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WELLCOME TRUST: RESEARCH CULTURE | QUANTITATIVE PHASE

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Executive summary

- Wellcome is launching an ambitious programme to improve research culture. A critical element is to expand the evidence base around research culture and its impacts. Shift Learning were commissioned to conduct research to support this programme and this report outlines the final quantitative phase. An online survey was developed to reach those within the research community. A final useable sample of 4267 respondents was obtained.
- 84% of respondents agreed they were proud to work within the research community. Positive perceptions of research culture were identified, most commonly: exciting, innovative, excellence, ambitious and rewarding. While approximately two thirds (62%) suggested they would recommend their lab/department to other researchers, fewer would recommend a research career in their sector (50%). The latter finding was particularly relevant for those working in academia (47%).
- Findings identified that job insecurity was a key issue for the research community. Nearly half of respondents who had left the research community (45%) reported that one of the reasons for their departure was the difficulty in finding a job and facing an insecure career path. Furthermore, only 29% of respondents agreed they felt secure pursuing a research career and 38% believed there was longevity in a research career. Results suggested that researchers in junior roles were significantly less likely to feel secure than senior researchers.
- 40% of respondents agreed they had flexible career options available to them, but 38% disagreed. Those working in academia were significantly likely to be in the latter group. While approximately two thirds (65%) of respondents were aware of alternative career options outside of research that could utilise their skills, significantly fewer were aware of a range of different career options within research (53%). This suggested a lack of awareness of different career options within the sector, which could lead to a loss of talent if competition remains fierce within desired career routes.
- Respondents were asked a number of questions relating to their working environments. Findings indicated that rigour, collaboration and creativity were
 likely to be recognised within working environments all of which were found to be desired characteristics of an 'ideal' research culture. Findings
 suggested high levels of positivity of research culture at the localised level (for example, within teams and departments), compared to wider culture
 within institutions and beyond. This was particularly recognised amongst those working in industry.

Executive summary | continued

- Research institutions, funding bodies and senior researchers were thought to hold the highest level of responsibility, whereas only 29% believed individuals in the community held high responsibility. Nevertheless, 71% of respondents thought that individuals can drive positive change in research culture. Open questioning found respondents believed effective individual actions would include setting an example, supporting peers and colleagues, encouraging change within teams, and speaking up about wrongdoing.
- Results identified a potential disconnect between supervisors' perceptions of their skills and management skills in practice within the sector. When
 exploring the type of support that employed or student researchers had received from their supervisors within the past 12 months, respondents were likely
 to select an average of 4 out of 14. Respondents were unlikely to have received examples of appropriate research standards (18%) and ethical codes (13%)
 from their supervisors. Furthermore, 24% of junior researchers and students disagreed that their supervisors regularly reviewed their work, and 23%
 indicated they had felt pressured by their supervisor to produce a particular result.
- Supervisors within our sample appeared confident in their skills despite only 48% reporting they had received training on managing people. This
 suggested a lack of recognition of the need for training amongst these respondents. Only 44% believed good management and leadership was recognised
 at their workplace, suggesting there may be a lack of incentives for good management.
- 35% of respondents indicated they would not feel comfortable reporting instances of compromised research standards without fear of personal consequences. This was particularly the case for junior researchers. 40% of respondents suggested they did not know how to report instances of research misconduct and 37% did not have a clear understanding of what their workplace considered compromised research to be. These findings suggested more could be done to ensure clear policy is in place within workplaces and researchers are confident they will not be at risk of repercussions for speaking out.
- 72% of respondents in full-time employment reported working more than 40 hours a week on average, whilst 33% worked more than 50 hours. A positive correlation between working hours and stress was identified, in which those who reported working more hours per week had higher stress ratings. 70% of employed respondents and students reported feeling stressed on an average working day. 62% of respondents agreed that the system exploited their interest in the work they do leading to a heavy workload and 48% agreed they felt pressured to work long hours.

Executive summary | continued

- 96% of respondents agreed wellbeing was fundamental to an effective working environment. However, only 28% agreed that their workplace wellbeing initiatives were appropriate for their needs and 44% agreed that their workplace offered adequate wellbeing support. 34% of respondents had sought professional help for depression or anxiety during their research career, while 19% wanted to but had not yet done so. Poor perceptions, as well as promotion, of workplace wellbeing support could be limiting uptake and preventing researchers getting the help they need.
- Respondents were asked to rate the impact of current research culture in regards to quality of research, individuals and society. While research culture was
 more likely to be considered to have a positive impact on the quality of research and society, a higher proportion thought it was having a negative impact
 on individuals. Results relating to wellbeing, as well as the perceived negative impact that culture was thought to have on individuals, raises questions as
 to whether research quality can remain unimpacted whilst researchers are negatively affected.
- 43% of respondents reported that they had experienced bullying and/or harassment, whilst 35% had experienced discrimination. Experienced and
 witnessed behaviour was most likely to be related to gender, followed by race/ethnicity and age. Only 37% of respondents reported they would feel
 comfortable speaking out about bullying or harassment and only a quarter thought it would be acted on appropriately. These findings suggest respondents
 believe initiatives related to tackling these issues are tokenistic. 33% agreed that their workplace leaders turn a blind eye to bullying and harassment, whilst
 26% agreed leaders turned a blind eye to discrimination.
- Despite research involving a high level of teamwork, individualism was a theme identified in results. 69% of respondents suggested a career in research could be isolating and lonely. Respondents working in academia were significantly likely to agree with this statement, compared to those in industry. 78% of respondents agreed that high levels of competition had created unkind and aggressive research conditions.
- Respondents suggested a number of solutions to enable significant change in research culture. The most common open responses were related to
 changes in funding conditions, increased job security and addressing issues around increased metricisation. Respondents were asked to rank initiative ideas
 related to improving research culture. Nearly half of respondents (45%) thought Wellcome's first priority should be recognising and rewarding good
 practices and behaviours that improve research culture.



BACKGROUND AND METHODOLOGY

Background and objectives

- 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 research and the impact it has both on researchers and the research itself.
- Wellcome is launching an ambitious programme to improve research culture. A critical element is to expand the evidence base
 around 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 represents the results of the quantitative phase.
- 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.



