were often strong initiatives in place and support for students in terms of diversity and inclusion, but that this was **still lagging for staff support**. With student satisfaction being used as a measure of success, respondents felt the impetus was therefore on improving the student experience more than staff.

FUNDING ARRANGEMENTS

Funding constraints, changes and processes have contributed to:

- Fewer but larger grants.
- More short-term than long-term grants.
- Emphasis on 'high-impact' research at the expense of exploratory, pure and blue-sky research.

This is coupled with a **more financially prudent university system**, placing more emphasis on external grant funding and undergraduate teaching at the expense of university-funded research.

Industry researchers did not feel these financial constraints to the same degree: the pressures of internal university budgetary constraints did not apply.

FOCUS ON IMPACT

Many researchers felt there was **too much emphasis on proving the impact** of the research in grant applications – meaning there was less attention and funding given to blue-sky research, in which the 'real-world' applications were not immediately obvious:

"There's clearly some underfunding for blue-sky research, which is a big issue. There's a drain too for us, so some pressure to have applications and to have some impact within a short amount of time, which is not reasonable when you do fundamental stuff because it takes years sometimes to get to some applications."

Middle Career Researcher, 1994 Group Institution

Funding bodies, through emphasising impact, were seen to prioritise certain research subjects and techniques **at the expense of a more diverse range of areas and methodologies**. This in turn pushed academics to produce research not directly related to their interests:

"[They say] 'These are the target areas for research, and these areas are being enhanced and these areas are being tuned down' which is extremely non-subtle. It's just an essentially top-down approach to what

research should be done... So I am working on things that I would never have considered five years ago. It's still blue-sky, but using techniques and whatever methods that are in fashion with the research councils."

Late Career Researcher, Non-aligned University

Some researchers voiced further concerns that **pressure to prove impact will worsen after Brexit**. If funding dries up from European research councils, researchers will be more reliant on British funding bodies who, it is feared, might place increased importance on the economic impact of the research.

FINANCIAL CONSTRAINTS

The stress placed on the impact of the research was felt to be indicative of the wider academic culture, one that was becoming **increasingly finance-driven**:

"One thing that doesn't help is over-emphasis on applied research. The idea that research should generate income or there should be value, monetary value, associated with research very soon."

Late Career Researcher, Russell Group Institution

University financial constraints were enlarging the importance of externally funded research, whilst **reducing opportunities for internally funded academic research**.

"Unfunded research is frowned upon by the universities due to the large overheads that, especially wet-lab research carries. The constraints of the number of grants and the avenues for funding from governments, from charities, from external organisations are fewer and far between."

Middle Career Researcher, 1994 Group Institution

In a constrained financial environment, **undergraduate teaching has been increasingly prioritised** as a principal source of funding. In teaching-intensive universities in particular, decreasing emphasis was being placed on research in favour of more profitable aspects of university income.

Further to this, researchers perceived that there was **not enough research funding available**, and that the overall amount had diminished. This meant good research often went un-funded and there was increased competition between researchers to secure fewer grants:

"90% or 80% of what gets submitted for a funding application is very good quality and so you're in a kind of a lottery situation where the middle portion of submission is decided really on the basis of a lottery. And that is actually not a sensible way to continue"

Late Career Researcher, Russell Group Institution

SHORT-TERM FUNDING FOR LARGE PROJECTS

It was felt that funding bodies were offering fewer small grants and long-term grants. Instead, the emphasis on impact, as well as financial constraints, had driven a fixation on faster research outputs:

"Research is built very much around short-term in the majority. People's contracts are short-term. Money is often short-term. So the short-term obsession is very beneficial because it does push things forward. The

problem is it's just unsustainable and the way that's dealt with basically either people leave and you get fresh blood in with fresh money and stuff or basically the people who have driven it forward to start with probably suffer."

<div align="right">**Middle Career Researcher, Russell Group Institution**</div>

Short-term funding contracts were a particular concern, with potential to impact research quality. With no allowance for delays, data curation became an afterthought, **impacting reproducibility**.

It was felt that lack of funding for smaller projects meant more **niche areas of research were excluded** and ECRs were prevented from accessing funding, while funded projects wasted grant money:

"All the small grants have gone: I don't need grants of £1m to do my work. I need a grant of £10,000 and some time off, or a total of £50,000 like the independent social research foundation does those grants… they're such a waste of resources. People are making up research projects just to match the huge, enormous budgets, and those only make sense in the hard sciences… I'm funding my own work now."

<div align="right">**Middle Career Researcher, Russell Group Institution**</div>

In the REF, and the funding system more generally, there were **incentives to win large amounts** of research money, but none to spend the money well or conduct the same research with a smaller grant.

PROCESS OF APPLYING

The **low success rate** of grant applications meant that **a lot of time** was spent writing multiple applications, adding pressure to already full academic workloads. Researchers with **institutional support for application writing** were much more satisfied with the process than those who were left to do it by themselves. Availability of this support was highly varied across the sample – often put down to how supportive their immediate management team were.

In this pressured environment, researchers acknowledged there was **temptation to overstate your preliminary results** in applications – although no one admitted to this themselves:

"People are expected to get grants. Grants have a deadline date. Grants need preliminary data. Preliminary data isn't necessarily verifiable by a paper. It's a very soft form of malpractice as it were to overstate your preliminary results I suspect if it helps you get your grant. It's not something I do but it's something I know could easily get done. I mean you can just see why the temptation would be there."

<div align="right">**Late Career Researcher, Russell Group Institution**</div>

PUBLISHING SECTOR / PROCESS / MODELS

The pressure to publish in high-impact journals, within short timeframes, was a **recurring theme** through the qualitative research. This pressure came from:

- University management, concerned about metrics.
- Funding bodies, who used previous publications as a criteria for funding applications.
- Other researchers, publishing in the same field

"PUBLISH OR PERISH"

As described earlier, many researchers (particularly ECRs on temporary contracts) felt career pressure to publish high volumes of academic research, on top of their administration and teaching obligations.

The current publishing focus on high-impact journals was perceived to lead to misplaced priorities, with university metrics and funding bodies seen to **value *where* research was published more than its quality**:

"When I was coming through, it was a) you needed to publish a lot, but b) you also needed to publish in the glamour mags, as they're called, so mainstream science media, because this is what the fellowship panels are looking for and they assess those as high-impact as a way to measure the quality of your research."

