Bringing Research Careers into Focus:
An MRC Review of Next Destinations

Contents

1   Executive Summary

1.1   The MRC is about the people we nurture and support to become tomorrow's leaders in discovery science. We prioritise investment in skills to develop and foster innovative and creative researchers. We have a responsibility to meet national strategic skills needs, and ensure an internationally competitive research base for the UK which can respond to future challenges in human health and ensure that the UK is the location of choice for investment and growth.

- We play a key role in ensuring a highly skilled workforce for UK medical research by supporting more than 5,700 research staff, 200 post-doctoral training fellows and 1,900 PhD students across the full spectrum of health disciplines, many working with industry. MRC Units, Centres and Institutes make significant contributions to training and the development of future research leaders.
- The MRC engages with partners such as NIHR, charities and industry to understand needs for skills at a national level and meet these by supporting, for example, skills development fellowships which aim to build quantitative and qualitative research capability at early post-doctoral level.
- We fund innovative approaches to training. For example, the MRC and Asthma UK Centre in Allergic Mechanisms of Asthma is a unique environment in which to train fundamental and clinical researchers, involving two universities and charity and industry partners.
- The MRC stimulates research across academia and industry through a range of schemes including Industrial CASE studentships and collaborative awards for research fellows.

1.2   This research was undertaken to explore the career choices of non-clinical medical researchers in the first 10 to 20 years following their MRC funded award. A key aim was to better understand the impact of MRC awards and the nature of any blockers/hurdles to pursuing a career in medical research. Key findings of this review were:

- **MRC funding has a positive impact on a research career:** The majority of respondents felt satisfied with their career and 87% were still working within research (Figure 3.1, page 6). Commonly held roles were Principal Investigator or a teaching/lectureship post (Figure 2.1, page 5). Respondents reported that MRC funding had clear and positive impacts upon their career; the funding acted as a springboard enabling them to pursue research, set up independently and secure jobs/promotions (Chapter 4, 4.6).
- **Main blockers and enablers to pursuing a research career:** Respondents were divided broadly evenly into those that found it easy to pursue a career in research and those who found it difficult (47% vs. 52%). The main blockers and enablers to pursuing a successful research career were identified as[1]:

Figure 1.1: Blockers and enablers

Blockers

- Difficulties securing funding
- A lack of careers advice, support and guidance and difficulties accessing what was available
- Lack of job security and availability
- Difficulties balancing work and family life
- Lack of proactivity

Enablers

- Funding as a platform for pursuing own interests and a springboard for a career
- Access to careers advice, support and guidance
- Gaining skills and experience through training and research
- Experience outside academia
- Opportunity to publish work
- Mobility

---

[1]   The summary of these enablers/blockers was drawn from a combination of the quantitative and qualitative evidence

- **More flexible funding opportunities are needed**: Lack of funding was the most commonly cited reason for finding pursuing a research career difficult. Respondents stated more frequent funding opportunities and providing a greater amount of funding would make pursuing a research career easier (Chapter 4, 4.4). Furthermore, additional funding for early career researchers was highlighted as important during the qualitative interviews.
- **Supporting transitions is important**: Blockers were experienced across careers, and not associated with any one particular transition. Respondents reported the most difficult transitions were from PhD to post-doc and from post-doc to research independence/Principal Investigator (Chapter 4, 4.2). These transitions were most frequently cited as career points which could benefit from further career support.
- **Clearer signposting of career options is needed**: A significant proportion of respondents said clearer research paths and receiving careers advice/guidance in making career choices would have made pursuing a research career easier (Chapter 4, 4.16).
- There was a positive response to the proposal that MRC should map research career options (Chapter 5, 5.2); it will provide a better understanding of the options available and should promote recognition for alternative/non-traditional career choices.
- **Active career management is important**: Respondents who rated themselves as proactive in managing their career had more success in securing funding and found accessing careers advice easier (Chapter 4, 4.50).
- **Mentoring and access to careers advice is important**: There is a need for accessible and clear careers advice and guidance (Chapter 4, 4.24). Two-thirds of respondents said that they did not receive enough careers advice throughout their research career (Chapter 4, 4.25) and just over a third reported finding it difficult to access careers advice (Chapter 4, 4.26).

2 Introduction

2.1   This document reports the findings from research undertaken to explore the career choices of non-clinical medical researchers who applied for or were awarded Medical Research Council (MRC) funded post-graduate degrees, fellowships, grants or programme leader track positions at MRC Units and Institutes, currently in the first 10 – 20 years following receipt of their MRC funded award.

Background

2.2   The MRC is a publicly-funded organisation which supports research across the spectrum of medical sciences in universities and hospitals and through its own units, centres and institutes. The MRC's mission is to improve human health through world class medical research. It works to achieve this through training and developing the next generation of biomedical research leaders by supporting outstanding individuals at crucial points in their research careers, aligned to national strategic skills objectives.

2.3   There have been a number of reviews over the years which have considered various aspects of career support for biomedical and discovery science[2]. MRC has also from time to time reviewed support and impacts of support for careers including in 2012 a retrospective review of clinical training[3].

2.4   While no guaranteed career path exists within a medical research career, an increasing number of career options exist for biomedical researchers, and a number of factors may make a career in medical research difficult to pursue. It was within this context that MRC decided to conduct this review.

Research objectives

2.5   The research aimed to understand:
- The initial destinations, subsequent career choices, and the routes in and out of these options that researchers take (which will be defined here as the first 10 to 20 years) subsequent to securing an MRC funded award;
- The nature of any blockers or hurdles to pursuing a medical research career, and how researchers can be appropriately supported at these critical stages/through the most difficult transitions.

2.6   Details on the research approach can be found in Appendix 1.

A note on this report

2.7   The majority of the findings detailed in this report derive from quantitative online survey unless otherwise stated. Some of the findings are from more qualitative in-depth telephone interviews: the source of these findings are clearly identified when used.

2.8   Unless stated otherwise, quoted differences between types of participant in the quantitative online survey findings are statistically significant at the conventional 5% level; this means that if the true difference is zero, the chance of an observed difference of the size shown is at most 5%.

2.9   Percentages reported throughout have been rounded to the nearest whole percentage.

---

[2]   Reaping the Rewards of Biomedical Science (Academy of Medical Sciences 2010 (http://www.acmedsci.ac.uk/viewFile/51b9ca237ecdf.pdf)
      The Freedom to succeed (Academy of Medical Sciences 2005 http://www.acmedsci.ac.uk/policy/policy/the-freedom-to-succeed/)
      Non-Clinical scientists on short term contracts (Academy of Medical Sciences 2002 https://www.acmedsci.ac.uk/viewFile/51d197fdae0c7.pdf)
[3]   http://bmjopen.bmj.com/content/2/4/e001792.full)

2.10   The four cohorts interviewed as part of the quantitative online survey are those who:
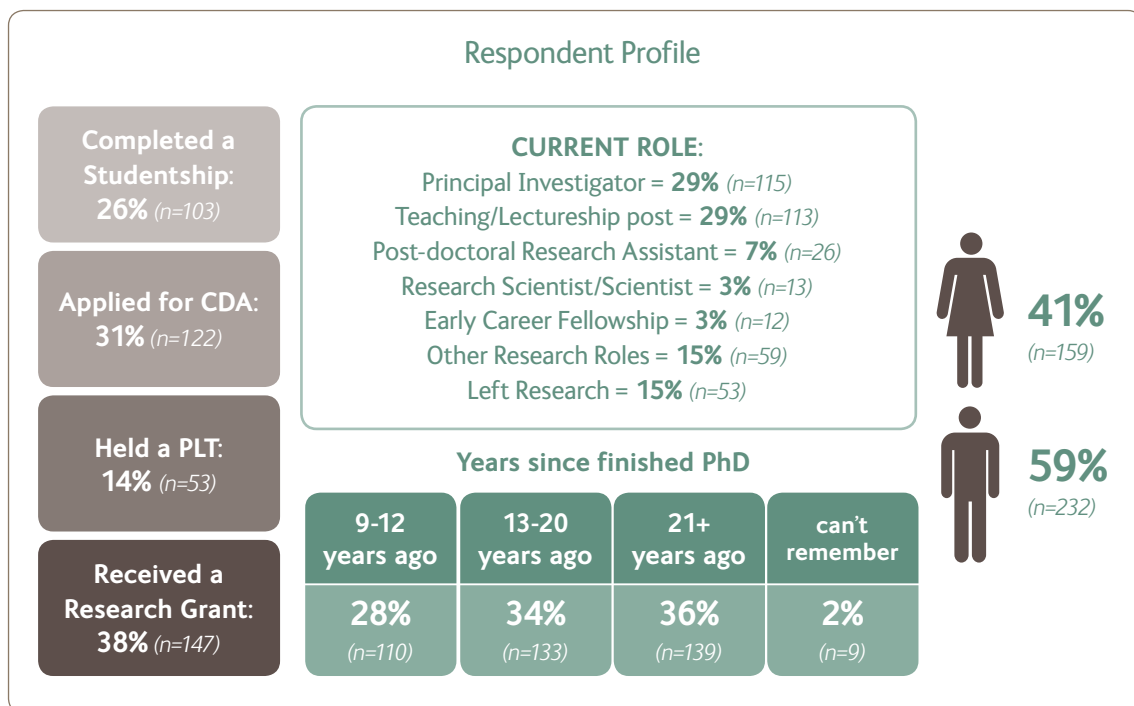- Completed a studentship (PhD student who completed MRC sponsored post-graduate research degrees in the 2003-04 or 2004-05 academic years);
- Applied for a CDA[4] (Researcher who applied for MRC Career Development Award (CDA) between 1995 and 2004);
- Held a PLT (Researcher who held a MRC unit/institute Programme Leader Track-position (PLT) between 1995 and 2004); and,
- Received a research grant (Researcher who received a MRC research grant or New Investigator Research grant between 2003 and 2006)

2.11   A total of 1127 email invitations to the online survey were successfully delivered and 391 individuals went on to complete the questionnaire representing a response rate 35%[5]. The online survey questionnaire (Appendix 2) and the topic guide used for the qualitative interviews (Appendix 3) are included in an appendix to this report.

Profile of respondents

2.12   The profile of researchers who took part in the online survey is summarised in Figure 2.1. It should be noted that the sampling approach[6] may have resulted in a bias of the survey respondents towards those who secured their own funding and/or who stayed in research. This may account for the low percentage of respondents who have left research.

Figure 2.1: The profile of respondents who took part in the online survey[7]

Respondent Profile

Completed a Studentship: **26%** *(n=103)*

Applied for CDA: **31%** *(n=122)*

Held a PLT: **14%** *(n=53)*

Received a Research Grant: **38%** *(n=147)*

CURRENT ROLE:
Principal Investigator = **29%** *(n=115)*
Teaching/Lectureship post = **29%** *(n=113)*
Post-doctoral Research Assistant = **7%** *(n=26)*
Research Scientist/Scientist = **3%** *(n=13)*
Early Career Fellowship = **3%** *(n=12)*
Other Research Roles = **15%** *(n=59)*
Left Research = **15%** *(n=53)*

41% *(n=159)*

59% *(n=232)*

Years since finished PhD

9-12 years ago	13-20 years ago	21+ years ago	can't remember
28% *(n=110)*	**34%** *(n=133)*	**36%** *(n=139)*	**2%** *(n=9)*

4.   The 'applied for CDA' cohort included those who were successful and accepted the award, successful but declined the award, shortlisted but unsuccessful, withdrawn or rejected. Throughout the report responses for this cohort tend to be reported at an overall level of those who 'applied for CDA'. Should a significant difference exist between those who were successful (accepted or declined the award) and those who were unsuccessful, withdrawn or rejected this will be reported. A potential reason for this lack of differentiation between the responses given by those who were successful and those who were not is due to the high proportions in both groups who received other funding outside of the CDA application.

5.   Calculated as completed interviews as a proportion of all invite emails successfully delivered. That said there were very few bounce backs and so response rate as a proportion of all invite emails mailed out was 34%.

6.   The sampling frame was designed to include CDA, PLT and research grant holders which may have resulted in a response bias of participants who were more likely to have remained within research. Those remaining in research may also have been more likely to respond to the survey than those who were not and this could affect the results. Also, contact details for PhD students were collected via alumni offices and supervisors which may mean that those who had stayed in touch, possibly because they were pursuing a research career, were more likely to have been included within the final sample.

7.   The 'other research roles' included within 'Current Role' was made up of roles/positions given by 2% or less of the sample. These included intermediate career fellowship, research project lead, senior career fellowship, short term post-doctoral appointment, health care/medical staff, research la /facility manager and statistician/informatician
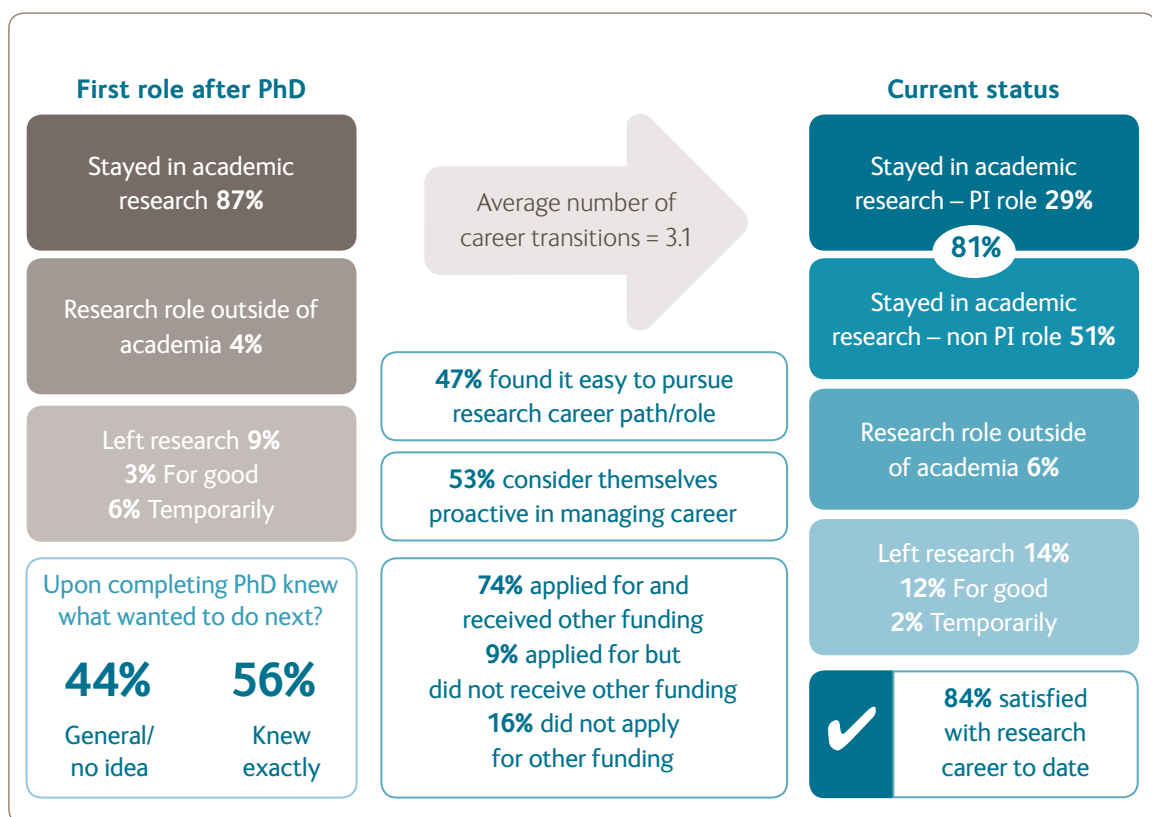
3 Overview of career choices

3.1   This chapter provides an overview of the career choices of those who took part in the online survey. It presents a summary of roles upon finishing a PhD, current role at the time of the research and the average number of career transitions required to get to this point. The chapter then briefly discusses satisfaction with current or most recent role, in order to set the scene for a discussion of career blockers and enablers in Chapter 4.