Methodology

- After an initial qualitative phase involving 94 in-depth interviews and 4 co-creation workshops, questioning for an online survey was developed.
- The survey included up to 70 questions with an estimated completion time of 25 minutes, but this varied depending on respondent route. Participants were incentivised with entry into a £350 prize draw.
- Various recruitment methods were used to widen the survey's reach, including use of third-party data suppliers, blog posts and social media. Most respondents were sourced via the Wellcome website. They were self-selecting, so it is likely biases are present in terms of those who feel particularly strongly about research culture. While underrepresented groups within the sector were specifically targeted, they were also underrepresented within our sample. This is likely linked to survey fatigue, with minority groups regularly called upon to answer questions covered in this research.
- Participants from a mixture of institution types, research disciplines, research spaces, career stages, global regions and demographic backgrounds were targeted. The survey was live for 5 weeks (from September 2019). The survey sought to corroborate findings from the qualitative stage, in addition to understanding differences in perceptions, attitudes and visions for research culture in relation to different group factors.
- Survey engagement was high, with 7646 responses recorded during the live period. Following survey closure, the data was cleaned to remove any poor quality, incomplete or inappropriate data. A final useable sample of 4267 was then analysed.
- Open responses were coded into frames that were derived using qualitative insight. Additional derived variables were then created to support analysis. Scores were developed based on a range of agreement statements asked as part of questioning. This will support longitudinal tracking.
- No weighting was applied during analysis and only complete cases were used in final analysis to minimise the risk of unidentified duplicates.
 Respondents were guaranteed anonymity, therefore results within this report are outlined in the aggregate. Published quantitative data will not include open responses nor possibly identifying demographic information.
- Q Research software was used to support data analysis. By default, Q conducts various tests of statistical significance on tables, such as independent t-tests and Chi-square tests, where applicable. Multiple-comparisons correction is applied where appropriate. A p-value of 0.05 is used for significance testing.

DATA CLEANING, CODING AND ANALYSIS:



PROFILE OF RESPONDENTS

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A high proportion of respondents belonged to the biomedical or biology disciplines, while most worked in academia

Q. Which of the following best describes your research discipline or sector?

Research Discipline	% of respondents	Other research
Biomedical	30%	by respondents
Biology	26%	included: Chemistry
Social Science / Psychology	18%	(4%), Computer
Medicine	18%	Science (3%) and Physics (3%).1
Humanities	10%	Base n - (186
		Base II – 4100



Respondents were asked how long they had been working within the research community, including years studying. Entry Level respondents were those who had been working in research for less than 2 years, Early Career 3-10 years, Mid Career 11-30 years and Late career more than 30 years.



1. Please see appendix for complete breakdown of research disciplines; 2. Please see appendix for breakdown of workplace settings; 3. Please see appendix for breakdown of job roles of respondents.

Three quarters of respondents were based in the UK



The majority of respondents who completed the survey were women – the survey also captured respondents from minority groups in terms of ethnicity and sexual orientation

Respondents were not obliged to supply personal information within the demographic section. It is worth noting that 5% of respondents selected 'prefer not to say' when asked for their ethnicity, for instance.
BAME respondents were underrepresented in our sample – not only as

they are underrepresented in the sector, but also due to an element of

individuals are likely to experience an element of survey fatigue, with minority groups frequently targeted by similar research projects to

self-selection bias (opting not to take part in the research). These

achieve diverse and representative samples.

Ethnicity of UK-based respondents (n) White 2720 Asian 181 Prefer not to say 149 Mixed 92 Black 19 Arab 14 Other 40 Base n = 3224 Unknown 9



56% of respondents did not have caring responsibilities, with women more likely to be primary carers than their male counterparts



While only 6% of respondents self-identified as disabled, 32% reported living with a disability, long-term health condition or mental health condition



Q. Do you have any of the following disabilities, long-term health conditions, mental health conditions or impairments?

	neck and show	ack, ulder)		
11%	10% 4%	3%	2%	2%

Job insecurity appeared to be a significant driver for those who had left research

- While the majority of the sample were employed (74%) and/or a student (21%), 4% reported they used to be part of the research community but no longer were.
- The latter respondents were asked to select their reasons for leaving the research community: 45% indicated it was due to job insecurity, whilst 37% wanted a better worklife balance. An impact on wellbeing and mental health was also a significant driver.
- These findings concurred with the qualitative results, in which many suggested a lack of flexible or alternative career options leading to difficulty in finding a job. The nature of short-term contracts was also thought to contribute to career insecurity.
- Unfortunately, we were unable to identify statistically significant differences in reasons for leaving the research community by demographic factors due to sample size.
- 47% of respondents who had left the research community had done so more than 5 years ago, whereas 16% had done so less than 1 year ago. Questioning was limited for those who had left >5 years ago.

Too difficult to find a job / insecure career path For a better work-life balance It was impacting on my wellbeing & mental health I wanted to apply my skills elsewhere For career progression / development Bullying and harassment Too difficult to obtain funding My contract ended / my role was terminated For better compensation / salary The career was too demanding I'm no longer interested in a research-related career Discrimination Personal reasons To launch my own business Retirement 1% Base n = 174.

Q: Why did you leave the research community? (Multiple choice)



33% of full-time employed respondents reported working over 50 hours per week



Q: On average, how many hours a week do you work? (Results for full-time employed only)



- Employed respondents were asked to describe their status. Just over half (51%) reported they were in full-time permanent positions, whereas 37% were in full-time fixed term / contract positions.
- Of the 1,326 respondents in a fixed term position, 51% reported that the overall length of their contract was 3+ years, whereas 36% indicated they were in a 1-2 year contract. 11% reported their overall contract was less than 1 year.
- Dissatisfaction with long working hours was identified as an issue during the qualitative phase. We therefore wanted to identify the average number of hours those in the research community were likely to work. Please note this is self-reported.
- 40% of full-time employed respondents (permanent and fixed term) reported working an average of 41-50 hours per week, while 33% reported working more than 50 hours per week. Similar results were found for students 20% reported working 51-60 hours per week and 12% suggested working over 60 hours.
- Men were more likely to report working longer hours than women. This could be linked to a significantly higher proportion of women reporting to be primary carers of children under 18.
- Those working outside of the UK were more likely to report longer average working hours, in which 39% suggested working >50 hours compared to 28% of UK respondents.