Middle Career Researcher, Russell Group Institution

Similarly to funding, respondents saw publication rate being used as an easy metric with which to judge staff performance and there were concerns that this **pressure to publish also emphasised volume over quality**:

"Universities and the whole research area is much more managed than it was, we make judgements based on metrics and that can include journal impact factors. It can include numbers of publications, numbers of citations and these are things which, in an ideal world, you wouldn't worry about. You'd just work on something that you found interesting and had value."

Late Carer Researcher, Non-aligned University

INCREASED COMPETITION

This pressure was, to some extent, **driven by the competitive nature of academic publishing**. There was always pressure to complete projects quickly for fear that someone else would publish similar research first, but there was a widespread perception that **this competition had increased**:

"The profession has increased in size, it's more or less doubled in 30 years but the page lengths in the top 5 journals have more or less remained constant. I'm not expecting to just publish in top 5 journals but because these can become very crowded than the ones which are much further down... I think a piece of research or journal or paper that could've got into a top journal 3 years ago, would struggle to publish it now."

Early Career Researcher, Non-aligned University

SECTION 3: PERCEPTIONS OF WELLCOME

THE CURRENT IMPACT WELLCOME HAS ON RESEARCH CULTURE

Thoughts around Wellcome's current impact on research culture were described in passing by some respondents. Some of these accounts were positive, describing specific examples where Wellcome had made a beneficial impact on culture within their own research community. However, others argued that, as a major funding body, Wellcome played their part in the systemic causes of poor research culture.

OPEN ACCESS

A small section of respondents demonstrated an **awareness of Wellcome's commitment** to providing open access for publications they fund and it was seen to have **somewhat addressed the issues** being raised around the replication of existing research.

"Things like open access publication. The Wellcome Trust signed DORA, I think that that kind of willingness to embrace a non-strictly metrics driven approach is important"

Late Career Researcher, Russell Group Institution

LOBBYING

Some respondents noted Wellcome's historical lobbying influence and ability to translate the demands of academic research to government as a **driver of positive research culture**. By representing academics, some felt they did much to encourage government to invest more in scientific research, ensuring more institutions and research groups were well-funded to perform effective research.

"I really like how the Wellcome Trust really acts as that point between parliament and telling members of parliament about science. I really like that, and translating the technical to the layman. I think that's really important when trying to get funding because members of parliament are normal ordinary people like you and I. Some can be accountants, some can be a bus driver, but they will never truly understand the importance of research, and why we need funding, and how it can benefit them. I guess that's where the Wellcome Trust can play an enormous part."

Early Career Researcher, Industry

FUNDING ISSUES

However, Wellcome was seen as having a more negative influence on research culture by a few respondents, who felt that their **methods of allocating grants were leading to a vast gulf** between the 'haves' and the 'have nots'.

Some respondents believed that Wellcome's movement away from smaller, individual grants towards larger grants for senior fellows has resulted in a **decline in opportunities for junior academics** and an increase in stress and pressure for them. However, it is worth mentioning that most ascribed this to **research bodies in general**, with only a few mentioning Wellcome by name.

"Well, I was really disheartened when they changed the way that they were going to offer funding, you know, they used to offer individual research grants and larger programme grants that were on an open-call

basis, and that was brilliant. When they made that decision to stop doing that and to go to more kind of funded fellows, senior fellows that kind of removed that opportunity of funding to a large percentage of the academic population. It had a huge effect, honestly. It was horrendous when we found out that the Wellcome Trust had made that decision. In my mind, it was a very poor decision … we had huge chunks of Wellcome funding and that just removed a lot of that opportunity there. We have Senior Wellcome Fellows who are funded now, and that's brilliant, but what it's done is it's kind of created a dichotomy again. So you've got your very, very well-funded, very, very well … research labs that have many, many people in them and then your junior lecturers who are struggling to get research grants."

Middle Career Researcher, 1994 Group Institution

UNIQUE POSITION

Respondents agreed that Wellcome should play a vital role in improving research culture and that Wellcome was **uniquely placed to play an integral role in driving positive changes** within UK research culture. This opinion often revolved around the following three Wellcome attributes.

PRESTIGE

Wellcome's prominence within the research field was often cited. Many respondents earmarked them as **one of the strongest funding bodies in the country,** recognised by researchers across a range of disciplines as a particularly prestigious body from which to gain funding. With demand for their funding so high, respondents indicated that Wellcome enjoyed a uniquely powerful platform from which to **exert influence over researchers and their behaviours**.

"I suppose being such a prominent organisation I think it has a real opportunity to have a voice that will be heard. So hopefully whatever comes out of this research, the Wellcome Trust can use its profile, its reputation to convey some really strong and powerful messages that will hopefully lead to some kind of change."

Early Career Researcher, Russell Group Institution

TRUST

Not only did respondents feel that Wellcome's voice is heard, but that it is trusted. There was a common perception that **Wellcome had established an ethos of reliability and rigour** that made them a respected body within academic research. As a trusted figurehead, any direction they take would be mirrored by large swathes of the academic community who have faith in their judgement.

"From the researchers' position, Wellcome is one of the strongest funding bodies because of their ethos and their mission and their values. I think that Wellcome should be working together with the government and leading the way forward."

Early Career Researcher, University Alliance Institution

INDEPENDENCE

Finally, respondents regularly recognised that as a funding body with **autonomy from government,** Wellcome is uniquely placed to be a trailblazer for enacting change within the sector. Most funding councils, such as those within UKRI, are quasi-autonomous non-governmental organisations, subject to a range of

bureaucratic processes that limit or slow down their ability to enact impactful reform. As an **independent charity,** free from parliamentary jurisdiction, many felt that Wellcome enjoyed an agency to dictate and alter **how and where they allocate grants and funding**. This freedom led some to feel that Wellcome were somewhat **duty-bound to set a precedent** for other funding bodies to follow in driving positive reforms in the funding allocation process.

"One of the things that is great about the trust is that because it's not a public body, it's only accountable to itself and the charity commission so if it wants to strike out in a new direction, then it can do so much more promptly than a research council can. All it has to manage is its relationship with its research community and to some extent its public relations. It doesn't have to be accountable to parliament, it doesn't have to go through endless consultation processes, it can just decide, but, it also probably has to accept that the time it takes to make a significant culture change, it can be a generation rather than a year."