Summary of career choices

3.2   Figure 3.1 summarises the career choices of respondents and shows their first role after completing their PhD along with their status at the time of the research.

Figure 3.1: Summary of career choices of respondents

First role after PhD

Stayed in academic research **87%**

Research role outside of academia **4%**

Left research **9%**
3% For good
6% Temporarily

Upon completing PhD knew what wanted to do next?

44%   **56%**
General/   Knew
no idea   exactly

Average number of career transitions = 3.1

47% found it easy to pursue research career path/role

53% consider themselves proactive in managing career

74% applied for and received other funding
9% applied for but did not receive other funding
16% did not apply for other funding

Current status

Stayed in academic research – PI role **29%**

81%

Stayed in academic research – non PI role **51%**

Research role outside of academia **6%**

Left research **14%**
12% For good
2% Temporarily

✔   **84%** satisfied with research career to date

Base: All Medical Researchers (391)

3.3   There were significant differences by gender (see Figure 3.2). Although no more likely to have remained in research than their female counterparts overall, male respondents were more likely to be working in academic research than females (85% compared with 74%); whilst female respondents were more likely than males to be working within a non-academic research role[8] (9% compared with 4%).

---

8.   Some of the non-academic research roles mentioned by respondents included: Research Scientist/Scientist, Research Project lead, Research Director, Health care/medical staff and Statistician/informatician

Figure 3.2: Gender differences within respondents' current role

Gender differences in current role

Academic Research
- Female: 74%*
- Male: 85%

Research Outside Academia
- Female: 9%*
- Male: 4%

Temporarily Left Research
- Female: 3%
- Male: 1%

Left Research for Good
- Female: 15%
- Male: 9%

Legend:
- Female
- Male
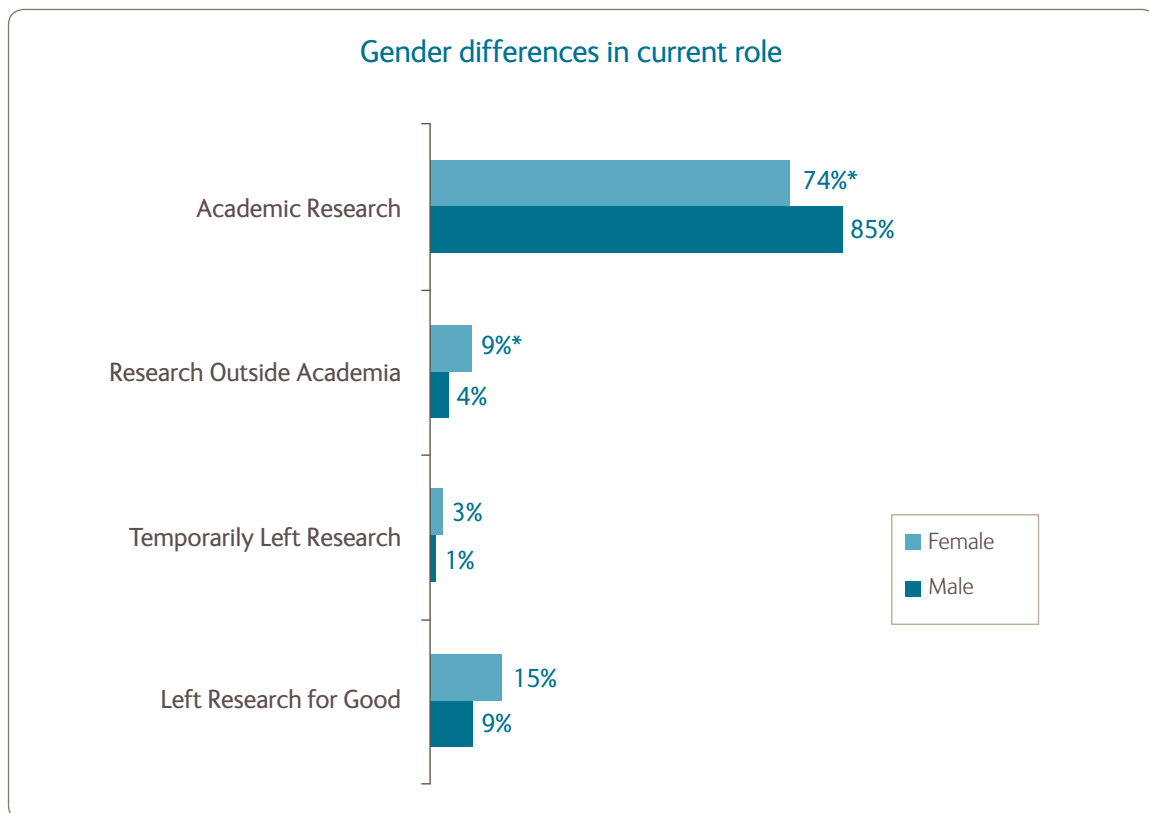
Base: All Medical Researchers (391)

Note: The '*' markers on the graph indicate findings that are significantly different between men and women

3.4 One in ten respondents had worked within a role in non-academic research at some point in their career.

3.5 Certain groups were more likely to have left research for good:
- As may be expected, those within the studentship cohort (32% compared with 6% who received a research grant, 4% who held a PLT or 2% who applied for a CDA);
- UK nationals versus non-UK nationals (14% compared with 3%).

Satisfaction with career

3.6 While most (84%) were satisfied with having reached their most recent or current role in their career, 16% were dissatisfied. While this was most prevalent among respondents in the earlier phase of their career, dissatisfaction was also linked to difficulties in accessing careers advice (36% of those who found it difficult to access careers advice were dissatisfied with how they had progressed in their careers).

4 Blockers and enablers to pursuing a research career

4.1 Respondents were divided broadly evenly into those that found it easy to pursue a career in research and those who found it difficult (47% vs. 52%). The main blockers and enablers are summarised in Figure 1.1.

4.2 Blockers were experienced across careers, and not concentrated at any one particular career transition. 39% of those who has transitioned from PhD to post-doc found the progression difficult, 36% of those who had moved from post-doc to research independence and 39% of those who had made the transition to Principal Investigator (39%) found it difficult.

Funding

4.3 **Difficulty securing funding was the main blocker** highlighted by respondents. Lack of funding was the most commonly cited reason for finding pursuing a research career difficult (37%).

> "When the funding runs out you have to look for the next post."
> Female, PhD Studentship, PLT and Research Grant, Academic Research (PI)

4.4 Similarly, when asked what could have been done to make pursuing a research career easier, respondents[9] most commonly stated:
- More frequent funding opportunities (60%); and
- Providing a greater amount of funding (56%).

Impact of MRC funding received

4.5 Securing funding was seen as important in enabling career progression (85% rated it as important[10]).

4.6 As shown in Figure 4.1, the great majority of respondents reported that MRC funding had clear and positive impacts upon their career. Common responses given across the cohorts were that the funding acted as a springboard for their career; it enabled them to pursue/progress research or set up independently; and helped secure jobs/promotions.

> "I was given opportunities… when I got my first grant from the MRC, it changed my life."
> Male, Research Grant, Academic Research (Professor)

---

[9] This question was asked to all those who remained in research for at least 3 transition points in their career.

[10] The studentship cohort were less likely than all other cohorts to state that success in securing funding was an important factor in enabling them to progress within their research career .The studentship cohort may have felt that this was less important as they were less likely to have applied for and/or received other funding.

Figure 4.1: Impacts of MRC funding
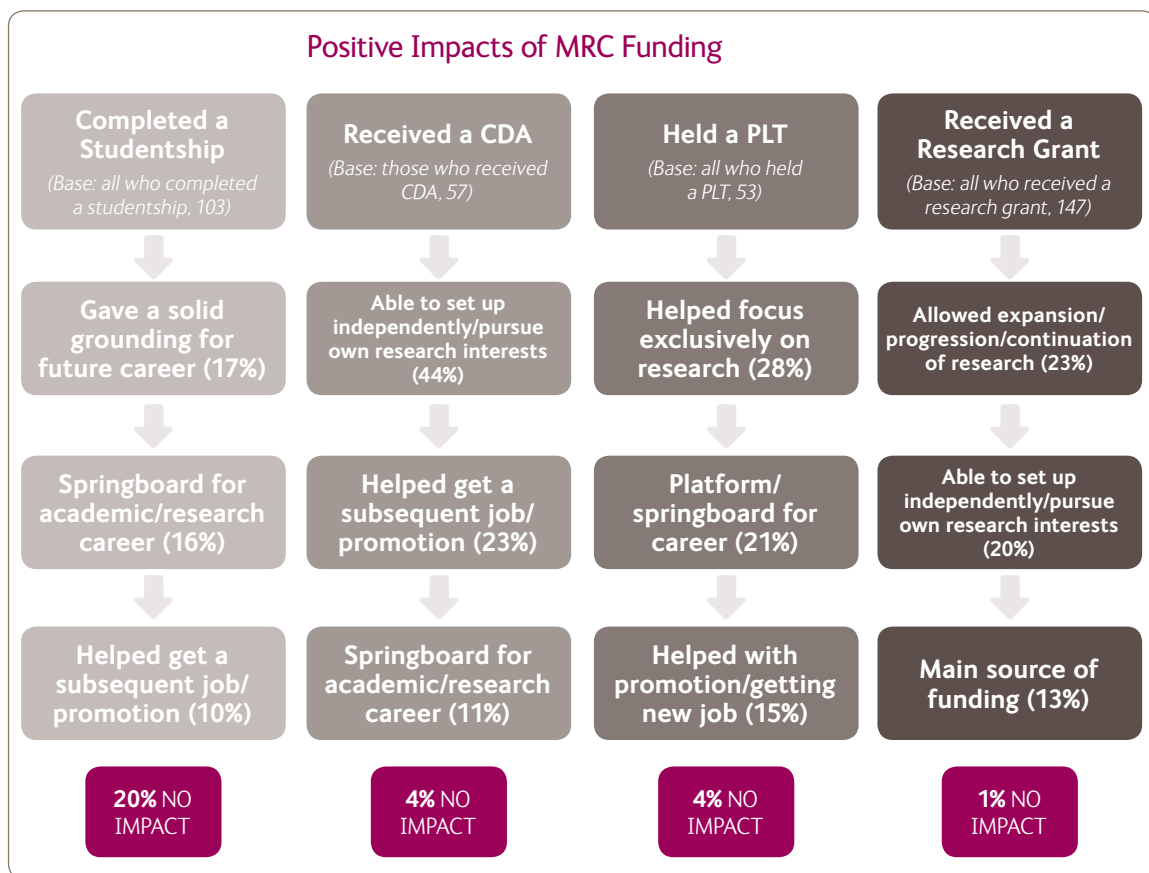
4.7 The qualitative research highlighted that additional funding in the form of small grants would be extremely valuable for early career researchers to enable them to kick start their career.

> "I think more opportunity for small competitive grants are needed ... smaller earlier career grants"
> Male, Research Grant, Research outside Academia

4.8 Longer term grants, even if they were distributed more thinly, would be positively received. In particular some felt it would be useful if these grants encouraged and facilitated mobility.

> "I think there could be something that involves moving around but it is more of a permanent role e.g. if people could get a 5 or 6 year grant in which 2 years are spent in one lab and 2 years in another lab and 2 years abroad or something like that..."
> Male, CDA (Rejected), Academic Research (Lectureship post)

Gaining skills and experience

4.9 Over a quarter (27%) of respondents cited competition for jobs as a reason for them finding pursuing a research career difficult.

4.10 Almost all respondents said **gaining skills and experience through training and research were essential to progressing a career** and were important in enabling progression (94% for both 'skills' and 'experience').

Training

4.11   That said, **it was relatively uncommon for respondents to undertake further formal training** (36%). Training courses most commonly accessed related to generic management/workplace skills rather than technical or discipline-specific research skills (see Figure 4.2).

Figure 4.2: Training received during career[11]
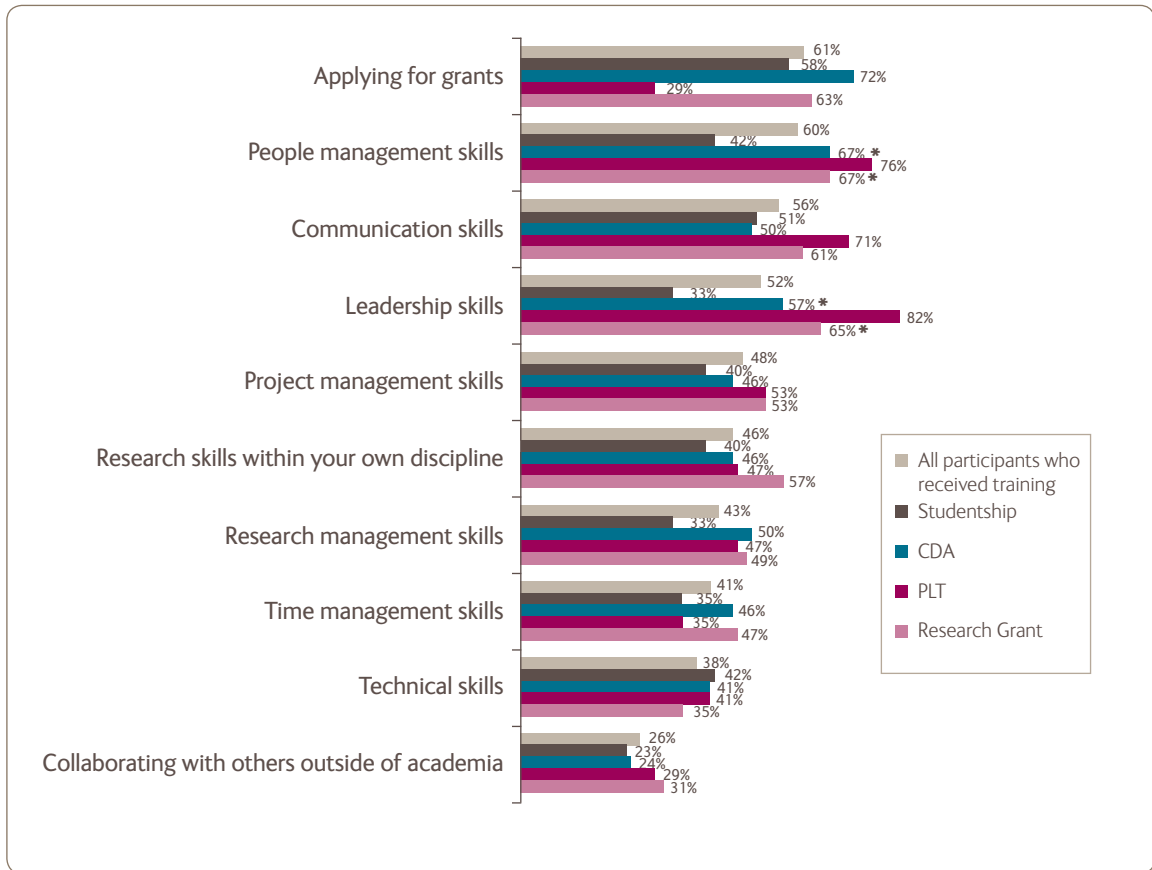
Base: All those who received formal training (141), Studentships (43), CDA (46), PLT (17), Research Grant (49)

Note: The '*' markers on the graph indicate findings that are statistically different from one another. The colour of the '*' indicates which other groups they are significantly different from

---

Experience of industry

4.12 **The qualitative research highlighted that some respondents felt that broadening their experience beyond academia could be an effective enabler**[12], whether this was in industry or within a research role outside of academia. The point at which they entered industry varied, some took this step immediately upon finishing their PhD, while others went into industry after gaining more experience within academia. Most of these individuals considered it a positive experience and stated that it had benefited their subsequent career development. Skills and knowledge gained during their time out of academia could then be combined with their academic knowledge to create what was described by one respondent as a 'very powerful combination'.