MANAGEMENT AND LEADERSHIP

Only 18% of respondents reported that their supervisor had provided an example of appropriate research standards

- We wanted to explore what support employed or student respondents had received from their supervisors within the last year to provide context to research working environments.
- Respondents were most likely to report that their managers had discussed their performance within the last 12 months (55%), as well as noting their achievements (53%).
- Respondents working within industry were significantly more likely to report that supervisors had provided an example of appropriate research standards (19%) and ethical codes (17%), than those working in academia (14% and 10% respectively).
- On average, respondents were likely to select 4 examples of support from the list provided. This increased to 7 for those at the entry level career stage. Those in their late career were significantly likely to select 'none' (15%).



Only 48% of managers indicated that they had received training on managing people – nonetheless many are confident in their skills

- 62% of our sample reported they were managers with 50% (of the overall sample) managing multiple people.
- Managers were asked to indicate their level of agreement with a number of statements related to their management role. While a large majority of respondents enjoyed managing people (79%), less than half suggested they had received training – although levels of confidence suggest that not all would recognise a need for training.
- Only 44% believed good management and leadership was recognised at their workplace, suggesting there may be a lack of incentives for good management.



I have the confidence and skills to support others with their professional development I feel good management and leadership is recognised at my institution/workplace



I have the confidence and skills to

manage a diverse team





23% of junior researchers and students agreed* that they had felt pressured by their supervisor to produce a particular result

35%

23%

80%

100%

Q: To what extent do you agree or disagree with the following statements regarding: a) your institutional senior management b) the management of your work?

■ Disagree ■ Neutral ■ Agree ■ N/A



- Employed and student respondents were asked to indicate their level of agreement with statements related to their institutional senior management.
- Opinions were divided as to whether leaders communicated clear expectations regarding behaviours / culture in their working environment.
- Respondents working in academia were significantly less likely to agree with the senior management questions than those working in industry and healthcare settings.
- We also asked junior researchers and students to rate their agreement with statements related to the management of their work. 77% indicated they were given freedom to explore results.
- However, 24% indicated disagreement that their supervisor regularly reviewed their work and 13% suggested they would not feel comfortable approaching their supervisor if they could not reproduce lab results.
- Results did suggest that respondents were more likely to be positive about their manager / direct supervisor than their institutional leadership team - although this may be related to the differing samples for each question.

7-point scale. Disagree = 1-3, Neutral = 4, Agree = 5-7. *7% rated this 7 out of 7, 7% rated this 6 out of 7 and 9% rated 5 out of 7.

Respondents tended to rate their workplace team's leadership success as higher than their institution's

Q: How important do you think the following research leadership characteristics are? How successful is your workplace team and your institution / workplace as a whole in demonstrating each leadership characteristic?



- Respondents were presented with 4 leadership qualities and asked to rate their importance on a 5-point scale. A significantly large majority rated each characteristic as important, particularly setting and upholding research conduct standards (97%).
- Employed respondents and students were then asked to rate how successful they believed their workplace team, and their institution as a whole, were in demonstrating each leadership characteristic.
- While respondents were most likely to indicate their workplace team was successful in setting and upholding standards (71%), they were least likely to suggest success was demonstrated in creating development and career opportunities (50%).
- Respondents considered workplace teams far more successful in demonstrating the leadership characteristics than their workplace as a whole. This was particularly the case for those working in academia.
- Internal teams are very much on the frontline of setting the direction and upholding standards within research culture. It could be argued, given the complexities and nuances of individual research areas, that teams should have flexibility to do so.

Importance base n = 4175. Workplace team and as a whole base n = 3885.

5-point scale. Important = somewhat and extremely. Successful = somewhat and extremely.



CAREER DEVELOPMENT

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Being perceived as an expert and securing a strong record of published work were considered markers of a successful career in the research community

- To better understand career aspirations and drivers of satisfaction within the research community, we asked respondents what they considered to be markers of a successful career.
- Results found that the research community is driven by becoming an expert in the field (70%) and securing a strong record of published work (56%). This finding corroborated the qualitative research, in which many indicated their passions lay in contributing high-quality research to their discipline.
- Recognition, job security and autonomy were also considered important.
- Other traditional markers were identified as less important, such as high salary and a promotion to a leadership role.
- Markers were found to differ by job role. Respondents in more junior roles were significantly likely to be driven by job security and developing a highly refined skill set, whereas senior roles were significantly likely to consider expertise, recognition and influence as indicators of success. This suggests motivations change as early career milestones are met.



Funding and job insecurity were considered to the biggest barriers to a successful career



- We sought to understand the barriers to achieving a successful career in the research community. Over half reported lack of funding (53%) and job insecurity (51%) were preventing success.
- Lack of funding was significantly likely to be selected by those working in academia (55%) and job insecurity was a particular barrier for those in junior roles (71%).
- 38% of respondents overall suggested a lack of support from their institution/workplace was a barrier to career success. This rose to 48% when looking at results for self-identifying disabled respondents.
- A significantly higher proportion of BAME respondents based in the UK were likely to suggest a lack of opportunities was a barrier (45%) than UK White respondents (35%). 47% of UK BAME respondents also suggested inequalities / discrimination / bias was a barrier.
- Respondents working in industry were significantly likely to select 'none' of the barriers (13%), compared to 6% working in academia.