Middle Career Researcher, Russell Group Institution

RESPONDENT RECOMMENDATIONS FOR WELLCOME
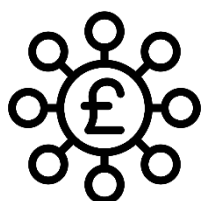
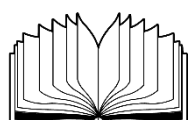|			
Involvement in training	Longer-term funding	Changes to funding criteria	More opportunities for ECRs
Changes to project supervision	Support for open publishing	Raising the profile of research	Showcasing diversity

INVOLVEMENT IN TRAINING

A common recommendation across interviews and co-creation workshops was for Wellcome to establish or promote training programme for researchers. It was argued that Wellcome could run training on a range of **topics to address the issues** identified as negatively affecting research culture.

MANAGEMENT

Courses on how to manage and mentor staff effectively were particularly popular amongst later-career researchers, who often described being promoted to PI or management positions on the basis of their

research output, **despite having relatively little knowledge or experience of managing**. While lacking the skills, awareness or support to mentor their PHD students and ECRs effectively, managers like this would be left feeling equally unsupported, undervalued or isolated.

It was often suggested that Wellcome could lead the way in **either providing this type of training to researchers or championing universities that already provided it**, in order to encourage other institutions to follow suit. Respondents suggested that this training should:

- Be led by experienced academics, with proven success in mentoring ECRs.
- Offer advice on how to deal with difficult personalities.
- Help develop understanding and how to recognise and respond to mental health issues.
- Aid leaders to manage finances effectively.

"If I decide to become a PI next year, I don't get any training on how to be a good manager. I think that's something that should be mandatory and is lacking at the moment, to have successful PIs who are very good managers. To understand different personalities, to know how to listen to different opinions, to understand that people might not be comfortable working under pressure, having to solve problems in a particular way, to understand diversity and be able to communicate despite differences."

Middle Career Researcher, Research Institute

DELIVERING AND RECEIVING FEEDBACK

Respondents in the co-creation workshops identified the feedback process as an area in which **researchers of all levels could benefit from training** and could include how to deliver feedback and criticism in a constructive manner. Some respondents, particularly ECRs, acknowledged that due to the nature of the research industry and high standards set by institutions, mentors were often heavily critical of their work – **showing little empathy around the time and energy spent on their work**, which was often a driver of increased pressure and feeling unworthy or isolated.

Equally, researchers identifying as working in positive research cultures often described the reinforcement received from mentors as key to enhancing their work environment, as well as the quality of their research output. Therefore, it could be beneficial for research cultures if Wellcome were to provide training on how to **positively reinforce staff and offer supportive mentoring**.

On the other hand, more experienced researchers in the co-creation workshops felt that PHD students and less experienced staff could benefit from **training on how to accept and manage criticism**. They thought ECRs were sometimes unprepared for the scrutiny their work would face, and as a result, felt the criticism they received was too personal – leading to a loss of confidence and enthusiasm. It was felt that Wellcome could help to prepare ECRs for academic scrutiny by providing training sessions or tips on **how to depersonalise criticism and use it in a constructive manner**.

WORK-LIFE BALANCE

Respondents felt Wellcome could do more to **share good practices** that create a better work-life balance for researchers. For instance, respondents suggested that Wellcome could share particularly positive initiatives from workplaces that enable staff to be more efficient or minimise hours in the workplace (e.g. working from home schemes, flexible working hours or refined administrative systems).

It was also felt that **educating PIs on how a positive work-life balance helps to improve the efficiency and quality of research** would lead to a positive cultural change. It was described how team leaders imposed an expectation of working unhealthy hours based on their outdated experiences and could not comprehend the benefits of shorter working hours for staff. It was thought that addressing these long-standing beliefs would require training legitimised by an established body like Wellcome.

NORMALISING POSITIVE RESEARCH CULTURES

Several respondents remarked that all of this **training must be accessible for all types of researchers**, regardless of experience or position within the team. It was argued that instilling positive leadership qualities in ECRs who are yet to hold leadership responsibility would help to drive positive research culture by **instilling empathetic, supportive and healthy work practices amongst future leaders**. Some identified the early-career fellowships as a good place for Wellcome to start encouraging teamwork and **normalising collegiality** within research.

"I'm just thinking because of course these are very high-standard fellowships and maybe, if at that point, already we start valuing the research culture and how the person contributes to the wider research culture, rather than just to the research field and publication, and so on, that might help, you know, growing a new generation."

Early Career Researcher, 1994 Group Institution

LONGER-TERM FUNDING FOR PROJECTS

PhD students and post-docs often indicated that Wellcome, and funding bodies as a whole, could help to improve research culture by providing longer-term funding for projects. They often described the **detrimental impacts short-term funding had on their lifestyles,** with the resulting short-term contracts bringing job insecurity and increased pressure to constantly secure new work. Longer-term funding would encourage institutions to follow suit and provide staff with longer contracts, bringing greater job security / stability and potentially alleviating stress.

"The way that is working now, is that you work with small contracts, so you don't have the stability to plan your life. You're more worried for the next year, but not for building your career. You're worried about paying the bills and … what is going to happen after this contract."

Early Career Researcher, Research Institute

Furthermore, all types of researchers tended to acknowledge that providing longer-term funding would have a positive influence on research quality. It was a common complaint that shorter-term projects brought **extremely tight, and often unrealistic, timelines.** The quality of the research and the mental health of researchers suffered as a result of this time pressure, with staff working unhealthy hours to complete the work in the timeframe and feeling forced to rush methodologies. Some even described not being able to fully complete research projects, as the funding and contracts had expired before the experimentation could be concluded. Longer-term funding was thought to provide researchers with **more breathing space to think creatively, re-evaluate and perfect experimentation**, enabling them to deliver more rigorous and accurate findings.

CHANGES TO FUNDING CRITERIA

Respondents felt that Wellcome could drive impactful changes to how grant applications are assessed and funding allocated. They identified several measures Wellcome could implement to shift focus more towards **quality and creativity, as opposed to valuing quantity and impact**.

REWARD RIGOROUS ETHICS

There was a prevalent idea that funding criteria were a **core driver of scientific misconduct**. Many argued that the nature of funding criteria, which rewarded researchers who had published in higher-impact journals, encouraged negative research behaviours, such as deliberate embellishment or distortion of scientific data.

With funding consistently granted to those with impactful research, teams that conducted rigorous **research to exemplary ethical standards only to discover null data** were often overlooked for future funding based on the lack of impactful findings, as opposed to their ability to perform excellent research. Numerous respondents felt this was a systemic issue that cultivated negative culture in which **demonstrating impact was prioritised over scientific conduct**.