4.13 Networking with other researchers both within and outside of academia was also highlighted as a valuable tool for gaining knowledge and guidance about career options.

> "It would be incredibly useful to have some kind of means for academics to meet industry... we are trying to optimise our ability to recruit PhD students... any means of Research Councils opening up those sort of contacts within industry might be valuable."
> Male, Research Grant, Academic Research (Professor)

Careers advice, support and guidance

4.14 44% of respondents rated accessing careers advice, support and guidance as an important enabler. As such, accessing careers advice was not considered by all respondents to be essential to progress their careers; unlike access to funding and gaining skills and experience which were both seen as important by a clear majority.

4.15 Where advice, support and guidance had been accessed, it was **support from professionals in a field of interest and support from peers that were considered most useful** (sources of advice accessed are ranked below according to the proportion accessing each type of service).
- Advice, support or guidance from peers was most commonly accessed (by 70%) and of these, 43% had found it the most useful type of support
- 55% of respondents had accessed advice, support or guidance from professionals in a field of interest and of these, 45% had found it the most useful type of support.
- 43% accessed advice, support or guidance from employers and of these, 21% had found it the most useful type of support
- 39% received performance reviews or appraisals but of these, only 9% found these the most useful type of support received
- 30% accessed mentoring and of these one quarter – 26% – had found it the most useful
- 20% accessed a University Careers Service and of these, 9% found it the most useful type of careers advice, support or guidance.

4.16 When asked what might have **made pursuing a research career easier**, over a third mentioned:
- Clearer career paths (37%); and
- More guidance and/or support in making career choices (36%).

4.17 **A lack of careers advice, support and guidance was specifically raised as a blocker for around one in eight respondents.**

4.18 Indeed, **there was a correlation between leaving research altogether and experiencing difficulties accessing careers advice** (just over half (53 individuals) of those who had left research noted difficulties in this area compared to a third of those who remained in research).

---

12. As reported in Chapter 3, one in ten medical researchers had worked within a role in non-academic research at some point in their career.
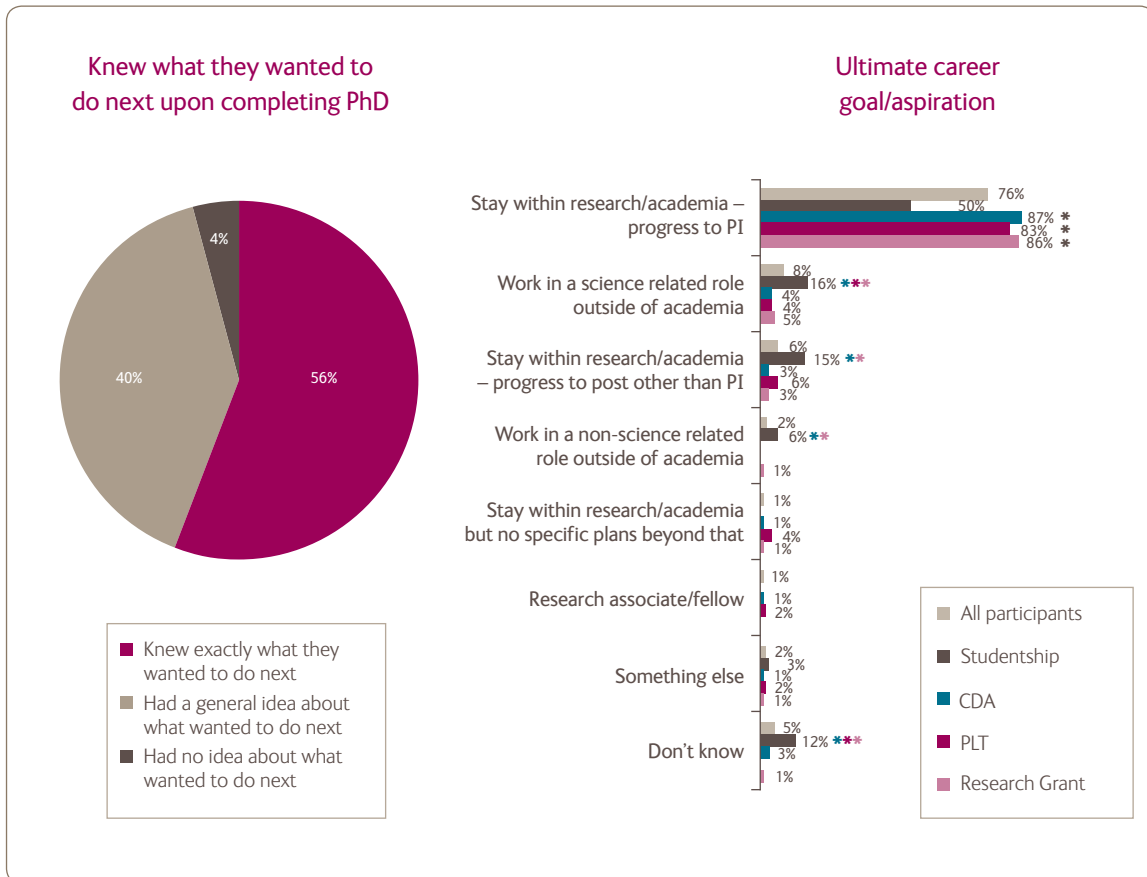
Achieving career aspirations and goals

4.19 The most common ultimate career goal/aspiration upon completing a PhD was to stay within academia
      and progress to Principal Investigator (76%), with some considerable variation by cohort[13]. There was a high
      correlation between having this aspiration from the outset and being in a PI role or academic research at the
      time of the survey (88% of those in a PI role stated this as their initial career aspiration compared with 39% of
      those now working in research outside academia and 40% of those who had left research).

4.20 However over three quarters aspiring to Principal Investigator might also be considered unrealistic. Indeed, only
      34% of those that had this early aspiration had achieved this role at the time of the interview. This suggests
      that early career researchers might benefit from being provided with information on alternative career options.

4.21 Roughly equal proportions wanted to work in a science related role/sector outside of academia (8%) or stay
      within research/academia and aim to progress to a post other than Principal Investigator (6%).

---

13. Those who completed a studentship were significantly less likely to respond that progressing to Principal Investigator was their ultimate
     career goal/aspiration (50%). Respondents who completed a studentship were more likely than other cohorts to respond their ultimate
     goal was to work in a science related role outside of academia (16%), stay within research and progress to a post other than PI (15%) or
     work in a non-science related role outside of academia (six %). Those who completed a studentship were also more likely to respond that
     they did not know what their ultimate career goal/aspiration was at this point in their career

4.22 Figure 4.3 illustrates the proportion of all respondents who knew what they wanted to do next and their ultimate career goals/aspirations upon completing their PhD[14].

Figure 4.3: Next steps and ultimate career goal/aspiration upon completing PhD

Knew what they wanted to do next upon completing PhD

- 56% — Knew exactly what they wanted to do next
- 40% — Had a general idea about what wanted to do next
- 4% — Had no idea about what wanted to do next

Ultimate career goal/aspiration

Stay within research/academia – progress to PI: 76%, 50%, 87% *, 83% **, 86% *

Work in a science related role outside of academia: 8%, 16% ***, 4%, 4%, 5%

Stay within research/academia – progress to post other than PI: 6%, 15% **, 3%, 6%, 3%

Work in a non-science related role outside of academia: 2%, 6% **, 1%

Stay within research/academia but no specific plans beyond that: 1%, 1%, 1%, 4%, 1%

Research associate/fellow: 1%, 1%, 2%

Something else: 2%, 3%, 1%, 2%, 1%

Don't know: 5%, 12% ***, 3%, 1%

Legend:
- All participants
- Studentship
- CDA
- PLT
- Research Grant

Base: All participants (391), All Studentships (103), All CDA (122), All PLT (53), All Research Grant (147)

Note: The '*' markers on the graph indicate findings that are statistically different from one another. The colour of the '*' indicates which other groups they are significantly different from

4.23 Qualitative interviews outlined the importance of the early advice and support of supervisors; for some this was a contributing factor in choosing to remain within research following a PhD. Respondents felt supervisors offered authentic advice and guidance.

> "My PhD supervisors were equally enthusiastic people and that just engrained it. The power of influence of responsible people on young folks is quite profound, I don't think people appreciate that enough these days."
> Male, Research Grant, Academic Research (Professor)

---

14. The results shown in Figure 4.3 are based on all participants. Included within the 'don't know' code is both those who reported they had no idea about what they want to do next upon completing their PhD and those when asked to give an ultimate career goal/aspiration responded don't know.

Access to advice, guidance and support

4.24 **60% felt they had not received enough careers advice, support and guidance throughout their career.** 9% reported not receiving any careers advice at all.

4.25 Respondents more likely to feel they hadn't received enough careers advice, guidance and support:
- Those who completed a studentship or who applied for a CDA compared with those who received a MRC research grant (74% and 62% respectively, compared with 47%); and,
- Women (70% compared with 53% of men).

4.26 Linked to this 36% found accessing careers advice difficult. Women were more likely to find accessing careers advice difficult than men (43% compared with 31%).

4.27 **Difficulties accessing careers advice could make pursuing a research career more difficult:**
- Those who had found it difficult to access careers advice, support or training were more likely to have left research for good by the time of the survey than those who had found it easy (18% and 7% respectively).

Views on advice, guidance and support accessed

4.28 Around 41% of those that had received careers advice, support and guidance throughout their research career were satisfied with what that had received.

4.29 The qualitative interviews revealed that **advice from individuals who have experienced research careers themselves** is most valued.

> "The key aspect needed: it needs to be unbiased, it needs to be authentic, it needs to come from people who do know the system and know the pros and cons. My experience has been that people who don't do that job don't offer great advice, because they can't."
> Male, PhD Studentship, Left Research for Good

4.30 However, there was some feeling that advice coming from colleagues and peers can be biased towards academia and some guidance may be biased towards a particular topic and institution within academia.

Additional advice, guidance and support needs

4.31 Where respondents said that they would have benefitted from additional support or training at a specific transition point in their career, they were asked what in particular would have been useful. The most common responses given were:
- Mentoring (50%);
- Advice, support or guidance received from professionals in the field/fields of interest (47%);
- Advice, support or guidance received from MRC (41%);
- Advice, support or guidance from peers (30%);
- Performance reviews/development plans/appraisals (27%)
- Advice, support or guidance from a previous employer or employer at the time (27%); and,
- Training course provided by academic institution worked for (27%)[15]

4.32 A **demand for mentoring** was also mentioned during the qualitative interviews; a few respondents mentioned that lacking powerful or senior backers to help promote them early on in their careers may have slowed their career progression.

> "I didn't have a senior figure to champion my cause or mentor me along the way"
> Female, CDA (Withdrawn), Temporarily Left Research

---

[15]   Those who completed a studentship were more likely to respond a training course provided by academic institution worked for (45%) than those who held a PLT (17%), those who applied for a CDA (21%) and those who received a research grant (21%).

4.33 It was suggested that the MRC could set up a mentoring scheme, or have careers advisors whose research experience would help to provide authentic advice to early career researchers. Some highlighted the importance of this mentoring early on in their career, and at regular intervals.

4.34 Overall, one in eight spontaneously mentioned a need for clearer, better structured advice on the various career options and requirements within the field. This rose to almost a quarter (23%) of those who completed a studentship (compared with 9% of those who applied for a CDA, 9% of those who received a research grant and 6% of those who held a PLT), suggesting a real need for clearer career options.

Job security and availability

4.35 **Lack of job security and availability** was a common blocker:
- 13% of those who said they had found pursuing their research career difficult cited a lack of job security and availability as a reason.
- Adding to this, 40% said that greater stability within job roles would have made pursing their research career easier.
- Among those who had left research for good, a lack of job security was the most common reason given for leaving (63%)[16].

4.36 The qualitative interviews confirmed that careers within research were challenging to pursue because of the lack of job stability, short term contracts and limits on funding. This was a particular barrier for those who wanted to remain in research but not become a Principal Investigator; the potential of researchers who excel in their chosen field or who have particular technical skills but who do not wish to lead people is not recognised because they are expected to keep progressing towards becoming Principal Investigators. These individuals can experience a lack of career progression which is a disadvantage to them and their institution.

> "We have in our institute absolutely no way of recognising those skills without people basically becoming technicians and taking a much lower level job. There's no way for senior post-docs to just become senior support scientists"
> Female, Research Grant, Academic Research (PI)

4.37 Some respondents were simply not prepared to move to stay within research or to accept a lower paid position than they felt they deserved. One respondent described how they had completed a fellowship with the promise of a lectureship post in the future. However, when the time came they did not receive this and were offered other fellowship positions in the institution, which would not allow them to progress in their career. They left research.

> "It was a painful decision to make, but it wasn't a particularly hard one"
> Male, PhD Studentship, Left Research for Good

4.38 A perceived pressure **to be mobile or to re-locate was a blocker for a significant minority of respondents**:
- A lack of posts in the local area was sometimes a reason for leaving research (mentioned by a fifth of the 46 respondents who had left research for good).
- A slightly higher proportion (35%) of those who had left research altogether stated more flexibility in terms of mobility and/or less pressure to re-locate would have made it easier for them to pursue their research career.

---

16. Note low base size (46)

4.39   The qualitative research confirmed that some respondents saw mobility as important to succeed. There was a common view that it is important to gain extensive experience in various labs, and in some cases, in various countries, in order to win grants and progress a career. When this is combined with other commitments, such as having a partner or young family, respondents stated they had to make considerable sacrifices.