46% of respondents agreed that their workplace could do more to ensure research practices do not cut corners

Q: How far do you agree or disagree with the following statements relating to your current working environment?	Disagree	Agree
1. Rigour of results is considered an important research outcome by my institution/workplace	13%	69%
2. My working environment promotes a collaborative culture	27%	61%
3. Creativity is welcomed within my working environment in all its forms	23%	60%
4. The culture around research in my working environment supports my ability to do good quality research	25%	57%
5. My institution/workplace provides me with support to navigate the grant application process	25%	48%
6. I am confident that my institution/workplace would listen and take action if I raised a concern	37%	47%
7. My working environment promotes a good work-life balance	38%	47%
8. My institution/workplace could do more to ensure research practices do not cut corners	24%	46%
9. My institution/workplace's expectations of me to undertake a number of roles leaves me little time for research	33%	44%
10. My institution/workplace places more value on meeting metrics, than it does on research quality	33%	43%
11. Unhealthy competition is present within my working environment	37%	42%
12. My working environment hinders researchers getting on with their research	40%	39%
13. My institution/workplace values speed of results over quality	44%	32%
14. Healthy competition is encouraged within my working environment	26%	32%

- Respondents were asked to rate their level of agreement with statements relating to their working environment.
- 42% of respondents agreed that unhealthy competition is present. However, approximately two thirds suggested creativity and collaboration were present.
- Over a third (37%) disagreed that they would be confident their workplace would listen and take action if they raised a concern. Men were significantly more likely to agree with this statement than women, as were senior researchers.
- Additional questioning revealed that 48% of employed respondents and students believed their workplace/institution performs better than others in regards to encouraging good research culture, whilst 20% believed their workplace performed worse.
- Industry employees were significantly likely to believe their workplace performed better (60%), when compared to those working in academia (46%).

Attitudes towards working environment differed – particularly in relation to work sector

- Respondents who agreed with positive statements relating to rigour, collaboration and creativity within their working environment were significantly likely to be working within industry.
- Students were also likely to agree with these statements, as were respondents in their late career. Collaboration was likely to be recognised by those working in Biology and Biomedical disciplines.
- Respondents who agreed that their workplace hindered researchers getting on with their research were also likely to indicate that their workplace's expectations of their role were overwhelming (statement 9 on previous page) and that more value was placed on metrics than research quality.
- These respondents were significantly likely to be working within academia and unlikely to be working within industry. These respondents were significantly likely to be humanities specialists when compared to other disciplines – though it should be noted that 89% of humanities respondents were working within a university setting.

Q: How far do you agree or disagree with the following statements relating to your current working environment? (Agreement % for respondents working in academia and industry)

My institution/workplace could do more to ensure research practices do not cut corners My institution/workplace places more value on meeting metrics, than it does on research quality My working environment hinders researchers getting on with their research Unhealthy competition is present within my working environment My working environment promotes a good worklife balance Creativity is welcomed within my working environment in all its forms My working environment promotes a collaborative culture Rigour of results is considered an important research outcome by my institution/workplace



□ Industry □ Academia / university

35% of respondents suggested they would not feel comfortable reporting compromised research without fear of repercussions – and 40% did not know how to report such instances

Q: How far do you agree or disagree with the following statements relating to your career over the last 1-5 years?*

Base n = 4065.

The work I do is fairly and adequately recognised

I feel pressured to meet Key Performance Indicators / metrics, e.g. REF, grant funding

I would feel comfortable reporting instances of compromised research standards and misconduct**

I know how to report instances of research misconduct

I have a clear understanding of what my workplace considers compromised research to be

I am able to effectively balance the competing roles required as part of my employment

I have experienced issues with others taking credit for my work



0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% ■ Disagree ■ Neutral ■ Agree □ N/A

- We asked respondents to indicate their level of agreement with a number of statements relating to their career over the last 1-5 years.
- Perhaps unsurprisingly, junior researchers were less likely to agree that they would feel comfortable reporting instances of compromised research (44%) than those in senior roles (54%).
- Only 46% of respondents indicated that they have a clear understanding of what their workplace sees as compromised research.
- Over half felt pressured to meet KPIs and metrics this increased to 63% when looking at results from those working in academia.
- Additional questioning found that 62% of respondents agreed they were satisfied with their career experiences in the research community thus far, whereas 27% disagreed.
- Respondents working in academia were significantly less likely to be satisfied than those working in other settings.

* 7-point scale. Disagree = 1-3, Neutral = 4, Agree = 5-7. Satisfaction base n = 3971. **...without fear of personal consequences.

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84% suggested they were proud to work within the research community – but only 29% felt secure in pursuing a research career

Q: How far do you agree or disagree with the following statements relating to your career?	Disagree	Agree
1. I am proud to work within the research community	7%	84%
2. I am aware of alternative career options outside of research that could utilise my skills	24%	65%
3. I would recommend my lab/department to other researchers	23%	62%
4. I am aware of a range of different career options within research	32%	53%
5. I would recommend a research career in my sector	31%	50%
6. I have flexible career options available to me	38%	40%
7. I am satisfied with my career prospects within research	45%	38%
8. I believe there is longevity in a career in research	45%	38%
9. I am considering moving to another part of the research sector within the next 3 years (e.g. leaving academia for industry)	42%	37%
10. I am considering leaving the research community within the next 3 years to start a non- research role	43%	36%
11. I feel secure pursuing a research career	58%	29%

Respondents were asked to state their agreement with a number of career-related statements.

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- While a large majority suggested they were proud to work within the research community, a significantly lower proportion indicated they would recommend their lab/department to others (62%), and even fewer would recommend their sector (50%).
- Only 47% of respondents working in academia agreed that they would recommend their sector, compared to 59% of those working in government.
- Job security appeared to be an issue for respondents, with only 38% agreeing there is longevity in a career in research and 29% feeling secure in pursuing a research career.
- Over a third of respondents (36%) suggested they were considering leaving to start a nonresearch role in the next 3 years. These respondents' attitudes indicated dissatisfaction with prospects and security – suggesting this may be a driver for their reported likely departure.