Consequently, respondents commonly suggested that Wellcome should amend its funding criteria to **reward research teams that exhibit good research cultures and rigorous ethics**. This suggestion was particularly popular within the co-creation workshops, where respondents were able to discuss methods of implementing it. They suggested that Wellcome could:

- Set a precedent by assessing the health of a research environment, the satisfaction of their staff and the rigour of their work prior to allocating funding.
- Take into consideration research findings that may not have been published but exemplified high ethical standards.

Rewarding rigorous research methodologies with funding could **help reduce temptation** to embellish results to show impact, while promoting positive, ethical research practices in the pursuit of funding.

ENCOURAGE 'BLUE-SKY THINKING'

As mentioned before, respondents often commented that funding criteria were so focused on impact and community benefit it **stifled creativity and exploration**. Many believed government had cultivated this obsession, with research projects that had a less obvious outcome often overlooked as a result.

Respondents regularly indicated that these exploratory 'blue-sky thinking' projects played a crucial role in scientific research and were often the **source of many scientific breakthroughs**. Therefore, it was recommended that Wellcome either reduce the significance that perceived research outcome plays within grant applications, or **set aside funding specifically for blue-sky projects** in order to encourage research teams to continue working in an experimental fashion.

"I think funders – the Wellcome Trust or The Research Council – they should truly stand by pronouncements that are made over things like not using citation metrics and impact factors, things like that in decision-making over promotion and appointments. I think they should be less fixated with the perception of success of research. I think that when you work in academic research everybody does something different, some people will work on things that are directly related to a health benefit or the development of something that would truly benefit people. And other people are doing blue-sky research … And I think institutions

that fund need to continue to fund people with good ideas, almost irrespective of the area that they are in and the immediate perceived value of that work. I think it's quite clear that lots of technological development, medical developments, breakthroughs, they come from something that's completely unexpected."

Late Career Researcher, Russell Group Institution

BASE DECISIONS ON THE MERIT OF THE APPLICATION

Respondents also suggested that **Wellcome could place less priority on the publication record** of the individual submitting the grant, and instead more on the quality of the research idea and methodology. It was felt that, as publication records play an important role in the grant application process, access to funding had centralised around an **ever-shrinking pool of successful, senior researchers**.

Researchers with fewer high-impact journal publications to their name were often overlooked in the application process, which led to **increased pressure and job insecurity**. Some respondents felt that more research being performed by a select few had **created a uniformity of ideas** that could weaken outputs. Therefore, respondents often suggested that Wellcome should set the tone in shifting this funding focus – to **level the playing field for all researchers**.

"The other thing is its current emphasis on funding people rather than the science. In my opinion, those things are both areas where it needs to diversify. I think its fine to fund people, especially junior people, through specific fellowships, but the fact that if you have a good science idea, but you haven't had three or four Nature papers in the last five years, then that rules you out from getting funded by the Wellcome Trust. At a more senior level, I think it's just wrong. It's become so competitive now that even at the junior level, you're thinking about three or four PNAS level papers in order to have a chance of getting funding from the Wellcome Trust at a junior level. I think that's another thing where they need to diversify and, to some extent, go back to where they were before. They need to look at the science in proposals, rather than the scientist and their publication record."

Late Career Researcher, Russell Group Institution

ENCOURAGE GREATER DIVERSITY IN RESEARCH

A number of respondents from minority groups argued that the Wellcome grant application process was in some ways **symptomatic of the failure of the research community to promote staff diversity**. It was regularly suggested that the focus on publication record and reputation allowed established researchers to dominate funding channels.

These respondents voiced a belief that this small group of successful researchers is overwhelmingly **made up of non-disabled, white men**. Respondents recommended a number of measures Wellcome could introduce to its funding allocation process in order to provide greater opportunity for minority groups and encourage wider diversity among researchers:

- **Anonymising the grant application process to prevent unconscious biases** of funding decision-makers from having any bearing on who receives funding.
- Assessing and re-evaluating the funded base of researchers (in terms of ethnicity, gender and disability) on a regular basis to ensure Wellcome can **identify under-funded groups** of researchers and allocate future funding to redress this.

- Allocating **extra funds and support for those with additional needs** to ensure greater accessibility for disabled researchers.
- Appointing more **diverse groups of academics to grant assessment panels**.
- One interview respondent suggested that **'positive discrimination'** is now necessary to rectify the systemic lack of diversity.

For the most part, these suggestions were raised by those with protected characteristics. However the wider sample were generally acknowledging of the current system favouring certain individuals and the need for this to be addressed, although this was often not their top priority for improvements to research culture.

MORE OPPORTUNITIES FOR ECRS

Many respondents felt that **Wellcome could do much to improve the current difficulties facing ECRs** in securing funding and contracts – as detailed throughout this report.

PROVIDE A MORE DIVERSE RANGE OF GRANTS

One remedy proposed by several respondents was for Wellcome to diversify their grants – particularly taking a stance in reinstating smaller grants with more extended timeframes, which were thought to be well-suited to ECRs, who may **require time but not huge amounts to execute their research idea**. Also, by being small, these grants **would not attract the attention of the more established academics** who currently dominate the industry and in this way would give more ECRs a chance to access funding and prove their ability to perform successful research.

"So Wellcome used to fund smaller project grants throughout the university systems, and they stopped that and they have put their money into bigger, larger grants which is fantastic if you're in the right place and are able to get that funding, but obviously there are fewer of them. So then the numbers are dropping and they're still dropping, and that I think is impacting the way we educate our future scientists across the university itself."

Middle Career Researcher, Russell Group Institution

SIPHON OFF FUNDING SPECIFICALLY FOR ECRS

Some respondents felt that Wellcome should offer grants exclusively to ECRs. Many respondents described how the competition for an ever-shrinking funding pot was such that even small grants were **targeted by experienced researchers as a means of meeting their own targets**.

A number of experienced researchers were thought to have mastered 'playing the game' of grant submission, with a risk that a good application made by an inexperienced researcher could be surpassed by a more experienced competitor. With many respondents determining that investing in ECRs was key to improving research culture, designating certain grants exclusively for this group may be the best way to ensure they are **provided with a genuine opportunity to develop their career**.

MORE OPPORTUNITIES FOR ECRS TO COLLABORATE

A few ECRs felt that Wellcome could **host networking events** to encourage collaboration between researchers across different institutions. This was especially common with ECRs who felt isolated or **unsupported by their current mentors**. They often said that these sorts of events reduced the reliance a PhD student had on their appointed supervisor and enabled them to **access guidance and support** from

alternative avenues. In an industry where jobs were short-term and difficult to secure, networking events were also perceived by some as a platform for **hearing about new employment opportunities**.

