

Fit for the Future? Researcher Development and Research Leadership in the Social Sciences

Evidence Review

Prof. Matthew Flinders and Dr Alexandra Anderson, University of Sheffield,

April 2019

List of Acronyms

Executive Summary

1. Context
2. Focus
3. Aim
4. Methods
5. Findings
6. Discussion
7. References

List of Acronyms

AHRC	Arts and Humanities Research Council
ARMA	Association of Research Managers and Administrators
BAME	Black and Minority Ethnic
BIT	Behavioural Insights Team
CRAC	Careers Research and Advisory Service
CRASSH	Centre for Research in the Arts, Social Science and Humanities
CROS	Careers in Research Online Surveys
ECR	Early Career Researcher
ERC	European Research Council
FCO	Foreign and Commonwealth Office
FLIER	Future Leaders in Innovation, Enterprise and Research
GRC	Global Research Council
HEFCE	Higher Education Council for England
ISSRC	International Social Science Research Council
LERU	League of European Research Universities
LFHE	Leadership Foundation for Higher Education
NESTA	National Endowment Science, Technology and the Arts
PIRLS	Principal Investigators & Research Leaders Surveys
QAA	Quality Assurance Agency for Higher Education
REF	Research Excellence Framework
RDL	Researcher Development and Leadership
RLDP	Research Leadership Development Programme
RO	Research Organisation
ODHE	Organisational Development for Higher Education
PI	Principal Investigator
SciTS	Science of Team Science
SFC	Scottish Funding Council
SSRC	Social Science Research Council
SRHE	Society for Research into Higher Education
TEF	Teaching Excellence Framework
UKRI	United Kingdom Research and Innovation
WSSR	World Social Science Report

Executive Summary

There has never been a time when the potential role and impact of the social sciences was greater. It is now accepted that a host of complex societal challenges can only be understood and addressed through a deep understanding of social structures, social relationships and social institutions. At the same time, the creation of United Kingdom Research and Innovation (UKRI) and the government's plans to significantly increase research funding represents an ambitious commitment to retaining and developing the United Kingdom's global reputation for scientific excellence. The social sciences represent a central part of this exciting new agenda. It is, however, important to acknowledge that the research funding landscape and the expectations of research-users are changing. This transformation is reflected in a clear shift toward funding collaborative and challenge-orientated projects that reach across traditional disciplinary and professional boundaries. **Designing and delivering large, complex and team-based research projects of this nature – or even just operating as an effective member of these teams - demand skills and attributes that have generally not been cultivated or incentivised within the social sciences.**¹ This raises critical and urgent questions about researcher development and research leadership. It is in exactly this context that this evidence review was commissioned to answer six inter-related questions. These questions and a precis of the main findings is provided below.

RQ1. What is the current evidence base and academic knowledge of researcher development and research leadership in the social sciences?

1. The existing evidence base provides very little information about the specific topic of RDL.
2. Most research is focused on 'managerial' and 'organisation' leadership rather than research leadership
3. Many social scientists struggled with the concept of research leadership and why it mattered.
4. There is a heightened interest in the concept of 'collaborative' leadership in higher education in recent academic research.

RQ2. What is researcher development and research leadership and what evidence is there that they are emerging as a key issue?

1. Researcher development and research leadership capacities seek to provide the skills, competencies and support structures that researchers need to excel and it is built on a recognition that successful research endeavours facilitate the flow of people and ideas across disciplines, institutions and professions in order to lead and sustain a world-class research environment that delivers scholarly excellence and societal benefits.
2. It is difficult for social scientists to gain experience of planning or running large multi-disciplinary projects; and the evidence suggests that there is a need for social scientists who are able to work effectively with research users, and have experience working in non-academic research-relevant environments.
3. The International Social Science Council's focus on a multi-layered approach to building research leadership capacity and nurturing talent - with its emphasis on *individual*, *organisational* and *systemic* dimensions of change - emphasizes the need for RDL capacity building and is an example of 'best practice'.
4. A focus on researcher development and research leadership have formed a core component of UKRI's initial agenda and work plan (as seen in the launch of the 'Talent Fund' and 'Future Leaders Fellowships').

¹ See, for example, McLeish, T. and Strang, V. (2014). *Leading Inter-Disciplinary Research: Transforming the Academic Landscape*. London: Leadership Foundation for Higher Education; van der Boon, J., Kahmen, S. and Maes, K. (2018). *Delivering Talent: Careers of Researchers Inside and Outside Academia*. Leuven, Belgium: The League of European Research Universities (LERU).

RQ3. What does the current capacity framework look like - where are the gaps in provision?

1. The existing capacity-building structures are under-developed, fragmented and tend to focus predominantly on early career researchers. As a result, the most common elements associated with a successful research career tend to be luck and the existence of a supportive mentor.
2. The evidence suggests that researcher development provision within individual institutions is very often not 'fit for purpose' and that most leadership-related courses are primarily concerned with managerial leadership. As a result, research leaders in the social sciences generally receive very little or no formal leadership training or support and are generally expected to learn 'on the job' through trial-and-error.
3. Historically the research councils have adopted a rather laissez-faire approach to talent management and research leadership on the assumption that research organisations or scientific communities would ensure the correct blend of skills and competencies were in place.
4. It could be argued that if a gap exists in the current research infrastructure then it relates to mid-career and senior staff especially. The evidence calls attention to the need to focus on the full professional journey and critical transition points, rather than on any one specific career stage.