Attitudes towards career prospects differed depending on career stage

- Perhaps unsurprisingly, perceptions of career prospects differed by career stage. Respondents in their early to mid career stage were significantly likely to indicate a lack of security compared to those in senior roles.
- Entry-level respondents were also likely to suggest positivity in regards to their perceptions of their prospects. This group was made up of those who were 1-2 years into their career, including current PhD students. A lack of experience could be driving the differing attitudes to early and mid career researchers.
- Respondents were less likely to agree that they were aware of alternative careers within research, than outside of the research sector. Respondents working in academia were significantly less likely to suggest awareness of alternative options within research, compared to those working in industry.
- This finding may suggest that the sector is at risk of losing valuable talent if researchers are unaware of alternative opportunities.
- Respondents working within computer science, biomedicine and medicine had above average awareness of alternative career options both within and outside of research.

Q: How far do you agree or disagree with the following statements relating to your career? (Agreement % for respondents at each career stage)



Entry base n = 167. Early base n = 1185. Mid base n = 1577. Late base n = 281. % Agreement.



PERCEPTIONS OF RESEARCH CULTURE

The majority of words used to describe experiences of research culture were negative

Q: What 3 words would you use to describe the current research culture, based on your experiences within your organisation / institution as a whole? (Open question)



- We wanted to gauge an unprompted understanding of respondents' perceptions of research culture – in relation to their experiences within their organisation.
- The words most commonly cited were competitive (26%), collaborative (16%) and pressured (12%).
- To avoid misinterpreting the sentiment of words provided, respondents were then asked to specify whether this perception was positive, neutral or negative.
- Over half of the words provided were specified as negative, whilst a third were considered positive.
- The most common negative words included stressed, insecure, metrics, challenging and individualistic.
- The most common positive words included supportive, exciting, innovative, excellence, ambitious and rewarding.
- Respondents working in biology were significantly likely to cite 'collaboration'.

40% believed current research culture was having a negative impact on individuals, but it was thought to benefit society



When asked to provide 3 words that describe an ideal research culture, respondents most commonly cited supportive (20%), collaborative (17%) and creative (6%). In comparison, 9% of respondents described the current culture as supportive, 16% described it as collaborative and 5% described it as creative or innovative (based on their experiences – previous slide).

Respondents were asked to rate the impact of current research culture in regards to quality of research, individuals and society. While research culture was more likely to be considered to have a positive impact on the quality of research and society, a higher proportion thought it was having a negative impact on individuals.

Q: How would you rate current research culture in terms of its impact on..?



78% agreed that high levels of competition had created unkind and aggressive conditions and only 18% thought current culture was healthy

Q: How far do you agree or disagree with the following statements relating to research culture?	Disagree	Agree
1. High levels of competition have created unkind and aggressive research conditions	11%	78%
2. Creativity is stifled due to research being driven by an impact agenda / emphasis on impact	12%	75%
3. Research culture promotes quantity over quality	14%	71%
4. Current research culture is unsustainable long-term	18%	65%
5. High standards and integrity are valued within the research community	21%	65%
6. Current research culture promotes high-quality research	37%	47%
7. The current culture supports research productivity	29%	47%
8. Current research culture is healthy	66%	18%
9. I think current metrics have had a positive impact on research culture	58%	14%
10. Grant funding is sufficiently flexible to support career breaks, or health and disability related leave	63%	13%
11. Initiatives to increase diversity and inclusion in research have gone far enough	69%	12%

- Respondents were asked to state their level of agreement with a number of statements relating to research culture.
- Three quarters of respondents indicated agreement that creativity was stifled due to research being driven by an impact agenda.
- 71% suggested agreement that research culture promotes quantity over quality, with only 47% agreeing that the current culture promoted high-quality research.
- Respondents working in academia were significantly less likely to agree that current research was healthy, compared to those working in other settings.
- Respondents who self-identified as having a disability were significantly less likely to agree that grant funding is sufficiently flexible to support leave when compared to non-disabled respondents.
- Few differences in attitudes were identified in relation to discipline.



EXPERIENCES

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61% had witnessed bullying or harassment during their research career – whilst 43% had experienced it

Q: During your research career have you ever...?



Q: If you have experienced or witnessed bullying or harassment, who was the perpetrator(s)? (*Multiple choice*)



- Qualitative findings suggested bullying and harassment was present within research culture.
- Survey findings indicated that 43% had experienced bullying or harassment, whilst 61% had witnessed it. It is worth noting that a definition for bullying or harassment was not provided, and qualitative findings identified that what constituted these terms was highly subjective.
- These figures rose when looking at results for those who selfidentified as disabled: 62% of disabled respondents reported experiencing bullying or harassment, whereas 73% had witnessed it.
- Women were also more likely to have experienced bullying or harassment (49%) than men (34%). There were no significant differences between UK-based BAME and White respondents.
- Respondents working in a healthcare setting were significantly less likely to have witnessed or experienced bullying or harassment, compared to those working in other settings.
- When asked who the perpetrator(s) of the bullying or harassment were, the majority of respondents reported a supervisor or manager.



- Over a third of respondents reported experiencing discrimination during their research career, whereas 46% had witnessed it.
- These results were particularly pertinent for women with 44% having experienced discrimination and 51% witnessing it. These high figures are reflected in later results, wherein gender was the most common reason cited for bullying, harassment or discrimination.
- Those working in academia were significantly likely to report experiences with gender discrimination or harassment.
- 28% of those who had witnessed discriminatory or harassing behavior suggested this was related to race. 29% of all UK-based BAME respondents reported experiencing race or ethnicity related discrimination or harassment.
- Other types of discrimination or harassment that respondents reported experiencing in open comments included sexual, hierarchal, discipline-related, role-related and in relation to caring responsibilities.

Q: In cases where you have witnessed or experienced bullying and harassment or discrimination, was this behaviour related to...



Only 37% of respondents reported they would feel comfortable speaking out about bullying or harassment – and only a quarter thought it would be acted on appropriately

- 28% of respondents reported they would not feel comfortable speaking out about instances of bullying and/or discrimination without negative personal consequences, whilst 34% were unsure.
- Respondents in junior roles were significantly likely to be unsure of their stance (in relation to speaking out about instances of bullying and/or discrimination). 38% of disabled respondents reported they would not feel comfortable speaking out.
- While the majority of respondents indicated that they felt their concerns relating to experiences of bullying and/or discrimination would be listened to (64%), only a quarter believed they would be acted upon appropriately.
- This supported the qualitative findings, in which a perception of tokenistic institutional initiatives was identified.
- Significantly fewer respondents working in academia believed their concerns would be appropriately acted on (24%) compared to industry respondents (32%).