"Possibly provide more opportunities for PhD researchers to collaborate between research groups, probably because it feels like we're in a little, tiny bubble and I guess we've all got work to do and that's what we do, but no it is a learning opportunity where we could diversify a little bit."

<div align="right">

PhD Student, Russell Group Institution

</div>

CHANGES TO PROJECT SUPERVISION BY WELLCOME

There seemed to be consensus that Wellcome could drive positive change and alter the behaviours of negative figures within research communities by **adopting a strong stance on project supervision**. It was often commented by ECRs that instances of bullying, harassment or scientific misconduct within their teams could easily go undiagnosed, as there was a **fear of reprisal**. Although many acknowledged that Wellcome already had high expectations of behavioural and ethical standards, some felt that more **direct action was required to identify and eradicate poor practice**. For example:

- Random, **spot-check supervisions** of funded research environments to evaluate the wellbeing of staff and the rigour of their research methods.
- Providing an **anonymous platform** to report negative behaviour (e.g. bullying, misconduct).
- **Post-analysis of research to** identify any replicability issues or scientific misconduct.
- Continuing to have a firm stance on instances where negative practices were identified, setting **an example of zero tolerance for others to follow**.

"Just because they are such a large funding body, what they say is extremely ... and people follow them. For example, I believe they took grant money away ... they had a policy where, if there was a case of bullying, they would take the funding away. I believe that was done either last year or the year before. When they did that, that was really powerful and that just started the discussion within my environment with lots of different people and I hope made people reconsider their actions. So, implementing and being the leaders in that I think is super-powerful, especially because they do fund so many people."

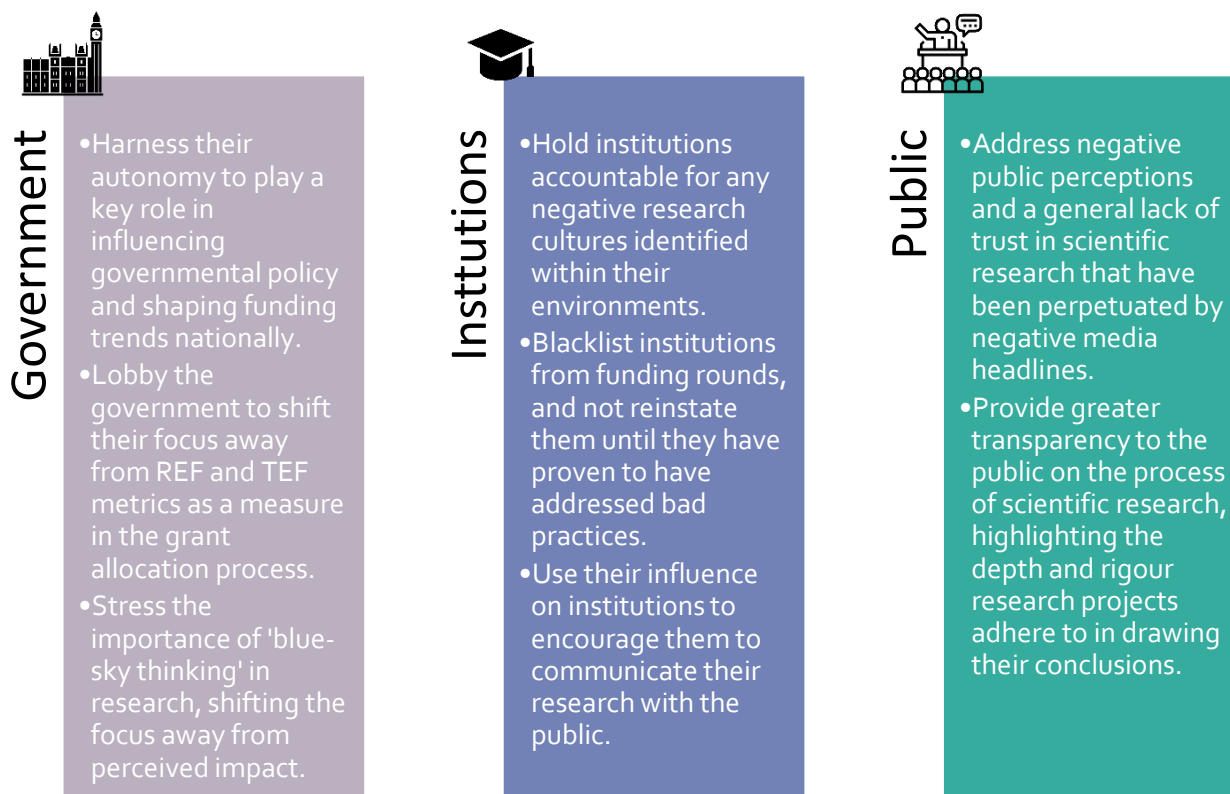<div align="right">

Post-Doc, Industry

</div>

SUPPORT FOR OPEN PUBLISHING

A number of respondents praised Wellcome for their commitment to providing open access to the research conducted through their funding. However, when describing other funding bodies, respondents mentioned the issues around limited access to research findings. Some now felt that Wellcome could use its status within the industry to **champion the benefits of providing open access**.

A few even suggested that Wellcome could **strive towards providing open access to data sets** from research projects. Not only did researchers identify that this information would be valuable for them to access for research purposes, but that it would **provide even greater transparency**. It was felt that, with data sets universally available, they would come under greater scrutiny and instances of scientific **misconduct would be more easily identified and researchers deterred from unethical practices**.

USING ITS INFLUENCE MORE WIDELY

Respondents identified a number of ways that Wellcome could further benefit research culture by using its influence over government, institutions and the public to **stress the value of academic research** and the need for continued, or even increased, investment in the sector.

Government

- Harness their autonomy to play a key role in influencing governmental policy and shaping funding trends nationally.
- Lobby the government to shift their focus away from REF and TEF metrics as a measure in the grant allocation process.
- Stress the importance of 'blue-sky thinking' in research, shifting the focus away from perceived impact.

Institutions

- Hold institutions accountable for any negative research cultures identified within their environments.
- Blacklist institutions from funding rounds, and not reinstate them until they have proven to have addressed bad practices.
- Use their influence on institutions to encourage them to communicate their research with the public.

Public

- Address negative public perceptions and a general lack of trust in scientific research that have been perpetuated by negative media headlines.
- Provide greater transparency to the public on the process of scientific research, highlighting the depth and rigour research projects adhere to in drawing their conclusions.