> "Probably the biggest sacrifice I made was my marriage ultimately because the stresses of the job and the things it involves are not always very conducive to a happy home life."
> Male, PLT, Academic Research (PI)

4.40   For some a career in research (and particularly academic research) did not fit well with being a parent of young children. This is in line with the findings from the online survey, where the most frequently cited reason for temporarily leaving research was balancing family/personal commitments with academia.

> "I didn't really feel I had a choice. I could have carried on but I wasn't sure I really was giving my best to either – being a young mother or a high flying post doc position – so I gave that one up."
> Female, CDA (Rejected), Academic Research (PI)

4.41   Concerns about balancing work and family life were also shared amongst men in the research community.

> "It is hard work, I had to work seven days a week and was expected to – if you are young and in your twenties you can do that but once you have a family that is ridiculous and unhealthy."
> Male, CDA (Successful and accepted), Academic Research (PI)

4.42   Some respondents said their willingness to move contributed to their success. Others reflected that in hindsight it would have been useful to have been more mobile earlier in their career.

> "I, probably as a younger person, should've moved around more... Mobility and ability to share resources would have been useful."
> Male, Research Grant, Academic Research (Professor)

4.43   Although mobility was seen as an enabler by some respondents, others did stress that they had been successful without having to move around, and indeed there were perceived benefits in not doing so.

> "There are some advantages and disadvantages in moving around, you get to experience different places and different cultures and different labs. But with each move you have to generally start a fresh."
> Male, PhD Studentship, Academic Research (Post-doctoral Research Assistant)

4.44   Some female respondents interviewed mentioned there was a perceived gender inequality within research which presented a barrier to women in terms of salary, promotions and support offered.

> "I am very aware of gender equality issues but when I was a grad student there was no support, they weren't bothered about women in science, you sank or swam."
> Female, CDA (Rejected), Academic Research (PI)

Opportunity to publish work

4.45 **The vast majority of respondents (91%) stated that the opportunity to publish was important in progressing a research career.**

4.46 The majority of respondents had a peer reviewed publication in a refereed journal arising from their PhD (94%). Only 20[17] of the 391 respondents completed a PhD that did not lead to a peer-reviewed publication in a refereed journal, with the main reasons being lack of support from their PhD supervisor and not being the main author of the research[18].

4.47 A large proportion of those who had a peer reviewed publication from their PhD said this was very important in making their next career step (65%, with a further 20% saying quite important). Respondents who completed a studentship were less likely than all other cohorts to say such a publication was important (73% compared with 92% of those who held a PLT, 88% of those who applied for a CDA, and 86% of those who received a research grant).

---

[17] Of these 20 medical researchers, 7 had left research. 2 were PIs, 5 were working in teaching/lectureship posts, 5 as post-doctoral research assistants and 1 as a research lab/facility manager. Base sizes are too small to draw statistically robust conclusions, but there is some suggestion that those who did not have a PhD lead to a publication were more likely to leave research than those who did publish.

[18] Examples of this lack of support mentioned by researchers who did not have a peer reviewed publication included; they had a distant relationship with their supervisor, their supervisor did not feel there was a big enough story, or felt that it required 'just one more experiment' before being suitable for publishing; and that their supervisor did not push for publication.

Placements and partnerships

41% of respondents rated placements and partnerships as not important in terms of progressing a research career. However, **where a placement had been undertaken, the reported benefits were numerous** (Figure 4.4):

Figure 4.4: Benefits of undertaking placements
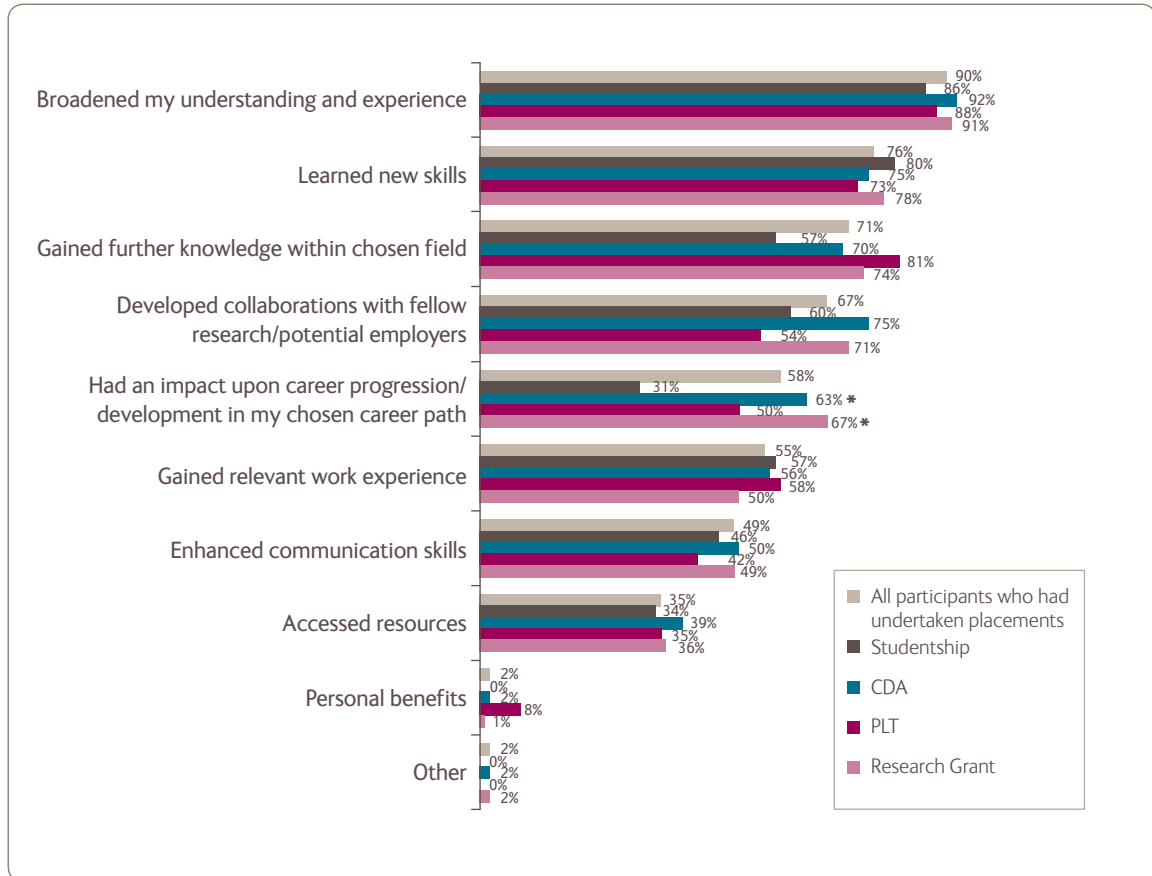
Base: All those who had undertaken placements (198), Studentships (35), CDA (64), PLT (26), Research Grant (94)

Note: The '*' markers on the graph indicate findings that are statistically different from one another. The colour of the '*' indicate which other groups they are significantly different from

4.48   51% had undertaken a placement. Reasons for not undertaking placements include:

- They were unaware placements were available (45%). Women (56%) more likely to give this response than men (38%);
- Time was also a barrier to completing placements (31%).

Active career management

4.49 57% of respondents rated themselves as having a proactive approach to managing transitions within their career. This correlated statistically with success in securing funding:

- CDA applicants and research grant holders were more likely to rate themselves as proactive (63% and 62% respectively) than those within the studentship cohort (45%), although this may simply be a reflection that those further along in their career are more likely to consider themselves proactive.

4.50 Likewise there was a link between the ease of accessing careers advice and how proactive an individual perceived themselves to be (66% who found it easy to access careers advices considered themselves proactive compared with 49% of those who found it difficult).

4.51 In the qualitative research, participants described how a proactive approach to planning and managing their career was essential in making career transitions. In several cases, international opportunities were mentioned, with some respondents seeking out placements overseas, and some others seeking out opportunities within industry.

> "It has always been a challenge – having a job; limited opportunities and that is the point ... it's just about keeping going and finding the opportunity ..."
> Male, Research Grant, Research outside Academia

4.52 There was a statistical correlation between proactivity and perceived importance of careers advice, as well as satisfaction with careers advice. Respondents who rated themselves as proactive in managing their career were more likely (52%) to rate access to careers advice, support and guidance as important than both neutral (39%) and reactive (22%) respondents.

4.53 However, some respondents spoke of the need to simply 'be in the right place and the right time' (7% mentioned as an enabler). In the qualitative research some respondents said that career transitions and progression were determined and driven by circumstance. Rather than planning to gain a certain role at a certain institution, they waited for an opportunity to present itself within their current institutions.

> "I was doing a subject that I was interested in and there was an opportunity available where I already was. It was half falling into it and half that I wanted to give it a bit more of a go."
> Male, PhD Studentship, Research outside Academia

Reward and recognition

4.54 **88% of respondents stated they had received reward and recognition** in their career, with 23% believing they received lots. Both those who held a PLT and those who held a research grant were more likely to say they had received lots of recognition (both 30% in comparison with CDA applicants (15%)[19]. Those with a white ethnic background were more likely to feel they had received reward and recognition with those from non-white ethnic backgrounds (89% compared with 76%)[20].

4.55 **Receiving reward and recognition was correlated with success**, in terms of:

- Finding it easy to access careers advice, support and training (93% who found it easy had received reward and recognition in their career compared with 81% who found it difficult).
- Finding it easy to pursue a research career (96% who found it easy received reward and recognition compared with 81% who found it difficult).

---

[19] The cause/reasons underlaying this difference in perceived level of reward and recognition were not explored in the research

[20] Although the difference reported is statistically signficant these findings should be treated with caution given the low number of non-white ethnic repsondents (34).

4.56 During the qualitative interviews it was evident that respondents considered reward and recognition to encompass a wide range of things:
- Awards and funding;
- Salary;
- Promotion/promotion prospects;
- Acknowledgement and praise from employers, others in the field, wider industry and peers;
- 'Internal reward' or job satisfaction.

4.57 'Internal reward' was a fairly common term used among respondents and referred to satisfaction from meeting personal goals within research; in other words 'self-recognition'. The lack of 'external' reward was described by one respondent as 'soul-crushing', meaning researchers are often driven by the internal reward or personal satisfaction they received from conducting research.

> "There are two aspects to reward, to me, there's internal reward and external reward. I found my academic career incredibly rewarding internally, the work was really, really interesting and I got to see the effects of what we were doing in a small part of the scientific community."
> Male, PhD Studentship, Left Research for Good

4.58 **Gaining sufficient internal reward for research emerged as an indirect enabler to success.** This could 'ease' some of the difficulties encountered (outlined above) when pursuing career goals.

4.59 **Offering greater reward and recognition in the form of praise, encouragement and acknowledgement from peers and supervisors would be received positively** particularly when researchers are first setting out on their career.

> "Getting recognition for the work you are doing is always encouraging and motivating, so as much recognition and motivation you can possibly give somebody is a good way of managing staff and keeping motivation."
> Male, PhD Studentship, Academic Research (Post-doctoral Research Assistant)

5   The value of clearer career options

5.1   During the qualitative research participants were asked their views on the MRC's proposal to signpost career options, showing different routes into and out of the options available across career stages. Findings in this section are based on qualitative data[21] and present useful insight for the signposting of career options.

5.2   **Respondents believed a signposting career options would allow researchers to make more informed decisions about the career choices they make.**

> "I think some kind of structured career path at the time (end of the early 1990s) would have been useful. I don't know if it would have changed my career path at all but at least I would have been able to make better informed decisions."
> Male, CDA (Rejected), Academic Research (Lectureship Post)

5.3   Some respondents cautioned that career options just being presented on a piece of paper or on a website may be ignored, with some researchers stating they had received similar things in the past, from various Research Councils, institutions and funding bodies. There is a danger this information can be too general, meaning they struggled to relate the information to their own career.

5.4   There should be an emphasis on moving 'laterally', and that non-traditional routes can be taken, some of which may also lead to a Principal Investigator role.

5.5   There was a strong feeling that individuals who do not wish to become Principal Investigators are not supported enough within academia and the majority of academic roles progressing to Principal Investigator are fixed term contracts; there are very few permanent roles available at this level. Some respondents interviewed did not want to become Principal Investigators but did want to remain in academia. Therefore, full time scientist positions could be created for highly skilled researchers who do not wish to take on the responsibilities of a Principal Investigator, such as leadership and management of their own team.

> "I don't know how that would be funded, I think staff scientist positions would be a great idea whereby there are good scientists that can stay at an institute and work maybe on different projects... and be supported longer term..."
> Male, PhD Studentship, Academic Research (Post-doc Research Assistant)

5.6   Finally there was some feeling that MRC is a remote organisation, and could do more to improve connectivity with research organisations and researchers including promoting and communicating the work they are doing to support medical research careers.

> "They seem to be very London-based... it's quite natural that if representatives from the organisation who are funding your research come to visit your place of work then there is a sense that it's show-time: you're the host and they're the visitor."
> Female, PhD Studentship, PLT and Research Grant, Academic Research (PI)

---

[21].   The qualitative research consisted of 15 depth interviews with researchers, selected purposively. As such findings in this section should not be considered representative of respondents generally.

6   Conclusions and recommendations

6.1   This study was designed toexplore the career choices of non-clinical medical researchers who applied for or were awarded Medical Research Council (MRC) and to provide a better understanding of non-clinical researchers' career options/choices, and the nature of any blockers or hurdles that exist to pursuing a research career.

6.2   86% of respondents reported that they were working within research. A significant minority had left research for good (12%) and 2% had temporarily left research.

Securing funding the biggest blocker

6.3   52% of all who remained within research for their first three career transitions reported they found it difficult to pursue the career they wanted. As discussed in Chapter 4, issues with funding were seen as the main blocker to pursuing a research career, with greater frequency/amount of funding being needed to make following a career in research more viable.

6.4   The majority of respondents said the MRC funding they received had a positive impact on their career and had acted as a springboard for their research career, enabling them to pursue their own research interests.

6.5   Respondents said that **more opportunities for early career researchers to receive small grants to kick start career, and longer term grants, would be useful.**

Other blockers and enablers

6.6   Further to a lack of funding, the other main blockers to pursuing a career in medical research were:
- A lack of and/or difficulty accessing good, impartial careers advice, support and guidance;
- Lack of job security/availability;
- Difficulties balancing work and family life; and;
- Lack of proactivity.

6.7   And further to greater funding, the main enablers to a career in medical research were:
- Access to careers advice, support and guidance (with a particular need for mentoring);
- Gaining skills and experience through training and research;
- Feeling 'internal reward' or job satisfaction from the work;
- Proactivity;
- The opportunity to publish work; and,
- Mobility.

Most challenging transitions

6.8   The most frequently cited transition points which could have benefitted from further advice included; the transition from PhD to post-doc, and the transition from post-doc to research independence or Principal Investigator.

6.9   In comparison to other cohorts, those who completed a studentship were less likely to have received other funding and most likely to have left a career in research[22]. For this cohort, the transition where additional advice was most beneficial was 'from PhD to post-doc' (55%). Individuals undertaking a PhD may benefit from early support and advice to identify and work towards their career goals

---

[22]   However, this may be related more to the career point at which they were MRC funded as opposed to this being the most difficult transition (i.e. Other cohorts have all already made this transition before MRC contact).