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• Women (22%) were also less likely than men (30%) to believe their concerns would be acted upon appropriately.

O: Would you feel comfortable speaking out about instances of bullying and/or discrimination without negative personal consequences from within your workplace? 37% 28% 34% 34% Yes No Unsure

Q: Within your workplace, do you feel your concerns relating to experiences of bullying and/or discrimination would be...?



■Yes ■No ■Unsure

Respondents suggested they were most likely to seek support or advice on addressing bullying and harassment from peers or colleagues

- Qualitative findings suggested employees generally had low awareness of policies relating to discrimination and/or harassment, as well as support available.
- We therefore wanted to find out where respondents would seek support for such issues.
- Respondents were most likely to suggest they would seek emotional support from friends (70%) and family (68%).
 53% reported they would use peers and colleagues for support – although they were significantly less likely to select their workplace (9%).
- Respondents also indicated they would be more likely to seek support or advice on addressing the issues from friends (41%) and family (38%), compared to their workplace (30%).

Q: Where would you / have you sought the following types of support for bullying or harassment issues? *(Multiple choice)*



Minority groups were likely to disagree that they would feel comfortable openly discussing discrimination related to their identity

Q: How far do you agree or disagree with the following statements relating to your working environment? "I would feel comfortable openly discussing biases and discrimination in my work environment related to..."



- We wanted to identify how comfortable key groups were with openly discussing biases and discrimination in their working environment. Results in the chart outline findings for the full sample, while relevant group results are outlined below.
- Results found that LGBTQ+ respondents were significantly likely to disagree they would feel comfortable discussing identity discrimination (24%), compared to heterosexual respondents (16%).
- Almost a third (29%) of self-identifying disabled respondents disagreed that they would feel comfortable openly discussing disability discrimination.
- 28% of UK-based BAME respondents disagreed that they would be comfortable discussing race issues.
- A significantly higher proportion of women disagreed that they would feel comfortable openly discussing gender biases (18%) than men (16%). Unfortunately, the non-binary sample size was too small to provide a statistically significant comparison.

33% thought that leaders in their workplace turned a blind eye to bullying and harassment – whilst 59% who had experienced this behaviour agreed with this statement

Q: How far do you agree or disagree with the following statements relating to your working environment?	Disagree	Agree
1. I feel safe within my working environment	10%	81%
2. My institution/workplace is committed to promoting diversity and equality	15%	66%
3. I think that my working environment is biased in favour of certain groups of people	20%	60%
4. My institution/workplace enacts a zero-tolerance policy against discrimination	24%	42%
5. I have witnessed diversity and inclusion initiatives successfully in action within my working environment	25%	41%
6. I think my institution/workplace's diversity and inclusion initiatives are tokenistic	30%	41%
7. Raising concerns about discrimination or harassment would be damaging for my career	37%	40%
8. Action is taken in my workplace to remove barriers and provide support for underrepresented groups	29%	40%
9. My working environment reflects the diversity within society	51%	37%
10. The leaders in my workplace turn a blind eye to bullying and harassment	47%	33%
11. The leaders in my workplace turn a blind eye to discrimination	51%	26%

- We asked respondents to indicate their level of agreement with a number of statements related to the policy and support within their working environment.
- While 81% overall suggested they felt safe within their working environment, protected groups such as disabled, LGBTQ+ and UKbased BAME respondents were significantly less likely to agree than their counterparts.
- 68% of respondents who had experienced bullying or harassment reported feeling safe within their working environment, compared to 92% who had not experienced these issues.
- Echoing earlier findings, 40% agreed that raising concerns about discrimination or harassment would be damaging for their career. Junior researchers were significantly likely to agree with this statement.
- 41% of respondents suggested their workplace's diversity and inclusion initiatives were tokenistic, whilst only 37% agreed their working environment reflected the diversity within society.

34% of respondents had sought professional help for depression or anxiety during their research career – while 19% wanted to but had not yet done so

- Qualitative findings identified that research culture had a potential negative impact on researchers' mental health and wellbeing. The survey sought to explore these issues, as well as the community's sense of resilience.
- 70% of employed respondents and students indicated they felt stressed on an average working day, with an average rating of 4.9 out of 7.
- A positive correlation with working hours and stress was identified, in which those who reported working more hours per week had higher stress ratings (e.g. >50 hours = average 5.2; <50 hours = average 4.7).
- 34% of respondents reported that they had sought professional help for depression or anxiety during their research career. A further 19% wanted to seek help. Women were significantly more likely to have sought help (38%) than men (25%).
- While 82% of respondents considered themselves resilient, only 41% agreed they could separate work-related setbacks from their personal sense of self. This supported qualitative findings, in which respondents indicated that their careers were very much part of their identity.
- 49% agreed they had difficulty dealing with work-related stresses. Respondents who had either sought help for depression or anxiety, or who wanted to, were significantly likely to agree with this statement.

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Q: To what extent do you agree or disagree with the following statements? I consider myself to be a resilient 82% 9% person I tend to bounce back quickly after 20% 65% hard times I find it difficult managing my workload 25% 59% when I'm experiencing personal issues I have a difficult time dealing with 35% 49% work-related stresses I am able to separate work-related 41% setbacks from my personal sense of 47% self 0% 20% 40% 60% 80% 100% ■ Disagree ■ Neutral ■ Agree ■ N/A Base n = 4175.

Stressed base n = 3885. 7-point scale. Disagree = 1-3, Neutral = 4, Agree = 5-7.