"I think that maybe one of the things Wellcome could also do is engage better with government to try and perhaps change the focus on REF outputs as a metric because this is what is the game in town, Nature papers, Dell type papers, and this is how we're measured every seven years. If that focus was removed and took more into account a more holistic view of individuals rather than just four paper outputs then perhaps that would be a better way of measuring individuals and departments because at the moment … We take a snapshot of outputs, and that's not a good way to measure people and their interaction with other members of staff and students."

Middle Career Researcher, Russell Group Institution

"I think linking with general public would be very important and Wellcome has done stellar work out of that with their initiatives… It's a box ticking exercise for institutions and I think that the Wellcome needs to do some work to make sure that this is not because they need to in order to get that grant or to be in a good REF position, but it's a social responsibility of researchers. We love learning new things, we should love communicating those to general population and especially to those who might be directly benefitted from our research."

Early Career Researcher, University Alliance Institution

SHOWCASE DIVERSITY

Respondents felt that Wellcome was **uniquely placed to raise awareness of the lack of diversity** within the upper echelons of academic research, and champion the benefits diversity brings to research communities. A number of methods were identified:

- Celebrate the work of researchers from minority groups within public spaces, encouraging aspiring researchers from similar backgrounds to pursue a career in academia.
- Promote institutions that have taken measures to make their work spaces inclusive and diverse.
- Consistently champion the benefit that internationalism and diversity bring to both research cultures and the quality of output.
- One respondent with a physical disability explained that Wellcome could take the lead in addressing some of the barriers that researchers from minority groups face in developing an academic career. For instance, investing in conferencing software, such as Skype, to be used at events and conferences to make them more accessible for those with physical disabilities.

"Diversity is important. It's the top of your list for good reason. One thing that the Wellcome could do is help people like me at my age group, white middle-aged men, who are the vast majority of my colleagues, to really understand the benefits of diversity and what diversity brings."

Late Career Researcher, Russell Group Institution

"Wellcome can help hugely on those points of making conferences use technology/IT solutions, doing these things remotely over the internet, maybe allowing networking to be done over technology like Skype or Zoom. Wellcome could invest in those remote technologies to make it easier for disabled people to be part of the academic community, who can't make it to those conferences, and it would not just benefit disabled academics but also those with young families who can't make those journeys. It can benefit LGBT people where conferences are held in parts of the world where being gay or having a relationship of that kind can be illegal and you end up in prison. It can open up a load more advantages and opportunities for people, so Wellcome could push that forward."

Middle Career Researcher, Russell Group Institution

RESPONSES TO INITIAL GOALS

Respondents were presented with a list of work-in-progress goals for an improved research culture, under development from Wellcome:

1. The research community should attracts a diverse range of people and skills.
2. Productive competition and innovative thinking drive progress.
3. Respect and public engagement help strengthen society's trust in research.
4. High standards of ethical and scientific conduct lead to high-quality research outputs.
5. Action is taken when standards and behaviours fall below acceptable norms.
6. Colleagues promote sustainable research practices to each other.
7. Excellent leadership and management is celebrated.
8. Working practices allow people to sustainably operate at their best.
9. The investment needed to build beneficial collaborations is valued.

Respondents generally **reacted positively to Wellcome's proposed list of goals** for improving research culture. Many commented that the list effectively addressed the systemic issues impacting research cultures and would benefit the research community if adhered to. In particular, 'diverse range of people', 'excellent

leadership is celebrated', 'public engagement' and 'collaboration is valued' stood out as important to researchers.

DIVERSE RANGE OF PEOPLE

The goal that 'the research community should attract a diverse range of people' resonated with a large number of respondents, who often expressed delight in hearing that Wellcome was taking action to rectify the current lack of diversity within research. They felt that this goal was important to reinforce the **need for celebrating and promoting diversity** in all forms within academic research.

One respondent highlighted that 'diverse' here should not just relate to demographic attributes, but was **also important in terms of diversity of knowledge and specialism**. For instance, they described how certain researchers with niche specialisms, like taxonomy, were often overlooked due to a perceived lack of impact when they should also be celebrated.

"The first one about diversity is very important because we tend to see that our researchers' demographic do not match society and our students. We produce lots of research students but they don't get up into the ranks, so diversity would be important."

Early Career Researcher, University Alliance Institution

EXCELLENT LEADERSHIP IS CELEBRATED

Respondents of various types identified this goal as particularly important. As mentioned, many felt that the research community suffered from a shortage of senior staff with effective management qualities. Many felt that **poor management was the source of many negative aspects of culture**, such as heightened competition, pressurised environments and isolation amongst junior researchers. Therefore, it was felt that **championing examples of excellent leadership** would encourage wider adoption of good practices, with tangible impacts on the research cultures of numerous institutions.

"I think management needs to be celebrated where it goes well because that might encourage some of our managers to do a slightly better job than they're doing at the moment. I work in an environment where I don't see good management, and it is a problem on a daily basis where decisions are made by people in their little offices. They're not active on the shop floor, so to speak. They don't engage with undergraduate students. They have a very fixed view of how a university operates, which is quite different to the one I see on a day-to-day basis, and they're not doing a very good job."

Middle Career Researcher, Russell Group Institution

However, it is important to note that some late-career researchers identified risks with championing leadership in this way. They argued that a systemic issue within research was that junior team members, who often performed much of the work, **did not receive the recognition they deserved**. Instead, PIs or team leaders would 'steal the limelight' and absorb credit for the work individually. As a result, some worried that this practice of celebrating leaders may compound the problem. Perhaps rewording this goal and positioning it in terms of promoting 'managerial excellence' as opposed to 'research leadership' could assuage concerns.

"So the one about celebrating leadership and best management is something that I would not like, because it may celebrate the wrong thing because a lot of major research is being done by junior people, for instance. A lot of very visible people are maybe the leadership, people in the leadership team or management at an even higher level, so I think a lot of achievements are achieved by individuals who are not actually in the management team."

Late Career Researcher, Non-aligned University

PUBLIC ENGAGEMENT

Respondents often identified 'public engagement' as a significant element of these goals. It was frequently recognised in interviews that greater public awareness of the process and successes of academic research would **dispel some of the negative perceptions that have grown in recent years**.

Once these goals were read, some identified that this goal was also important in reaffirming the need for public engagement to researchers. There was a perception that some researchers, particularly late career and male researchers, had grown disillusioned with the value of engaging with the public on academic matters, and had reduced their commitment to it as a consequence. Thus, Wellcome **reaffirming the value of public engagement in generating funding and trust in academic research** would do much to realign thinking and reinvigorate enthusiasm for public engagement.