The role or careers advice and mentorship

6.10   A significant proportion of participants said that clearer career options and receiving careers advice/guidance in making career choices would have made it easier to pursue a research career. Alongside this, 60% of respondents said they did not receive enough careers advice throughout their research career and just over a third (36%) reported finding it difficult to access careers advice. **The findings suggest there is a need for clear, accessible careers advice and guidance.**

6.11   Respondents wanted careers advice to be delivered by other researchers and any advice given to place equal value on careers outside of academia. **There was a prevailing view that mentoring and having individual careers advisors, who experienced a research career, would be very useful.** It was suggested that this was something that MRC could look to set up and promote.

6.12   The traditional academic Principal Investigator career path was well understood. **There was a lack of support and understanding surrounding alternative research careers.**

6.13   **There was a positive response to the MRC proposal to signpost alternative career options.** It was suggested that the MRC could add more careers advice and guidance to its website. A number of respondents suggested flow charts/diagrams detailing the different career options and detail of what is expected within each role. Suggestions here included:
- Case studies of individuals who work within medical research; as these were personalised and 'real' they were more useful than generic charts or diagrams;
- The options to be realistic and mention potential hurdles and difficulties encountered along the way, in particular, competition/limited number of roles and lack of funding.

6.14   Networking events and stronger ties between academia, industry and the MRC were seen as a valuable tool for both sharing/gaining knowledge and for offering guidance on the different research career options, particularly:
- Face-to-face events providing detail of career options and access to employers;
- MRC maintaining/creating stronger links within both academia and industry so that knowledge and understanding of the opportunities are promoted.

Equality and Diversity

6.15   Women were more likely than men to have found it difficult to pursue the research career path they wanted[23]. They were also more likely to say they had not received enough careers advice or guidance, and that they had found accessing careers advice difficult. They reported publishing fewer papers than men and had lower awareness of placements. However, they were more likely to report participating in public engagement events, gained teaching/lectureship experience and joined a society or council. **Women would benefit from greater access to support and guidance throughout their research careers.** When asked what could be done to improve careers advice women were more likely than men to say that 'clearer, better structured advice on the various career paths and requirements', 'more relevant information/advice', and 'more visible/accessible' careers advice, support and guidance.

6.16   During the qualitative interviews some women reported a gender inequality, which was a barrier to women pursuing a research career. This perceived inequality took the form of the salaries offered, promotions and support made available to female researchers. Female respondents also discussed the difficulties of having a family whilst remaining in research – this difficulty was also mentioned by male respondents, albeit to a lesser extent. More needs to be done to support women to pursue, and remain within, a career in medical research. The use of female role models and inspirational leaders would be useful here. Once within a medical research role, women need to be better supported via more flexible working opportunities to balance the demands of family life and a career in medical research.

---

[23].   The underlying reasons why women found it difficult to pursue the research career path they wanted have not been explored.

6.17 Those with a white ethnic background were more likely to feel they have received reward and recognition compared with those from non-white ethnic backgrounds[24], although the reasons underlying this difference were not explored. More needs to be done to recognise the rewards of diversity and for research organisations to attract and retain the best and most diverse workforce; recruiting staff from the widest possible pool and ensuring that remaining within research is seen an attractive career option for their staff.

Next Steps

Drawing on the strengths and opportunities identified during this review, the MRC will:

- Develop a non-clinical career framework which will form the basis against which career stages can be described. Career options for biomedical researchers will be mapped against this framework including alternative/non-traditional career choices.
- Identify ways in which MRC's existing funding mechanisms might be modified to better support career transitions through the provision of small amounts of flexible funding, for example, to support placement/secondment opportunities, mentorship, leadership training and support for returners to research.
- Ensure MRC communications, policies and processes are not lacking flexibility, display bias or disadvantage certain individuals, or fail to encourage a diverse spectrum of applicants.

Acknowledgements

The MRC is most grateful to the medical researchers who completed this survey.

Thank you to all the staff and stakeholders who provided input, reviewed, or tested the survey in development.

---

24. Although the difference reported is statistically signficant these findings should be treated with caution given the low number of non-white ethnic respondents (34).

7   Appendix 1: Research approach

7.1   The research included both a quantitative online survey and qualitative in-depth telephone interviews.

7.2   The quantitative online survey was conducted first and comprised a sample of 391 interviews. The breakdown of the interviews achieved is shown in the table below.

Table 10.1 Achieved survey interviews by cohort

Research cohorts	Achieved interviews
PhD student who completed MRC sponsored post-graduate research degrees in the 2003-04 or 2004-05 academic years	103
Researcher who applied for MRC Careers Development Award (CDA) between 1995 and 2004	122
Researcher who held a MRC unit/institute Programme Leader Track-position (PLT) – between 1995 and 2004	53
Researcher who received a MRC research grant or New Investigator research grant between 2003 and 2006	147
Total	391

7.3   The qualitative in-depth telephone interviews were conducted on the back of the quantitative online survey. During the quantitative online survey medical researchers were asked whether they would be willing to be re-contacted to take part in a telephone in-depth interview and asked to provide contact details. The qualitative stage looked to explore medical researchers' career paths in more detail and to uncover any barriers and/or motivations experienced during their different roles and transitions.

7.4   A total of 15 qualitative in-depth interviews were conducted. The breakdown of the interviews achieved is shown in the table below. Some of the researchers interviewed had received more than one type of MRC funding, therefore, are counted in more than one of the cohorts.

Table 10.2 Achieved qualitative interviews by cohort

Research cohorts	Achieved interviews
PhD student who completed MRC sponsored post-graduate research degrees in the 2003-04 or 2004-05 academic years	4
Researcher who applied for MRC Careers Development Award (CDA) between 1995 and 2004	5
Researcher who held a MRC unit/institute Programme Leader Track-position (PLT) – between 1995 and 2004	2
Researcher who received a MRC research grant or New Investigator research grant between 2003 and 2006	7
Total	15

8   Appendix 2: Quantitative questionnaire

MRC Next Destinations Survey
J5373   Date   Online

Quota category	We will be monitoring quotas – no set target

S Screener

We'd like to say thank you for taking the time to complete this online survey about people who work in, or have worked in, medical research. Your opinions are incredibly important to us and will help inform how we invest in the future. We have aimed to make this survey as engaging and easy to complete as possible.

The survey will take about 15 minutes to complete. We are interested in your views and opinions in response to the questions asked and there is no need to go back and research the facts before you respond.

Please be assured that we abide by the Market Research Society (MRS) Code of Conduct and that your responses are completely anonymous.

When completing the survey, please only use the 'next' button on the page rather than the 'back' and 'forward' buttons in your browser. Note that this survey is best viewed in Microsoft Internet Explorer. The survey takes about 15 minutes to complete. If you are ready to begin please start by clicking 'Next' below.

IF ACCESSED ONLINE SURVEY THROUGH INDIVIDUALISED LINK
If you need to exit the survey, you can come back to it to continue your answers from where you left off at a later stage by clicking the original link we sent you. Please don't share this link with anyone else as it is your own unique survey invitation.

ASK ALL
S1   We would like to start by asking whether as a PhD student or researcher you completed or applied to any of the following Medical Research Council (MRC) funded post-graduate degrees, awards or programmes during the following time periods?

PLEASE SELECT ALL THAT APPLY

PhD student who completed MRC sponsored post-graduate research degrees in the 2003-04 or 2004-05 academic years	1	
Researcher who applied for MRC Careers Development Award (CDA) in between 1995 and 2004	2	
Researcher who held a MRC unit/institute Programme Leader Track-position(PLT) - between 1995 and 2004	3	
Researcher who received a MRC research grant between 1995 and 2004	4	
None of these	5	DP: ALLOW SINGLE CODE ONLY. THANK AND CLOSE

A Setting out at the beginning of career

This first set of questions are about your situation when you were first starting out in medical research so please think back to the time when you were undertaking your (first) PhD.

ASK ALL

A1   Why did you decide to undertake a PhD?

PLEASE SELECT ALL THAT APPLY

	A1
I needed a PhD to pursue a career within science, research or academia	1
To improve my ability to get a job more broadly	2
Out of academic interest or curiosity	3
I enjoyed problem solving	4
I enjoyed science/research	5
Because my family or friends expected me to	6
Because I wanted to continue studying	7
Because I didn't know what else to do	8
Other reason (WRITE IN)	9
Don't know [DP: ALLOW SINGLE CODE ONLY]	10

ASK IF S1 = 2-4 (NOT PHD STUDENT)

A2   Di d you undertake your PhD at a university in the UK or outside of the UK?

PLEASE SELECT JUST ONE ANSWERS
DP IF S1=1 THEN RESPONSE SHOULD BE FORCED TO 1

At a UK university	1	
Outside of the UK – within the EU	2	
Outside the EU	3	
Prefer not to say	4	

ASK ALL EXCEPT S1=1 (MRC FUNDED PHD)

A3   And how was your PhD funded?

PLEASE SELECT ALL THAT APPLY

Self-funded	1	
Through the institution where I completed my PhD	2	
RESEARCH COUNCILS DP INSTRUCTION: ONLY DISPLAY OPTIONS 3-9 IF A2=1		
Biotechnology and Biological Sciences Research Council (BBSRC)	3	
Engineering and Physical Sciences Research Council (EPSRC)	4	
Economic and Social Research Council (ESRC)	5	
Medical Research Council (MRC)	6	
Natural Environment Research Council (NERC)	7	
Science and Technology Facilities Council (STFC)	8	
UK Educational/Scientific charity (including The Wellcome Trust, Cancer Research UK, British Heart Foundation or Other UK Educational/Scientific charity) (PLEASE WRITE IN)	9	
Other competitively-awarded scholarship or award (WRITE IN)	10	
EU/EC funded	11	
Support from my employer or an industry body	12	
Other (WRITE IN)	13	
Don't know	14	DP: ALLOW SINGLE CODE ONLY

ASK ALL

A4   And in which academic year did you graduate from your PhD?

PLEASE SELECT JUST ONE ANSWER

Before the 1993-1994 academic year	1	
1993-1994	2	
1994-1995	3	
1995-1996	4	
1996-1997	5	
1997-1998	6	
1998-1999	7	
1999-2000	8	
2000-2001	9	
2001-200 2	10	
2002-2003	11	
2003-2004	12	
2004-2005	13	
Cannot remember	15	

ASK ALL

A5   Which of the following skills, knowledge or experience did you gain or improve as a result of undertaking your PhD? Please think about both research and transferrable skills, knowledge or experience gained.

PLEASE SELECT ALL THAT APPLY

Research skills within your own discipline	1	
Research skills outside your own discipline	2	
Technical skills (e.g. equipment)	3	
Research management skills	4	
Time management skills	5	
Problem solving skills	6	
Finance management skills	7	
Communication skills	8	
People management skills	9	
Collaborating with others outside of academia	10	
Applying for grants	11	
Team working skills	12	
Project management skills	13	
Dedication and commitment	14	
Analytical skills	15	
Critical thinking	16	
Self-confidence	17	
Other (WRITE IN)	18	
Don't know	19	DP: ALLOW SINGLE CODE ONLY

ASK ALL

A6   And upon completing your PhD which of the following best describes your situation...?

PLEASE SELECT JUST ONE ANSWER

You knew exactly what you wanted to do next	1	
You had a general idea about what you wanted to do next	2	
You had no idea about what you wanted to do next	3	
Don't know	4	

A7   DELETED

ASK TO THOSE WHO HAD AN IDEA OF THEY WANTED TO DO (A6=1-2)

A8   And which of the following best describes your ultimate career goal/aspirations at this time?

PLEASE SELECT JUST ONE ANSWER
DP NOTE: HAVE TWO OTHER SPECIFIES WITHIN QUESTION

Stay within research/academia – aiming to progress to Principal Investigator	1	
Stay within research/academia – aim to progress to a post other than Principal Investigator (PLEASE WRITE IN WHAT THIS)	2	
Work in a science related role/sector outside of academia	3	
Work in a non-science role/sector outside of academia	4	
Something else (PLEASE WRITE IN WHAT THIS WAS)	5	
Don't know	6	DP: ALLOW SINGLE CODE ONLY

ASK TO THOSE WHO HAD AN IDEA OF THEY WANTED TO DO (A6=1-2) AND A8 6

A9   How well would you say your PhD had prepared you in terms of being able to [TEXT SUB: RESPONSE FROM A8]?

Very well	1	
Quite well	2	
Not at all	3	
Don't know	4	

ASK TO THOSE WHO HAD AN IDEA OF THEY WANTED TO DO (A6=1-2) AND A8 6

A10   How clear were you about what attributes, skills and experience you needed to [TEXT SUB: RESPONSE FROM A8]?

PLEASE SELECT JUST ONE ANSWER

Completely clear	1	
Somewhat clear	2	
Neither clear nor unclear	3	
Somewhat unclear	4	
Completely unclear	5	
Don't know	6	

ASK ALL

A11   Did your PhD lead to a peer reviewed publication in a refereed journal?

PLEASE SELECT JUST ONE ANSWER

Yes	1	
No	2	
Don't know	3	

ASK TO THOSE WHOSE PHD DID NOT LEAD TO A PUBLICATION (A11=2)

A12   And why did your PhD not lead to a peer reviewed publication in a refereed journal?

WRITE IN	
Don't know	1

ASK ALL WHO HAD PAPERS PUBLISHED (A11=1)

A13   And how important do you feel the publication following your PhD was to you being able to take your next career step after completing your PhD?

PLEASE SELECT JUST ONE ANSWER

Very important	1	
Quite important	2	
Neither important nor unimportant	3	
Quite unimportant	4	
Very unimportant	5	
Don't know	6	

B Career History

ASK ALL

B1   Thanks for telling us about your PhD. We'd now like to build up a picture of what you have been doing since completing your PhD. So please can you tell us what you did immediately upon finishing your PhD, did you…?

IF FOLLOW-UP LOOP:
And what did you do next, did you…?
PLEASE SELECT JUST ONE ANSWER. IF YOU WERE DOING MORE THAN ONE THING PLEASE JUST SELECT WHAT YOU CONSIDER TO HAVE BEEN YOUR MAIN ACTIVITY AT THIS POINT.

Continue with a career in academic research	1	
Continue with a research career outside of academia	2	
Temporarily leave research	3	
Leave research for good	4	GO TO SECTION C

B1Dum   DUMMY VARIABLE, DO NOT ASK

Transition from one career in academic research to another career in academic research	1	

ASK IF LEFT RESEARCH TEMPORARILY (B1=3)

B2   Would you have preferred to remain in research at this point in your career?

PLEASE SELECT JUST ONE ANSWER

Yes	1	
No	2	
Don't know	3	

ASK IF LEFT RESEARCH TEMPORARILY (B1=3)

B3   What were the main reasons you decided to temporarily leave research at this point in your career?