57% agreed there was a long-hours culture at their workplace and 48% felt pressured to work long hours

Q: To what extent do you agree or disagree with the following statements relating to your institution/workplace?	Disagree	Agree
1. I believe wellbeing is fundamental to an effective working environment	1%	96%
2. A career in research can be isolating and lonely	17%	69%
I have felt supported by peers/colleagues when I've encountered personal problems	13%	65%
4. The system exploits my interest in the work I do leading to a heavy workload	21%	62%
5. There is a long-hours culture at my institution/workplace	26%	57%
6. Wellbeing support is well-promoted at my institution/workplace	30%	49%
7. I feel pressured to work long hours	36%	48%
8. My institution/workplace offers adequate wellbeing support	34%	44%
9. Genuine and effective steps are taken to support my personal wellbeing	36%	31%
10. My institution/workplace wellbeing initiatives are appropriate for my needs	37%	28%

- We asked respondents to indicate their level of agreement with a number of statements related to wellbeing.
- Nearly half of respondents reported feeling pressured to work long hours. Earlier survey results found that lack of work-life balance was a key driver to leaving the research community. Long working hours were also linked to high levels of stress amongst respondents.
- Nearly all respondents agreed wellbeing is fundamental to an effective working environment. However, only 28% agreed that their workplace wellbeing initiatives were appropriate for their needs. This finding raises concerns in light of the high proportion of respondents who reported seeking support for depression and/or anxiety, as well as those who haven't but would like to (page 40).
- 69% suggested a career in research could be isolating and lonely. Respondents working in academia were significantly likely to agree with this statement, compared to those in industry.
- Respondents working in industry were more likely to agree that their workplace offered adequate wellbeing support (59%), than those in academia (42%).



VISIONS

Respondents wanted changes to the allocation, application, and criteria of research funding, as well as changes to job security and metric measurements

- In an open question, all respondents were asked what is needed to positively change research culture. A code frame was made to categorise their answers.
- Respondents were most likely to identify 'funding' as an element of research culture that required change.
- This incorporated a wide range of changes and included requests for increased funding opportunities for a more diverse range of projects, a less laborious funding application process, a reduced emphasis on 'high impact' journals as a criteria for funding, and a funding model that encouraged collaboration rather than competition.
- Following this, internal institutional changes to short-term and insecure contracts, as well as the removal or change of metric-based criteria for promotion or funding allocation, were frequently mentioned.

Q: What do you think is needed to create significant positive change to research culture?



"More secure employment, fewer performance metrics, better team science, end of publish or perish, quality over quantity, greater emphasis on the quality of scientific process rather than end 'product', significant reduction in burden for funding applications."

17%

12%

11%

10%

10%

10%

8%

7%

25%

Responsibility for driving change in research culture was thought to lie with research institutions, funding bodies and senior researchers

- Respondents were asked to rate the level of responsibility they believed particular groups should hold in driving positive change in research culture.
- 91% of respondents suggested research institutions should be highly responsible for driving change in research culture and 72% believed funding bodies should.
- Senior researchers were also likely to be considered accountable, while junior researchers were most likely to be considered to have low responsibility.
- Survey results suggested a higher level of dissatisfaction with research culture at the institutional or wider level, than with the culture within teams or at the individual level. These results suggest that respondents see research culture as a wide-scale problem, which needs to be dealt with from the top down.



Respondents thought recognition of culture contributions in funding criteria would be impactful in promoting and facilitating 'good' research culture

Respondents were asked to rank initiatives to improve research culture that Wellcome were in the early stages of developing. Nearly half of respondents (45%) thought Wellcome's first priority should be recognising and rewarding good practices and behaviours that improve research culture. There were no significant differences by key groups – suggesting priorities were largely consistent.

Q: Wellcome is at the early stages of developing initiatives to improve research culture. Where do you think Wellcome should focus first?



- Co-creation workshops conducted during the qualitative phase of research helped to identify a number of solutions for an improved research culture. We sought to further test these in the survey.
- Respondents suggested that recognition of culture contributions in funding, pay and/or promotion criteria would be most impactful in promoting and facilitating 'good' research culture. This was closely followed by training in key skills and an actionable space to raise concerns.

Average out of 7	D: How impactful do you think the following initiatives could be in promoting and facilitating a 'good' research culture?
5.9	Recognition of culture contributions in funding/pay/promotion criteria
5.8	Training in the skills needed to promote good culture (e.g. leadership)
5.6	A space to raise concerns, with appropriate actions then taken
5.3	New awards and recognition opportunities
4.9	Published satisfaction surveys and measures
4.7	Good-practice guidance

. .

71% of respondents thought that individuals can drive positive change in research culture – despite only 29% believing individuals had high responsibility to do so

- Respondents were asked if individuals can make a positive change in research culture. Respondents at late career stages were significantly more likely (81%) than those at entry level (64%) to answer "Yes". On top of this, respondents who were based in academic institutions were significantly more likely to answer "No" (11%) than those in industry and healthcare (6%).
- Those who answered "Yes" were asked what they thought individuals can do to drive positive change in research culture. Their responses were coded into categories (see right).
- 'Setting an example' was the most commonly expressed sentiment by respondents. By this, respondents meant living the values of research integrity which would then encourage other researchers to do the same.
- This sentiment was closely related to encouraging change on a small scale within teams, as well as speaking up about wrongdoing. On both counts, it was often thought that senior researchers were more able to do this than junior researchers.





CONCLUSION

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Conclusion

- Researchers are generally proud to work within the community, and it is clear that most respondents believe high-quality outputs are still being developed. Positive perceptions of culture are present, particularly in relation to valued characteristics such as support, collaboration and creativity. It is important these sentiments are preserved and increased where possible.
- While current research culture is thought to benefit society, the impact on individuals is considered largely detrimental. Issues relating to wellbeing and mental health identified within this report raise concerns not only for individual researchers, but for their potential to sustain standards of quality, as well as the risks of losing valuable research talent.
- Results identified a number of groups who appear worse off within current culture. This includes those working in academia, women, junior researchers, disabled researchers, BAME researchers and LGBTQ+ researchers. Considering most of these groups are underrepresented in the sector, it is important more is done to support and protect them.
- Job security appeared to be a key area of importance for respondents in the quantitative phase, with sense of security holding a strong
 influence on perceptions of the health of research culture. Lack of security is not only the core driver for those who have left the
 research community, but also considered one of the barriers to achieving a successful career. Increased awareness of alternative career
 paths within the sector may improve perceptions of security.
- While it is difficult to gauge how results outlined in this report compare to other sectors, this piece of research could be a useful benchmark for future research, as well as to explore the impact of interventions.
- It appears there are actions which could be taken to improve research culture, with respondents identifying a clear prioritisation of initiatives. It is worth bearing in mind that actions taken by institutions in this area are dismissed by some researchers as 'tokenistic' and care needs to be taken that other organisations do not fall into this trap. There is also a need to ensure actions are not seen to increase what many researchers consider to be an already overwhelming workload.