COLLABORATION IS VALUED

Respondents determined that encouraging collaboration would **help to remedy the negative feelings researchers experienced around isolation and lack of support**. Not only this, it was felt that 'collaboration' in this context was valuable in encouraging communication between researchers of different disciplines, institutions or nationalities within research. Respondents often characterised positive and successful research experiences as being **multi-disciplinary and utilising a diverse range of researchers in terms of specialism and background.** Therefore, Wellcome's commitment to collaboration and the inclusion of this term within their goals was seen as valuable.

COMPETITION

There were some aspects of the goals that garnered more negative feedback from respondents. Use of the word 'competition' was particularly problematic for some, as competition itself was often deemed to be a **driver of negative cultures** that exist within research communities.

Many deemed **healthy competition** to be good for Wellcome to promote, but at the same time, they felt that leading with the word 'competition' itself may have a detrimental impact in legitimising the practices of those who embellish data or refuse to collaborate in order to maximise their own output. These respondents often suggested that the word 'collaboration' be adopted here instead, **strengthening the message that researchers operate as a collective in achieving positive outputs**.

"The first one, I worry slightly about the phrase productive competition. That's what we're getting in my department with this let's all compete for the best output for the REF, and it's counter to the last one you said about collaboration, so the model of collaboration is far better than one of competition. Competition is … academics are going to research. We want to research. We don't need to compete about it, so I have an issue with that word competition. I'm not sure that's helpful, and it's been used in very dire ways."

Middle Career Researcher, Russell Group Institution

AMBIGUITY

Some respondents complained that certain goals were too ambiguous to have genuine impact. These complaints were particularly **centered on the words 'standards' and 'norms'.**

They argued that without Wellcome providing any proviso as to what constitutes poor standards within academic research, this statement would have very little influence over institutions or individuals who, though facilitating poor standards, may themselves interpret their own research culture as suitable. Therefore, respondents often determined that **Wellcome must provide more context** around what is meant by 'standards' and clearly define when an institution is falling below what is expected.

Similarly, 'norms' was deemed to be too ambiguous by some, who felt that the wide differences between research cultures and the environments they exist within meant there was not one consistent research environment that could be **universally defined as 'normal'.**

"What does 'standards' mean in that? It's pretty ambiguous. Is that a panel who decide what those standards are? Is this a case-by-case thing? Standard would need to be defined. The standard would be a drawing in of the qualities described in the other goals, so things like respect and diversity, and some of the key things. The standard would be upholding those things in the ideal world. The standard would not be defined on a case-by-case basis because that can lead to problems. That can lead to problems in your expectations of people, what that standard is."

Middle Career Researcher, Russell Group Institution

REDACT THE LIST

A small number of respondents complained that the set of goals was too long. They felt that instead, Wellcome would have far greater impact if they focussed their effort and resources around a smaller, **core set of goals**.

"It needs to be halved. It's far too long, and it's more important for the Wellcome Trust to focus on three key areas and priorities they can deliver on instead of focusing on ten because they'll be able to create the most impact and put more resources into actions that really work, or the ones they really care about. It's about using your resources effectively to aid research culture."

Early Career Researcher, Industry

OUTPUTS FROM CO-CREATION WORKSHOPS

After the qualitative interviews, 4 co-creation groups were held, each containing 9 researchers working in teams of 3. These sessions were explicitly focused on generating a new vision and ideas for solutions to improve research working culture.

VISIONS FOR AN IMPROVED WORK CULTURE

At the heart of our co-creation respondents' vision for positive research culture was the idea of a supportive and collaborative community, which values quality, creativity, diversity, flexibility and freedom, while respecting researchers' wellbeing and career development.

Terms related to **'collaboration' and 'support'** were by far the most frequently mentioned across the groups, followed closely by the concepts of 'quality' and 'value'.

Examples of vision statements generated by respondents included:

- A good research culture would balance productivity with creativity, competition with kindness and quality with freedom.
- A supportive, collaborative environment with elective, meaningful structures in place to support self-development and progression, and which actually recognise and values staff wellbeing.
- An environment that supports and promotes: collaboration, flexibility (i.e. allowing people to be the best version of themselves based on what they are good at), career development, implementing code of conduct without (fear of) discrimination and quality/diversity at the heart.
- One moving on from a dog-eat-dog / machismo / business vision to a vision that is more creative, inclusive, collaborative and fun.
- One relying on collaboration and autonomy rather than competition, artificial targets and measures.
- One that fosters collaboration, high quality standards, creativity and progress by a supportive environment that instills acknowledgement, security, respect and fairness.

Visions generated by respondents were **fairly homogenous**. Respondents wanted a culture that still pushed them to achieve the highest of standards, but one that was supportive, diverse and collaborative, where they felt more safe and protected. **These aspects were all thought to lead to greater creativity and higher-quality outputs**.

IDEAS FROM THE CO-CREATION WORKSHOPS

As with respondents' visions for an improved research culture, ideas across all four groups were remarkably consistent and generally fell across these 5 areas.

- Mentoring and leadership
- Acting on bad behaviour
- Funding
- Support for ECRs
- Wellness and space **to think**

It is notable that many of the suggestions (in both interviews and workshops) were fairly simple, often just making **small changes or tweaks to existing systems** rather than overhauling them entirely.

MENTORING AND LEADERSHIP

Support for academics through mentoring and leadership was highlighted in two workshops as key to improving research culture. How this would look varied amongst groups, but included:

- **1-2-1 mentoring schemes** – with emphasis on good quality academics acting as mentors in order to ensure that only best practice was shared amongst researchers.
- Demonstrating what good management and leadership looks like in face-to-face sessions from trusted and respected leaders – those who have exhibited exemplary leadership qualities, not simply those that have been published a number of times.
- The provision of good quality training, with focus on the following topics:
  o Leadership skills.
  o How to manage projects.
  o How to communicate to wider team.
  o How to deal with difficult personalities.
  o How to manage health and mental health.
  o How to manage finances.
  o How to deliver and receive evaluations and feedback.
  o How to manage work-life balance.
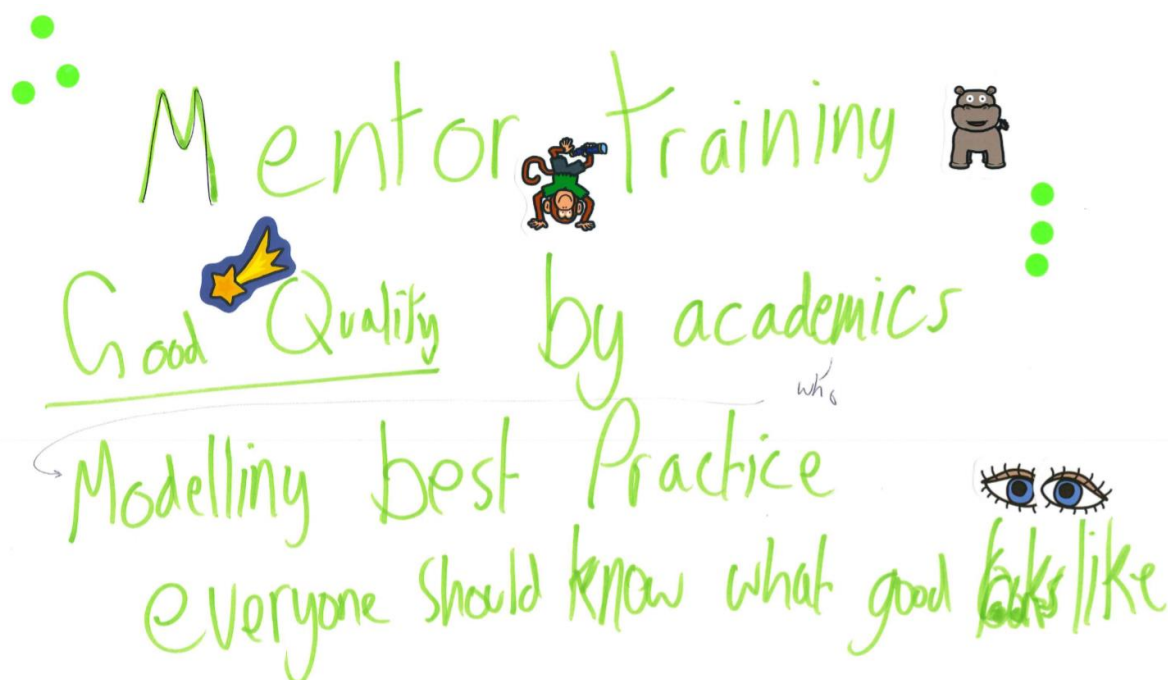
While they felt that something needed to be put into place for different roles, they were not clear about who would implement or fund the training. However, a supportive atmosphere was felt to be lacking, with a feeling that **better quality management was vital** in changing current culture for the better.

ACTING ON BAD BEHAVIOUR

Preventing bad behaviour through action was prominent for some respondents who suggested ways of developing the current system to ensure that this was put into practice:

- **A zero-tolerance approach to abuse in the workplace,** including refusal to fund individuals / institutions with poor culture. In turn those demonstrating good practice would be rewarded.
- **360˚ anonymous appraisals** and not base promotion merely on publication.
- **Give staff surveys more power** – treating them like the NSS. They should play a part in identifying problems and highlighting where managers are not supporting staff effectively. It was felt that this should play a part in funding for departments.
- **Introduce a new ombudsman for research culture** and an equivalent of Athena SWAN to encourage impartiality.

There was an emphasis place by many on **fairness in the workplace** and, to ensure this, changing bad behaviour was vital.

ALTERATIONS TO FUNDING

Various changes to funding structures were mentioned in the hope of improving research culture.

- Anonymous grant submissions.
- Padding on short-grant contracts to allow time for quality control.
- Specific funding for women and ECRs. Small to medium-sized grants to provide them with more income security was considered a way of also improving the research.
- More diversity on funding panels.
- Smaller funding grants.
- Simple applications with quick turnarounds.

SUPPORT FOR ECRS

It is clear that many felt more support was required for ECRs, with training and funding (already highlighted) a key part of this. Specifics of **extra support requested** for ECRs included:

- Programmes to help researchers get started in their careers – a need for training in this area was desired, with continued mentoring.
- Specific funding for early-career researchers, like seed funding.
- Rewards for those who don't publish – rewarding ideas as well as the final output.
- Events to bring researchers together – allowing them to make further contacts.
- Make 90/10 rules compulsory.
- Create clearer road maps of opportunities.

WELLNESS AND SPACE TO THINK

This was a hugely important aspect of research culture, with flexibility and supporting a work-life balance highlighted in particular. Suggested ways of improving wellness included:

- Writing retreats – in the form of away days in which researchers come together to share ideas and take part in activities to produce outcomes.
- Unconferences.
- Encouragement to take sabbaticals.
- The provision of childcare support.
- Practical advice on stress and anxiety
- Changing perceptions around taking time off work. Ensuring that the focus is positive for the wellbeing of both the researcher and the research, and not allowing it to be viewed negatively.

CONCLUSION AND RECOMMENDATIONS

CONCLUSION

Most respondents felt that UK research is still producing high-quality outputs. Life as a researcher is not expected to have the same shape as that in other careers and researchers appreciate that they have taken on a vocation that is highly competitive and requires significant commitment in terms of time and energy.

However, this report highlights many areas in which research culture is not optimal, resulting in negative outcomes both for individual researchers and the development of new knowledge or science, particularly in the longer term. This is particularly the case for those working in the university sector, where conflicting pressures appear to be more intense. Furthermore, many feel that research culture is moving away from its historical benefits, such as autonomy, creativity and collaboration, with many expressing concerns about the impact this might have on the sustainability of UK research quality in the future.

Experiences of research culture are highly individualised, with a complex and interconnected set of conditions and behaviours likely to affect researchers and their working environments. Experiences appears to be highly varied, influenced by many aspects of their own situation including career stage, working environment and current job satisfaction. In addition it is important to remember that respondents often saw culture through their own lens – reflecting their own backgrounds, previous experiences and bias. This may create additional challenges for individuals and institutions seeking to create a more inclusive culture.

Wellcome is seen by many as a largely positive force, with particular praise given to its stand on open publishing. Its position as an organisation that is trusted, prestigious and independent of government puts it in a unique position to exert a positive influence on research culture. This influence could be exerted through lobbying government and other organisations, showcasing and promoting good practice, providing training and resources, as well as through how it chooses to allocate funding in future and how projects are then monitored and managed.

It appears there are many actions Wellcome could usefully take to improve research culture, as outlined in this report. Many actions taken by institutions in this area are dismissed by researchers as 'tokenistic' and care needs to be taken that Wellcome does not fall into this trap. Wellcome also needs to ensure actions are not seen to increase what many researchers consider to be an already overwhelming workload, particularly during funding applications. Wellcome's proposed list of goals for improving research culture appear, with some amendment, to be a good place to start and Wellcome's further involvement in this area will be appreciated by many in the sector.