PLEASE SELECT ALL THAT APPLY

Lack of job security	1	
Lack of funding	2	
Lack of (quality) careers advice	3	
Lack of tenured positions	4	
Lack for research posts in local area/unable to relocate to posts available	5	
Long working hours	6	
Experienced difficulties in balancing Personal/family commitments with work commitments	7	
Did not enjoy/poor performance at PhD	8	
Received a better job offer outside of research	9	
Experienced difficulties in publishing papers	10	
More money/better pay available outside of research	11	
You did not think you would receive enough recognition or reward by staying in research	12	

Found a career in research too competitive	13	
You realised your career aspirations were not realistic	14	
Not aware of anyone with a similar background to you having a successful career in research	15	
Not enough support available to make next career step	16	
Other (WRITE IN)	17	
Don't know	18	DP: ALLOW SINGLE CODE ONLY

ASK IF LEFT RESEARCH TEMPORARILY (B1=3)

B4   Which of the following best describes what you were doing after finishing you PhD?

IF FOLLOW-UP LOOP:
Which of the following best describes what you were doing when you temporarily left research?
PLEASE SELECT JUST ONE ANSWER

Working full time for an employer in a paid role 30 or more hours per week	1	
Working part time for an employer in a paid role less than 30 hours per week	2	
Self-employed	3	
Unemployed and looking for work	4	
Unemployed and not looking for work	5	
Undertaking other education or training not related to previous research experience	6	
Other (WRITE IN)	7	
Don't know	8	

ASK IF WORKING FOR AN EMPLOYER OR IN AN UNPAID ROLE (B4=1-2) OR WERE IN A RESEARCH CAREER OUTSIDE OF ACADEMIA (B1=2)

B5   What was the name of your employer at this time?

WRITE IN		
Prefer not to say	1	

ASK IF WORKING FOR AN EMPLOYER OR IN AN UNPAID ROLE (B4=1-2)

B6   In the role you went into immediately after your PhD, what was your job title? What were your main duties or responsibilities?

IF FOLLOW-UP LOOP:
And what was your job title? What were your main duties or responsibilities?

WRITE IN		
Prefer not to say	1	

ASK IF IN A RESEARCH CAREER (B1=1-2)

B7   In the role you went into immediately after your PhD, what was your job title?

IF FOLLOW-UP LOOP:
And what was your job title?
PLEASE SELECT JUST ONE ANSWER

Early career fellowship (immediate post-PhD)	1	
IF FIRST ITERATION OF LOOP: Short term post-doctoral appointment (up to 6-12 months)	12	
IF FOLLOW UP LOOP: Intermediate career fellowship (3 to 6 years post-doc, to establish research independence)	2	
IF FOLLOW UP LOOP: Senior career fellowship (more than 6 years post-doc experience, for those with proven research independence)	3	
IF FOLLOW UP LOOP: Principal Investigator	4	
Teaching/Lectureship post	5	
Research Technician	6	
Post-doctoral Research Assistant	7	
Research Project Lead	8	
Health care/medical staff	9	
Other (WRITE IN)	10	
Don't know	11	

ASK IF ENTERED SHORT TERM POST-DOCTORAL APPOINTMENT (B7=12)

B7A   And as part of this short term appointment, were you working in your PhD supervisor's research group?

PLEASE SELECT JUST ONE ANSWER

Yes	1	
No	2	

ASK IF EMPLOYED OR SELF EMPLOYED AND LEFT RESEARCH TEMPORARILY (B4=1-3)

B8   Which of the following best describes the sector that you were working in?

Primary, utilities and manufacturing	1	
Construction	2	
Wholesale and retail	3	
Hotels and restaurants	4	
Transport and communications	5	
Financial and business services	6	
Public admin, education, health and other services	7	
Other (PLEASE WRITE IN)	8	
Don't know	9	

ASK IF STARTED A RESEARCH CAREER OUTSIDE OF ACADEMIA (B1=2)

B9   And which of the following best describes the sector in which you were pursuing a research career at this point?

Commercial/industry	1	
Charity	2	
NHS	3	
Other public sector organisation	4	
Other (PLEASE WRITE IN)	5	

ASK IF EMPLOYED (B1=1-2) OR HAD A RESEARCH CAREER (B1=1-2)

B10   Which of the following best describes the basis on which you were working?

PLEASE SELECT JUST ONE ANSWER

On a fixed term contract lasting 12 months or longer	1	
On a fixed term contract lasting less than 12 months	2	
On a permanent or open ended contract	3	
On another basis	4	
Don't know	5	

ASK IF REMAINED IN RESEARCH (B1=1-2)

B11   Which of the following responsibilities did you have when you were working [TEXT SUB IF B1=1: in this academic research role] [TEXT SUB IF B1=2: in this research role outside of academia]?

PLEASE SELECT ALL THAT APPLY

Directing/leading research inc. independent research	1	
Contributing to research led by others	2	
Shaping research strategies	3	
Regulating research	4	
Lecturing/teaching	5	
Supervising other researchers/students	6	
Mentoring	7	
Data analysis	10	
Other (WRITE IN)	8	
Don't know	9	DP: ALLOW SINGLE CODE ONLY

B12   How easy did you find this initial transition from your PhD to [TEXT SUB IF B1=1: another research role in academia] [TEXT SUB IF B1=2: a research role outside of academia]?

How easy did you find this transition to [TEXT SUB IF CURRENT ITERATION OF B1=1 AND PREVIOUS ITERATION OF B1=1: another] [TEXT SUB IF CURRENT ITERATION OF B1=1 research role within academia] [TEXT SUB IF CURRENT ITERATION OF B1=2 AND PREVIOUS ITERATION OF B1=2: another] [TEXT SUB IF CURRENT ITERATION OF B1=2 research role outside of academia]?

PLEASE SELECT JUST ONE ANSWER

Very easy	1	
Fairly easy	2	
Not very easy	3	
Not at all easy	4	
Don't know	6	

B13   And why do you say that it was [B12 ANSWER]?

WRITE IN	
Don't know	1

B14   For how long were you [TEXT SUB IF B1=1: in this academic research role] [TEXT SUB IF B1=2: in this research role outside of academia] [TEXT SUB IF B1=3: temporarily doing something outside of research]?

PLEASE WRITE IN THE NUMBER OF YEARS OR SELECT ONE OF THE OPTIONS BELOW

Less than six months	1	
Between six months and up to one year	2	
Can't remember	3	

B15   And is this what you are doing now?

Yes	1	GO TO SECTION D
No	2	GO TO B1

DP – REPEAT LOOP BACK TO B1 UNTIL B15=1

C Leaving research for good

ASK IF LEFT RESEARCH FOR GOOD (B1=4)

C1   And what were the main reasons you decided to leave a career in research for good?

PLEASE SELECT ALL THAT APPLY

Lack of job security	1	
Lack of funding	2	
Lack of (quality) careers advice	3	
Lack of tenured positions	4	
Lack of research posts in local area/unable to relocate to posts available	5	
Long working hours	6	
Lack of flexible working hours (e.g. part-time working)	7	
Experienced difficulties in balancing Personal/family commitments with work commitments	8	
Did not enjoy/poor performance at PhD	9	
Received a better job offer outside of research	10	
Experienced difficulties in publishing papers	11	
More money/better pay available outside of research	12	
You did not think you would receive enough recognition or reward by staying in research	13	
Found a career in research too competitive	14	
You realised your career aspirations were not realistic	15	
Not aware of anyone with a similar background to you having a successful career in research	16	
Decided to change career/pursue other career options	17	
Other (WRITE IN)	18	
Don't know	19	DP: ALLOW SINGLE CODE ONLY

C2   QUESTION DELETED

ASK IF LEFT RESEARCH FOR GOOD (B1=4)

C3   In which year did you leave research altogether?

PLEASE WRITE IN THE YEAR OR SELECT ONE OF THE OPTIONS BELOW

Less than a year ago	1	
Between 1 and 4 years ago	2	
Between 5 and 10 years ago	3	
More than 10 years ago	4	
Can't remember	5	

ASK IF LEFT RESEARCH FOR GOOD (B1=4)

C4   Which of the following best describes what you are doing now?

PLEASE SELECT JUST ONE ANSWER

Working full time for an employer in a paid role 30 or more hours per week	1	
Working part time for an employer in a paid role less than 30 hours per week	2	
Self-employed	3	
Unemployed and looking for work	4	
Unemployed and not looking for work	5	
Undertaking other education or training not related to previous research experience	6	
Other (WRITE IN)	7	
Don't know	8	

ASK IF (SELF) EMPLOYED (C4=1-3)

C5   Which of the following best describes the sector in which you are currently working?

PLEASE SELECT JUST ONE ANSWER

Primary, utilities and manufacturing	1	
Construction	2	
Wholesale and retail	3	
Hotels and restaurants	4	
Transport and communications	5	
Financial and business services	6	
Public admin, education, health and other services	7	
Other (Please Specify)	8	
Don't know	9	

ASK IF EMPLOYED (C4=1-2)

C6   And what is your job title? What are your main duties or responsibilities?

WRITE IN		
Prefer not to say	1	

ASK IF (SELF) EMPLOYED (C4=1-3)

C7   To what extent have you applied any of the skills, knowledge or experience you gained during your PhD in this current role?

PLEASE SELECT JUST ONE ANSWER.

To a large extent	1
To some extent	2
Not at all	3
Don't know	4

ASK IF APPLIED ANY OF THE SKILLS ACQUIRED AS A RESULT OF PHD (C7=1-2)

C8   What skills have you applied in this role that you gained during your PhD?

DP INSTRUCTION: ONLY SHOW CODES SELECTED AT A5

	Yes	No
Research skills within you the discipline you were studying	1	2
Research skills outside of the discipline you were studying	1	2
Technical skills (e.g. equipment)	1	2
Research management skills	1	2
Time management skills	1	2
Problem solving skills	1	2
Finance management skills	1	2
Communication skills	1	2
People management skills	1	2
Collaborating with others outside of academia	1	2
Applying for grants	1	2
Team working skills	1	2
Project management skills	1	2
Dedication and commitment	1	2
Analytical skills	1	2
Critical thinking	1	2
Self-confidence	1	2
Other (WRITE IN)	1	2

ASK IF LEFT RESEARCH FOR GOOD (B1=4)

C9   Do you have any plans to return to a career in research in either an academic or non-academic environment in the future?

Yes	1	
No	2	
Don't know	3	

ASK IF PLAN TO RETURN TO RESEARCH IN FUTURE (C9=1)

C10   What support would you ideally need when considering a return to a career in research?

WRITE IN		
Prefer not to say	1	

D Reflections on career to date: careers advice, guidance and training

ASK ALL

We'd now like to understand a bit more about any careers advice, support or guidance you might have received **throughout your research career (i.e. including from when you were doing your PhD to IF STILL IN RESEARCH: today IF LEFT RESEARCH:** .up to the point you left research).

D1   Overall how much careers advice, support, guidance or training do you feel you have received throughout your research career to date?

PLEASE SELECT JUST ONE ANSWER

About the right amount	1	
A bit too much	2	
Not enough	4	
Don't know	7	

ASK ALL

D2   TEXT SUB IF DID NOT LEAVE RESEARCH FOR GOOD (ALL ITERATION OF B4 4): And overall how satisfied have you been with the quality of any careers advice, support, guidance or training you have received during your research career?

TEXT SUB IF LEFT RESEARCH FOR GOOD (ANY ITERATION OF B4=4): And thinking back to the time when you were pursuing a career in research, overall how satisfied would you say you were with the quality of any careers advice, support guidance or training you might have received at this time?

PLEASE SELECT JUST ONE ANSWER

Very satisfied	1	
Fairly satisfied	2	
Neither satisfied nor dissatisfied	3	
Fairly dissatisfied	4	
Very dissatisfied	5	
Did not receive any careers advice, support or guidance at any point during research career	6	GO TO QUESTION D6

D3   And during your research career which of the following types of careers advice, support, guidance or training have you used/received?

PLEASE SELECT ALL THAT APPLY

D4   And which type of careers advice, support, guidance or training have you found the most useful?

PLEASE SELECT JUST ONE ANSWER
DP INSTRUCTION – ONLY SHOW OPTIONS SELECTED AT D3

	D3	D4
University careers service	1	1
Other formal careers advice service	2	2
Advice, support or guidance received from parents/siblings	3	3
Advice, support or guidance received from peers	4	4
Advice, support or guidance received from professionals in the field/fields of interest	5	5
Advice, support or guidance received from a previous employer or your employer during this time	6	6
Performance reviews/development plans/appraisals	7	7
Advice, support or guidance received from Medical Research Council	8	8
Advice, support or guidance received from other Research Councils	9	9
Advice, support or guidance received from other UK Educational/Scientific charity (including The Wellcome Trust, Cancer Research UK, British Heart Foundation or Other UK Educational/Scientific charity)	10	10
Training course provided by academic institution you worked for	11	11
Training course provided by another academic institution	12	12
Training course provided by another organisation	13	13
Mentoring	14	14
Online training	15	15
Something else (WRITE IN)	16	16
No-one [DP: ALLOW SINGLE CODE ONLY]	17	17
Don't know [DP: ALLOW SINGLE CODE ONLY]	18	18

ASK ALL WHO RECEIVED FORMAL TRAINING D3=11-13, 15

D5   What topics were covered during this training that you received during your research career?

PLEASE SELECT ALL THAT APPLY

Research skills within your own discipline	1	
Research skills outside your own discipline	2	
Technical skills (e.g. equipment)	3	
Research management skills	4	
Time management skills	5	
Problem solving skills	6	
Finance management skills	7	
Communication skills	8	
People management skills	9	
Collaborating with others outside of academia	10	
Applying for grants	11	
Leadership skills	12	
Project management skills	13	
Other (WRITE IN)	14	
Don't know	15	DP: ALLOW SINGLE CODE ONLY

ASK ALL

D6   How easy or difficult was it to access careers advice, support, guidance or training during your research career?

PLEASE SELECT JUST ONE ANSWER

Very easy	1	
Fairly easy	2	
Fairly difficult	3	
Very difficult	4	
Don't know	5	

D7   QUESTION DELETED

ASK ALL

D8   What, if anything, could have been improved about the careers advice, support, guidance or training on offer/ that you received during your research career?

WRITE IN		
Don't know	1	

ASK ALL

D9 Did you undertake any placements during your research career? (e.g. a period of time spent overseas, in industry or at another research centre).

PLEASE SELECT JUST ONE ANSWER

Yes	1	
No	2	
Don't know	3	

ASK IF NOT TAKEN PART IN OR COMPLETED ANY PLACEMENTS OR PARTNERSHIPS (D9=2)

D10 Why did you not undertake any placements during your research career?

PLEASE SELECT ALL THAT APPLY.

Did not have enough time to complete placements	1	
Wasn't aware that placements were available	2	
Insufficient funds	3	
Lack of resources	4	
Other (WRITE IN)	5	
Don't know	6	DP: ALLOW SINGLE CODE ONLY

ASK IF TOOK PART IN OR COMPLETED ANY PLACEMENTS OR PARTNERSHIPS OUTSIDE INSTITUTION (D9=1)

D11 How did you benefit from the placements undertaken during your research career?

PLEASE SELECT ALL THAT APPLY.