APPENDICES

Profile of respondents: qualifications

Q: Which of the following degrees are you currently working towards? (Asked to students)

2%

2%

Dual doctoral degree (MD-PhD, PhD-PhD or other combination)

Doctoral degree (PhD/DPhil/MD)

Master's degree (MA/MS/MSc/PSM or other master's)

Q: Which qualification(s) do you hold? (Asked to non-students only)



Q64: Base n = 3401. Asked to all.

Profile of respondents: position and research space



Profile of respondents: job role

Q: Which of the following best describes your current role?						
Independent Fellow	3%	Lecturer / Assistant Professor	9%			
Research Support Staff	6%	Senior Lecturer / Associate Professor	10%			
Postdoc / Research Associate	28%	Research Assistant	4%			
Research Technician / Officer	2%	Reader	3%			
Other - PhD student	1%	Professor	14%			
Other - Research Fellow	1%	Director	3%			
Other - Researcher	1%	Head of Department	2%			
Research / Technical Specialist	2%	Dean	1%			
Laboratory / Facility Manager	2%	Other - Manager	1%			
Group Leader	5%	Other	2%			

Q6: Base n = 3149. Asked to those employed and on a career break. Options not shown had less than 0.5%.

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Profile of respondents: age and career stage



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Q20: Base n = 3216. Asked to those employed, unemployed and on leave. Options not shown had less than 0.5%.

Profile of respondents: location of respondents

Country	(n) of respondents	Country	(n) of respondents	Country	(n) of	Country	(n) of respondents
United Kinadom	3224	Singapore	10	Colombia	3	American Samoa	1
United States	188	Mexico	10	Nepal	3	Cape Verde	1
Germany	76	Pakistan	9	Albania	2	Christmas Island	1
, Spain	53	Malawi	8	Qatar	2	Croatia	1
Australia	53	Poland	8	Chile	2	Iran	1
South Africa	52	Israel	7	Cote d'Ivoire	2	Mali	1
India	47	Thailand	7	Malaysia	2	Malta	1
Ireland	39	Turkey	7	Myanmar	2	Nicaragua	1
Canada	34	Taiwan	6	Philippines	2	Senegal	1
France	30	Finland	6	Uruguay	2	Slovakia	1
Italy	29	Serbia	6	Zimbabwe	2	Swaziland	1
Netherlands	28	Czech Republic	5	Ghana	2	Tunisia	1
Sweden	28	New Zealand	5	Hungary	2	Ukraine	1
Switzerland	25	Other	5	Russia	2	United Arab Emirates	1
China, Republic of	24	Cameroon	5	Aaland Islands	1		
Brazil	19	Greece	5	Barbados	1		
Kenya	15	Slovenia	4	Belarus	1		
Portugal	15	Tanzania	4	Botswana	1		
Japan	14	Egypt	4	Curacao	1		
Belgium	14	Romania	4	Kuwait	1		
Vietnam	11	Korea, South	3	Laos	1		
Austria	11	Uganda	3	Saudi Arabia	1		
Nigeria	11	Bangladesh	3	Virgin Islands (US)	1		
Norway	10	Ethiopia	3	Zambia	1		
Denmark	10	Hong Kong	3	Algeria	1		

Profile of respondents: country destinations



Profile of respondents: discipline and workplace

Q: Which of the following b	oest descr	ibes your research discipline or s	Q: Which best describes your current workplace?		
Agriculture and food	2%	Humanities	10%	Academia / university 82	4%
Astronomy / Astrophysics / Cosmology / Planetary science	1%	Materials science	1%	Not-for-profit research institute (including charity funded, research council funded etc.)	3%
Biology	26%	Mathematics	2%	Government laboratory 1	%۵
Biomedical	30%	Medicine	18%	Healthcare setting (hospital, community-based etc.) 2	₂%
Chemistry	4%	Physics	3%	SME / start-up company	L%
Computer science	3%	Social Science / Psychology	18%	Life sciences industry (pharmaceuticals, biotechnology,	
Earth and environmental science	2%	Other	3%	medical technology and consumer healthcare)	2%
Engineering / Technology	4%	Other - Health & social care	2%	Other 1	L%

©SHIFT LEARNING 2019 O4: Base n = 4186. Asked to all. Options not shown had less than 0.5%.

Q5: Base n = 3149. Asked to those employed and on a career break. Options not shown had less than 0.5%.

Profile of respondents: ethnicity and caring responsibilities

Q: Which of the following best describes you? (UK b	based)
White: English / Welsh / Scottish / Northern Irish / British	56%
Any other White background	25%
I'd prefer not to say	5%
White: Irish	3%
Asian / Asian British: Indian	3%
Any other mixed / multiple ethnicity background	1%
Asian / Asian British: Chinese	1%
Any other ethnic background	1%
Any other Asian background	1%
Mixed / multiple ethnic groups: Asian and White	1%
Asian / Asian British: Pakistani	1%

Q: Which of the following best describes you? (UK based)

None	56%
Primary carer of a child/children (under 18)	29%
Primary carer of a disabled child/children	1%
Primary carer or assistant for a disabled adult (18 years or over)	1%
Primary carer or assistant for an older person/people (65 and over)	4%
Secondary carer (another person carries out the main caring role)	8%
Prefer not to say	3%
Other - co-parent / co-carer	1%
Other - carer for adult(s) / older children	1%

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Q63: Base n = 4255. Asked to all. Options not shown had less than 0.5%.

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