Learned new skills	1	
Accessed resources e.g. data, samples	2	
Gained relevant work experience	3	
Developed collaborations with fellow researchers/ potential employers	4	
Enhanced communication skills	5	
Gained further knowledge within chosen field	6	
Had an impact upon career progression/development in my chosen career path	7	
Broadened my understanding and experience	8	
Other (WRITE IN)	9	
Don't know	10	DP: ALLOW SINGLE CODE ONLY

D12 QUESTION DELETED

D13 Apart from any training or placements already discussed what, if anything did you do during your research career to actively enhance your CV and build it up to a higher level?

WRITE IN		
Don't know	1	
Nothing	2	

E Reflections on career to date: funding and outputs

ASK ALL
We'd now like to ask a few questions about any funding applications you made or outputs you produced during your research career (i.e. including from when you were doing your PhD to IF STILL IN RESEARCH: today IF LEFT RESEARCH: up to the point you left research.

ASK ALL
E1   During your research career to date roughly how many peer reviewed papers have you had published in refereed journals? Please provide an answer for first, middle and last author peer reviewed papers.

	PLEASE WRITE IN NUMBER	
First author published papers		Don't know
Middle author published papers		Don't know
Last author published papers		Don't know

E2   DELETED

E3   DELETED

ASK ALL WHO COMPLETED AN MRC PHD (S1=1)
E4   What impact did completing a MRC sponsored PhD have on your research career?

WRITE IN	
Don't know	1

ASK ALL WHO APPLIED FOR CDA (S1=2)
E5   What was the outcome of your application for a MRC Career Development Award (CDA) in between 1995 and 2004?

PLEASE SELECT JUST ONE ANSWER

Successful and accepted award	1
Successful but declined award	2
Shortlisted but unsuccessful	3
Withdrawn	4
Rejected	5
Don't know	6

ASK ALL WHO APPLIED FOR CDA (S1=2) AND RECEIVED E5=1

E6   What impact did receiving the MRC Career Development Award (CDA) have on your research career?

WRITE IN	
Don't know	1

ASK ALL WHO APPLIED FOR CDA (S1=2) AND NOT RECEIVED E5=3 OR 5

E7   What impact did **not** receiving the MRC Career Development Award (CDA) have on your research career?

WRITE IN	
Don't know	1

ASK ALL WHO APPLIED FOR CDA (S1=2) AND NOT RECEIVED E5=3 OR 5

E8   And as you were not successful in receiving the MRC Career Development Award (CDA) what did you do instead?

WRITE IN	
Don't know	1

ASK ALL WHO APPLIED FOR CDA (S1=2) AND DECLINED/WITHDREW E5=2 OR 4

E9   And as you [TEXTSUB: E5=2 declined, E5=withdrew the application for] the MRC Career Development Award (CDA) what did you do instead?

WRITE IN	
Don't know	1

ASK ALL WHO APPLIED FOR PLT'S (S1=3)

E10   What impact did holding an MRC unit/institute Programme Leader Track (PLT) position have on your research career?

WRITE IN	
Don't know	1

ASK ALL WHO RECEIVED A RESEARCH GRANT (S1=4)

E11   What impact did receiving a MRC research grant have on your research career?

WRITE IN	
Don't know	1

ASK ALL

E12   Aside from [s1=1 your MRC sponsored PhD, S1=2 your MRC Career Development Award (CDA), S1=3 your MRC unit/institute PLT position, s1=4 the MRC research grant] did you apply for any funding during your research career?

PLEASE SELECT ALL THAT APPLY

ASK ALL WHO GAVE A RESPONSE AT E12 (E12=1-7)

E13   And during your research career which of these applications for funding were successful?

PLEASE SELECT ALL THAT APPLY
DP INSTRUCTION - ONLY SHOW OPTIONS SELECTED AT E11

	E12	E13
Early career fellowship (immediate post-PhD)	1	1
Intermediate career fellowship (3 to 6 years post-doc, to establish research independence)	2	2
Senior career fellowship (more than 6 years post-doc experience, for those with proven research independence)	3	3
3 year project grant	4	4
5 year project grant	5	5
Research centre grant	6	6
Other (WRITE IN)	7	7
None of these [DP: ALLOW SINGLE CODE ONLY]	8	8
Don't know [DP: ALLOW SINGLE CODE ONLY]	9	9

ASK IF APPLIED FOR ANY FUNDING (E12=1-7)

E14   From which sources did you apply for funding during your research career?

PLEASE SELECT ALL THAT APPLY

Institution where I completed my PhD or CDA or research grant	1	
Institution where completed other research	2	
RESEARCH COUNCILS		
Biotechnology and Biological Sciences Research Council (BBSRC)	3	
Engineering and Physical Sciences Research Council (EPSRC)	4	
Economic and Social Research Council (ESRC)	5	
Medical Research Council (MRC)	6	
Natural Environment Research Council (NERC)	7	
Science and Technology Facilities Council (STFC)	8	
UK Educational/Scientific charity (including The Wellcome Trust, Cancer Research UK, British Heart Foundation or Other UK Educational/Scientific charity)	9	
Other competitively-awarded scholarship or award (WRITE IN)	10	
EU/EC funded	11	
Support from my employer or an industry body	12	
National Institute for Health Research (NIHR)	15	
Other (WRITE IN)	13	
Don't know	14	DP: ALLOW SINGLE CODE ONLY

ASK IF RECEIVED ANY FUNDING (E13 = 1-7)

E15   From which sources did you receive funding during your research career?

PLEASE SELECT ALL THAT APPLY

Institution where I completed my PhD	1	
Institution where completed other research	2	
RESEARCH COUNCILS		
Biotechnology and Biological Sciences Research Council (BBSRC)	3	
Engineering and Physical Sciences Research Council (EPSRC)	4	
Economic and Social Research Council (ESRC)	5	
Medical Research Council (MRC)	6	
Natural Environment Research Council (NERC)	7	
Science and Technology Facilities Council (STFC)	8	
UK Educational/Scientific charity (including The Wellcome Trust, Cancer Research UK, British Heart Foundation or Other UK Educational/Scientific charity)	9	
Other competitively-awarded scholarship or award (WRITE IN)	10	
EU/EC funded	11	
Support from my employer or an industry body	12	
National Institute for Health Research (NIHR)	15	
Other (WRITE IN)	13	
Don't know	14	DP: ALLOW SINGLE CODE ONLY

E16   DELETED

F Reflections on career to date: overall satisfaction

ASK ALL EXCEPT THOSE WHO LEFT RESEARCH IN FIRST OR SECOND ITERATION OF SECTION B (ALL EXCEPT
B1_1=4 OR B1_2=4)

F1   We'd now like to ask you some questions about your IF STILL IN RESEARCH: current IF LEFT RESEARCH: most
      recent research role. In this role, to what extent do you feel you receive reward and recognition for the work
      you do/did?

   PLEASE SELECT JUST ONE ANSWER.

Receive/d lots of reward/recognition	1
Receive/d some reward/recognition	2
Do/did not receive any reward/recognition	3
Don't know	4

ASK ALL EXCEPT THOSE WHO LEFT RESEARCH IN FIRST OR SECOND ITERATION OF SECTION B (ALL EXCEPT
B1_1=4 OR B1_2=4)

F2   And again thinking about your IF STILL IN RESEARCH: current IF LEFT RESEARCH: most recent research role,
      how satisfied or dissatisfied are you to have reached this role in your career?

   PLEASE SELECT JUST ONE ANSWER

Very satisfied	1
Fairly satisfied	2
Not very satisfied	3
Not at all satisfied	4
Not applicable	5
Don't know	6

ASK IF DISSATISFIED (F2 =3 or 4):

F3   Why do you say that?

WRITE IN	
Prefer not to say	X

ASK ALL EXCEPT THOSE WHO LEFT RESEARCH IN FIRST OR SECOND ITERATION OF SECTION B (ALL EXCEPT
B1_1=4 OR B1_2=4)

F4   Overall how easy or difficult have you found it to pursue the research career path/job role you wanted?

   PLEASE SELECT JUST ONE ANSWER

Very easy	1
Fairly easy	2
Fairly difficult	3
Very difficult	4
Not applicable	5
Don't know	6

ASK IF HAVE NOT FOUND IT EASY (F4=3-4):

F5   Why would you say that you have found it difficult to pursue the research career path/job role you wanted?

WRITE IN	
Prefer not to say	X

ASK ALL EXCEPT THOSE WHO LEFT RESEARCH IN FIRST OR SECOND ITERATION OF SECTION B (ALL EXCEPT B1_1=4 OR B1_2=4)

F6   What could have been done to make it easier for you to pursue a career in research?

PLEASE SELECT ALL THAT APPLY

More frequent funding opportunities	1	
Provided with a greater amount of funding	2	
Opportunities for career breaks and flexible working (including maternity leave)	3	
Greater stability within job roles	4	
More flexibility in terms of mobility/less pressure to re-locate	5	
Less intense working hours	6	
Opportunities to work part-time	7	
Less competition	8	
Larger number of job roles available	9	
More variance in job roles available	10	
Clearer career paths	11	
More guidance and/or support in making career choices	12	
Some other reason (WRITE IN)	13	
Don't know	14	

ASK ALL EXCEPT THOSE WHO LEFT RESEARCH IN FIRST OR SECOND ITERATION OF SECTION B (ALL EXCEPT B1_1=4 OR B1_2=4)

F7   At which, if any, transition points in your research career history would you have benefitted from additional advice, support, guidance or training?

PLEASE SELECT ALL THAT APPLY

From PhD to post-doc	1
From one post-doc to another post-doc	2
From post-doc to research independence	3
Transitioning to Principal Investigator	4
From post-doc/early career fellowship to teaching/lecturing post	5
Returning to research after a break	6
Changing between research disciplines/specialisms	7
Moving between academia and industry	8
Other (WRITE IN)	9
None [DP: ALLOW SINGLE CODE ONLY]	10
Not Applicable [DP: ALLOW SINGLE CODE ONLY]	11
Don't know [DP: ALLOW SINGLE CODE ONLY]	12

ASK IF RESPONSE OF TRANSITION POINT GIVEN (F7 =1-9):

F8   What additional advice, support, guidance or training would have been useful?

University careers service	1
Other formal careers advice service	2
Advice, support or guidance received from parents/siblings	3
Advice, support or guidance received from peers	4
Advice, support or guidance received from professionals in the field/fields of interest	5
Advice, support or guidance received from a previous employer or your employer during this time	6
Performance reviews/development plans/appraisals	7
Advice, support or guidance received from Medical Research Council	8
Advice, support or guidance received from other Research Councils	9
Advice, support or guidance received from other UK Educational/ Scientific charity (including The Wellcome Trust, Cancer Research UK, British Heart Foundation or Other UK Educational/Scientific charity)	10
Training course provided by academic institution you worked for	11
Training course provided by another academic institution	12
Training course provided by another organisation	13
Mentoring	14
Online training	15
Something else (WRITE IN)	16
No-one [DP: ALLOW SINGLE CODE ONLY]	17
Don't know [DP: ALLOW SINGLE CODE ONLY]	18

F9   We are interested to know whether you consider yourself proactive or reactive when it comes to managing your career. Please rate yourself on the following scale where 1 means you have been very proactive e.g. planning and managing your career in advance and 5 means you have been very reactive e.g. responding to opportunities only when they arise.

PLEASE SELECT JUST ONE ANSWER

Proactive	1	
	2	
	3	
	4	
Reactive	5	
Don't know	6	

F10   How important have the following been in enabling you to progress your research career to date?

PLEASE SELECT JUST ONE ANSWER PER ROW

	Very important				Not at all important	DK
_1 Skills gained through training or research	1	2	3	4	5	6
_2 Experience gained through training or research	1	2	3	4	5	6
_3 Advice, support, guidance or training received during research career	1	2	3	4	5	6
_4 Placements or partnerships	1	2	3	4	5	6
_5 Opportunity to publish work	1	2	3	4	5	6
_6 Successful in securing funding	1	2	3	4	5	6

F11   Were there any other reasons that were important in enabling you to progress your research career?

WRITE IN		
Don't know	1	

G Demographic

The MRC has a strong commitment to actively promoting equality and diversity across all policy and practice areas. Therefore we would like to ask a few questions about yourself which will be used for classification purposes only.

G1   I'd now like to ask you some questions about yourself.
        Are you male or female?

PLEASE SELECT JUST ONE ANSWER

Male	1
Female	2

G2   DELETED

ASK ALL
G3   Which of the following age brackets do you fall into?

PLEASE SELECT JUST ONE ANSWER

25-30	1
30-34	2
35-39	3
40-44	4
45-49	5
50-54	6
55+	
Don't know	7
Prefer not to say	8

DP INSTRUCTION: FORCE THOSE GIVING A DOB AT G2 INTO CORRESPONDING AGE BAND AT G3.

G4   QUESTION DELETED
G5   QUESTION DELETED

ASK ALL
G6   The Equality Act defines a person as having a disability if he or she 'has a physical or mental impairment that has a 'substantial' and 'long-term' negative effect on your ability to do normal daily activities'. Do you have such a disability?

Yes	1
No	2
Prefer not to say	3

ASK ALL

G7   And, how would you describe your ethnic group?

PLEASE SELECT ONE OPTION

White (including British, Irish, any other white background)	1
Mixed (including white & black Caribbean, white & black African, white & Asian, any other mixed background)	1
Asian or Asian British (Indian, Pakistani, Bangladeshi, any other Asian background)	2
Black or Black British (Caribbean, African, any other Black background)	3
Other ethnic groups (Chinese, any other ethnic group)	4
Don't know	5
Prefer not to say	6

ASK ALL

G8   And, finally how would you describe your nationality?

PLEASE SELECT ONE OPTION

UK national	1
From within the EU (non-UK national)	2
From outside of the EU	3
Don't know	4
Prefer not to say	5

H Re-contact section

H1   DELETED
H2   DELETED
H3   DELETED
H4   DELETED

H5   Thank you very much for taking the time to complete this online survey for us. As part of this research study
      we will be conducting some further telephone interviews and we would be very interested to explore in
      greater detail some of the issues covered in this survey with you. Would you be willing to be contacted for a
      follow up interview?

Yes	1	
No	2	

ASK ALL

H6   The Medical Research Council uses career case studies on their website as part of their careers guidance
      section Would you be willing for the MRC to use the information you have provided today towards one of
      these case studies or to contact you for a follow up?

Yes	1	
No	2	

ASK ALL

H7   And would you be willing to be contacted by the Medical Research Council about any future studies they
      undertake, the results of which would be used to inform strategy and policy development.

Yes	1	
No	2	

 ASK ALL

H8   Sometimes it is necessary to call people back to check the answers they have given for quality control
      purposes. Would you be willing to be called back if we need to check any of your answers?

Yes	1	
No	2	

IF WILLING TO BE RE-CONTACTED FOR ANY REASON

H9   As you have said you are willing to be re-contacted can I just check that the contact details we have for you
      are correct?

Your name: DISPLAY CONTACT NAME. Is that correct?

Yes – correct	1	
No – incorrect (Please type in correct name)	2	

IF HAVE EMAIL (FROM SAMPLE)
Your email address: DISPLAY CONTACT ADDRESS. Is that correct?

Yes – correct	1	
No – incorrect (Please type in correct email address)	2	

IF NO EMAIL ADDRESS
What is your email address?

WRITE IN EMAIL ADDRESS

IF NO TELEPHONE NUMBER
What is the best telephone number to contact you on?

WRITE IN TELEPHONE NUMBER

ASK ALL

H10   And finally, do you have any further comments? Is there anything else that you would like to tell us about your research career that hasn't already been covered?

PLEASE WRITE IN		
No further comments	1	

THANK RESPONDENT AND CLOSE INTERVIEW

Finally I would just like to confirm that this survey has been carried out under IFF instructions and within the rules of the MRS Code of Conduct. Thank you very much for your help today.

9 Appendix 3: Topic guide for qualitative interviews

MRC Next Destinations Survey

J5373   Date   Telephone

Respondent name	
Unique ID	
Telephone number	
Email address	
Date and time for the interview	

A Introduction to the research

- ASK TO SPEAK WITH NAMED CONTACT
- THANK RESPONDENT FOR AGREEING TO TAKE PART
- INTRODUCE SELF
- INTRODUCE IFF RESEARCH
- INTRODUCE EVALUATION:

  IFF RESEARCH HAS BEEN COMMISSIONED BY MRC (THE MEDICAL RESEARCH COUNCIL) TO CONDUCT A PROGRAMME OF RESEARCH EXPLORING DIFFERENT CAREER PATHWAYS OF PHD STUDENTS AND POSTDOCTORAL FELLOWS WHO HAVE BEEN FUNDED BY THE MRC, AS WELL AS APPLICANTS TO THE COUNCIL'S PROGRAMME LEADER TRACKS (PLT) PROGRAMME AND CAREER DEVELOPMENT AWARD (CDA) AND RESEARCH GRANT HOLDERS.

  YOU HAVE RECENTLY TAKEN PART IN THE ONLINE SURVEY EXPLORING YOUR CAREER IN MEDICAL RESEARCH AND WE ARE NOW LOOKING TO EXPLORE IN MORE DEPTH YOUR EXPERIENCES THROUGHOUT YOUR CAREER.

- CONFIDENTIALITY
- RECORDING – PERMISSION TO RECORD

REASSURANCES TO COVER
Please note that all data will be reported anonymously and your answers will not be reported to MRC or anyone else, in any way that would allow you to be identified.
Participating in the research will not affect any current dealings with or funding from MRC
The interview will last approximately 30 minutes

Information from online interview – (to steer interviewer through discussion guide)

TRANSITIONED WITHIN ACADEMIA (C1) Responses to B1 (B1=1 TO B1=1)	
MOVED INTO A CAREER OUTSIDE OF RESEARCH AT ANY POINT (C2) Responses to B1 (B1=2 TO B1=2)	
HAD A CAREER BREAK AT ANY POINT AND/OR LEFT RESEARCH ALTOGETHER) (C3) NOTE IF RETURNED TO RESEARCH FOLLOWING BREAK Will ask C3 twice if had both a break from research and left for good Responses to B1 (B1=3 AND/OR 4)	

Summary of Online Interview

Two to three lines of text summarising the individual's career path, what they are currently doing, key transitions along the way and thoughts on career path taken.

E.g. This respondent knew upon completing their PhD that they wanted to become a PI. They have undertaken four transitions since completing their PhD and whilst they are currently working as a Facility Manager within academic research, the respondent has pursued a research career outside of academia for a period of time. The respondent struggled with the increased responsibilities that came with the role of Post-doctoral Research Assistant straight after their PhD and found they received more support and worked in a more regulated/organised environment outside of academia.

Key areas to probe:
What support would have helped in transition from PhD to Post-doctoral Research Assistant?
And from role outside of academia back into academic research (Post-doctoral Research Assistant)?
What further support did they require from PI? Is there anything else that would have helped to ease the difficulty of these transitions?
Why did they find transition into non-academic research easier?
Why did they decide to return to an academic research role?

Example of areas will look at from online interview before calling:
Whether still in research/left research
Current role (Specific details of current role)
Cohort
A6 and A8: Whether any idea what wanted to do next, Role wanted to do
Career History (from section B): How many career loops, whether had a career break/left research, whether worked in academic/non-academic research, roles held both within and outside of research)
B12 and B13 – any transitions found difficult/easy and why
F7: transition point would have benefited from additional advice, support, guidance or training
D6: Ease of accessing careers advice
F4: Overall ease of pursuing research career

B Early career aspirations

I'd like to start by asking a bit more about your early career and how you came to decide what you wanted to do longer term.

B1   When completing the online survey you stated that upon completing your PHD your ultimate career goal/ aspiration was [RESPONSE TO A8]. Can you tell me a bit more about how you made this decision?
- How did you arrive at this decision? What research did you do into careers?
- IF DID RESEARCH INTO CAREER: Where did you go to get the information/advice? What resources did you access? Did you use any online or digital resources?
- At what point did you start thinking about..?
- What you wanted to do after completing your PhD;
- Your longer term career goal(s)
- Who, if anyone, did you speak to about career planning? How easy or difficult was it to access information at this time? How reliable did you feel this advice was? How did you gauge how reliable this advice was?
- IF SPOKE TO SOMEONE: What information or advice did they give you? How helpful was this information when deciding what you wanted to do longer term?
- What other career options did you consider at this time? Why? Why did you decide to pursue a career as a [RESPONSE TO A8] over other career paths?

B2   And can you tell me a bit more about how you initially planned to reach this goal? What did you think were the main career steps you would have to take?
- How clear was it to you about what you had to do?
- How long did you think it would take for you to reach your career goal?
- How easy or difficult did you expect your future career path to be? Why?
- What challenges did you expect to face?

C Career transitions and career breaks

During the online survey you tracked your career path in detail for us. For this interview I'd just like to concentrate on some of the key transitions you have made during your career.

ASK IF TRANSITIONED WITHIN ACADEMIA

C1   During your career you have moved directly from one research role within academic research to another. Can you describe this to me in your own words, what this has been like?

INTERVIEWER TO ENSURE THE FOLLOWING AREAS ARE COVERED:
- How did you decide when to move and which role to move into?
- What types of issues did you have to consider when choosing which role to move into? PROBE FOR: FUNDING, MOBILITY/GEOGRAPHY, FAMILY COMMITMENTS, FORMAL SUPPORT MECHANISMS, OPPORTUNITIES AVAILABLE
- At this point in your career how aware were you of all research career options available to you?
- How easy or difficult was it to move into the type of role you wanted? Why?
- IF DIFFICULT: What were the main challenges? What types of difficulties did you face and how did you overcome them?
- Have you had to make any concessions/sacrifices to be able to move from one role within academia to another? IF YES: Tell me more about these? What sacrifices have to had to make and why? What impact did these sacrifices have? On your personal life? To your career?
- What have been the easier career moves to make and why?
- Can you tell me about any careers advice, support or guidance you received when moving from one position within academic research to another?
- Who offered support at these transition stages? What sort of careers advice, support or guidance did they offer? Did you use any online or digital resources?
- How did this careers advice, support or guidance help you? How reliable did you feel this advice was? How did you gauge how reliable this advice was?
- To what extent did you drive your own career development within academic research versus doing what others have advised, or the number of types of opportunities available to you? Tell me more about this.
- What additional support or guidance would you have liked when moving from one research role within academic research to another?
- What would have made these transitions easier? How and why would this have helped? What else?

ASKED IF MOVED INTO A CAREER OUTSIDE OF RESEARCH AT ANY POINT

C2   During your career you have moved from a position within academic research to another research role but outside of academia. Can you describe to me in your own words how and why this move came about as well as how you would reflect on this part of your career?

INTERVIEWER TO ENSURE THE FOLLOWING AREAS ARE COVERED:
- What were your reasons for continuing in a research role but moving away from academia?
- How did you decide when to move and which role to move into?
- What types of issues did you have to consider when choosing which role to move into? PROBE FOR: FUNDING, MOBILITY/GEOGRAPHY, FAMILY COMMITMENTS, FORMAL SUPPORT MECHANISMS , TRANSFERRING SKILLS TO A NEW ENVIROMENT
- How easy or difficult was it to move into the type of role you wanted? Why?
- IF DIFFICULT: What were the main challenges? What types of difficulties did you face and how did you overcome them?
- Did you have to make any concessions/sacrifices moving away from academia? IF YES: Tell me more about these? What sacrifices have to had to make and why? What impact did these sacrifices have to your personal life? To your career?
- Can you tell me about any careers advice, support or guidance you received when moving away from a research role within academia?

- Who offered support at these transition stages? What sort of help, advice or support did they offer? Did you use any online or digital resources?
- How useful was this help, support or guidance?
- How reliable did you feel this advice was? How did you gauge how reliable this advice was?
- What would have made this transition away from academia easier? How and why would this have helped? What else.
- To what extent did you drive your own research career development outside of academia versus doing what others advised, or the number of types of opportunities available to you? Tell me more about this.
- How would you sum up this period when you were working in a research role, but outside of academia?
- Do you view it positively or negatively? Why? IF POSITIVE: How would you say this role outside of academia benefited your overall research career?
- How satisfied were you? What impact do you feel this role has had on future career success? On broadening your knowledge?

ASKED IF HAD A BREAK FROM RESEARCH AT ANY POINT (OR LEFT RESEARCH ALTOGETHER)

C3   At some point during your career you have moved away from research, either on a temporary or permanent basis. Can you tell me a bit more about how you reached this decision to have a break from/leave research altogether?

INTERVIEWER NOTE: IF RESPONDENT HAD BOTH A BREAK FROM RESEARCH AND LEFT RESEARCH ALTOGETHER PLEASE COLLECT INFORMATION ABOUT BOTH.

INTERVIEWER TO ENSURE THE FOLLOWING AREAS ARE COVERED:
- What were your reasons for taking a break from/leaving research altogether?
- What, in your mind were the pros and cons of leaving/taking a break from research?
- How easy or difficult was it to make that decision to leaving/taking a break? Why?
- Can you tell me about any careers advice, support or guidance you received when you started to consider leaving your research career? Please tell me about any advice provided in both relation to staying within research and moving away.
- Who offered careers advice, support or guidance? What sort of help, advice or support did they offer? Did you use any online or digital resources?
- How useful was this help, support or guidance?
- What if anything would have swayed you to remain in research? What else?
- Overall to what extent would you say your decision to leave research was entirely your choice and for reasons that were within your control? Why do you say this?

ASKED IF HAD A CAREER BREAK AND SINCE MOVED BACK INTO RESEARCH
- Why did you decide to return to a career in research when you did? What prompted you to do this?
- Who or what influenced your decision to return?
- How easy or difficult was it to make this decision to return? Why?
- Tell me about the careers advice, support or guidance you sought when thinking about returning to your research career.
- From who/where did you seek careers advice, support or guidance? Did you use any online or digital resources?
- What sorts of issues did you need support on? What else?
- What information was given to you?
- How easy or difficult was it to find the careers advice, support or guidance you needed? Why? How useful was the information you received?
- How reliable did you feel this advice was? How did you gauge how reliable this advice was?
- Overall how easy or difficult was it to actually go back into research?
- What challenges did you face?
- What are your thoughts on your decision to return to research? Have you made the right decision? Why/why not?
- How would you say your career break benefited your overall research career?

D Reflections on career to date

D1   Thinking about the whole of your research career, how clear has it been what has been expected of you within each role? Tell me more about this.
   - In which role(s) have expectations been made most clear?
   - And in which ones have they been less clear?
   - How do you think this has impacted on your research career?

D2   And throughout you career, how much reward and recognition do you feel you have received?
   - In what types of roles have you received most reward and/or recognition by your peers and your employer? Why do you think this is?
   - Are there any roles where you have not felt sufficiently rewarded or recognised? Which ones? Why do you think this is?
   - How important has receiving reward and recognition been to you throughout you career? Has this always been the case? Why/why not?
   - ASK IF PRINCIPAL INVESTIGATOR: How much support have you received to take responsibility for the development of your team?

D3   What support, funding mechanisms and recognition or reward is there for talented people who are essential to the delivery of research but who do not want to/don't become a Principal Investigator?
   - What could MRC do to encourage a culture change to support these individuals?
   - What could academic institutions do to establish incentives and a culture change to support these individuals?

D4   How would you sum up your research career to date?
   - How satisfied are you with what you have achieved?
   - How does what you are doing now compare to what you thought you'd be doing by this point when you first started thinking about/planning your career? Why?
     IF DIFFERENT IN ANY WAY: In what way is this different to what you expected to be doing? How do you feel about that?
   - What do you feel are the main hurdles or blockers to pursuing a research career?
   - What do you feel are the factors affecting why some people find it easy to pursue a career in research whereas others find it difficult?
   - You mentioned during the online survey that overall you had found it [EASY/DIFFICULT] to pursue a career in research, why was this?
   - IF BLOCKERS/DIFFICULTY FACTORS IDENTIFIED: How can these blockers/difficulties be reduced or eliminated?

D5   If you knew what you know now back when you were first setting out in your career after completing your PhD, what career path would you have taken? Why?
   - What careers advice would you give yourself? What would you say are the key issues you should think about when moving from one phase of your career to another?
   - What would you do differently? Why?
   - What has been the most valuable thing you have learnt about pursuing a career in research?
   - What would you say are the skills, personal characteristics and competencies needed to succeed?
   - How important is mobility and being able to move from one position to another to a successful career in research?
   - What has been the best bit of careers advice you have received and why? Where or from who did you get that advice?

D6   How do you feel MRC could improve career development support for early career researchers?
- What advice should they give? In what format should this be offered?
- At what point should they offer careers advice, support or guidance? Why?
- What could MRC do to reduce barriers for those moving from one stage of their career to the next?

D7   If MRC were able to provide early career researchers some additional funding at what point should they make this available?
- Why? How would additional funding at this stage in a research career help?
- What would the funding be used for?

D8   MRC are looking to produce some work to illustrate the different research career paths. This work is likely to include career pathway diagrams showing the different roles/options available at each career stage and how to progress from one role to another.
- Do you feel this would be of use? What do you think you might get out of it? When in your career would this have been most useful?
- How do you feel this should be developed? How can you see this working in practice?

E Final comments and wrap up

ASK ALL

E1   Throughout your research career what support could MRC have offered you? Does this support differ throughout the different stages of your career?
  - IF DIFFERS: How would this differ?

ASK ALL

E2   Finally, is there anything else you would like to tell MRC about your research career or research careers and pathways in general?

ASK ALL

E3   MRC are looking to develop some case studies and examples of research careers and career pathways. Would you be happy to be re-contacted again to become one of these specific case studies?

Yes	1	
No	2	IF POSSIBLE RECORD REASON:
Unsure	3	IF POSSIBLE RECORD REASON:

THANK RESPONDENT AND CLOSE INTERVIEW

I declare that this survey has been carried out under IFF instructions and within the rules of the MRS Code of Conduct.		
Interviewer signature:	Date:	
Finish time:	Interview Length	Mins

Contact details

Katie Oldfield, Catherine Riley, Erica Garnett and Helen Rossiter
IFF Research Ltd
Chart House
16 Chart Street
London N1 6DD
Tel +44(0)20 7250 3035

katie.oldfield@iffresearch.com
catherine.riley@iffresearch.com
erica.garnett@iffresearch.com
helen.rossiter@iffresearch.com