RQ4. What does the evidence suggest are the main obstacles or challenges to promoting researcher development and research leadership?

1. Academics are facing increased professional pressures and, in this context, investing time and energy in professional development is often seen as a luxury that cannot be afforded. This belief is evident especially amongst early career researchers, who often are employed in a succession of temporary contracts and as a result the prioritisation of securing their next academic post normally takes precedence over the development of their researcher skills.
2. Leading large and complex research grant applications is risky. It takes a lot of time and energy, but success is far from guaranteed. The evidence suggests that the reward and recognition frameworks in the social sciences create few incentives for taking on these roles or being involved in 'team science' projects.
3. The institutional architecture of higher education remains predominantly disciplinary-based (e.g. journals, departments, learned societies, REF, etc.) which makes inter-disciplinary work challenging to undertake and difficult to publish.
4. Despite a growing emphasis on fluidity and 'open knowledge processes', inter-sectoral mobility remains very difficult in the social sciences. It is very difficult for 'lost leaders' to re-enter academe regardless of their skills and expertise, and few incentives exist for academics to undertake secondments beyond academe.

RQ5. Is there evidence of disciplines beyond the social sciences innovating in this space?

1. The Clore Leadership Foundation was established in 2002 to respond to a recognised leadership challenge in the cultural sector. Targeted at mid-career professionals and with an explicit focus on facilitating the mobility of people and ideas, it has evolved into a successful and internationally respected development framework. The programme maintains a strong cadre effect and has developed a long-term alumni network.
2. The Crucible initiative was originally developed by NESTA in 2005 to build capacity at the intersection or nexus between disciplines and professions. It was later developed into the Scottish Crucible (2008) and Welsh Crucible (2011) in order to build innovative research leadership capacity amongst mid-career academics and researchers from a wide range of public and private backgrounds. It has been deemed as simple, effective and relatively low-cost.
3. In 2012 the Wellcome Trust launched a new research leadership programme for senior scholars who already had some leadership experience, who were viewed as having the potential to lead at the highest level and become ambassadors for the bio-medical sciences. It offers a clear leadership competency model and is organised on a 'learning journey' approach that builds formal and informal connections across sectors.
4. The Academy of Medical Sciences has launched an ambitious new talent management strategy that unites sectors and disciplines. At the core of this strategy is a new programme – Future Leaders in Innovation, Entrepreneurship and Research [FLIER] – which could valuable insights for the social sciences.

RQ6. What does the evidence tell us about how other parts of the public sector are addressing similar challenges?

1. The evidence reveals a growth of leadership-related development platforms (i.e. ‘academies’) across the public sector that could provide valuable conduits through which researchers and research-users could forge relationships, develop skills, and facilitate mobility.
2. Many of the challenges that these leadership academies are intended to address mirror those faced by academics within higher education (i.e. the need to work across traditional professional or institutional boundaries).
3. Most of the initiatives revolve around ‘up-scaling’ capacity through sharing best-practice, creating new opportunities, thinking creatively, expanding the notion of the professional community, building new boundary spanning structures, and incentivising change.
4. The planned creation of a national-level Public Services Leadership Academy could provide a critical partner for UKRI, especially given its remit to be a ‘new home for collaborative leadership’.

The evidence suggests that a number of relatively low-cost high-gain interventions could significantly enhance strategic capacity and the value of existing investments and initiatives without disrupting on-going research activities. There also appears to be a strong appetite amongst the social science community for bringing greater clarity, focus and provision around the topic of research leadership. More evidence will be collected during March-May 2019 as the authors undertake a number of institutional visits, a series of semi-structured interviews and facilitate a national consultation. A final project report will be published during the summer of 2019.

1. CONTEXT

The research funding landscape is increasingly emphasising complex forms of collaborative and challenge-orientated research that ranges across traditional disciplinary and professional boundaries. This team-based approach to research demands a very different skill-set set to that which has in recent decades been prized or incentivized within the social sciences. Adaptability, innovation and new approaches to research leadership are therefore required to ensure that the social sciences remain ‘fit for the future’ as a central and flourishing element of the UK science base.

The entire spectrum of research forms a complex system where cultivating talent, increasing knowledge and promoting innovation are inter-twined not just *across disciplines* but also *across society* through a web of potential research-user and public audiences. The social sciences form an integral element of this web and one whose focus on individual behaviour, institutional adaptation and social change is globally recognised as central to combating a number of societal challenges: ‘The call on science to make a difference’ as a previous *World Social Science Report* underlines ‘speaks to the social sciences no less than to the natural, physical, human and engineering sciences’.² Indeed, it is possible to identify a recent step-change or shift in the nature of the expectations placed upon the social sciences as their potential role in terms of scientific excellence and social impact is recognised. This shift is reflected in the emphasis that research funders – in the UK and beyond – are increasingly placing on the importance of *scientific breadth*, *viewpoint diversity* and *knowledge utilisation* (see Box 1).

Box 1. Cornerstones of the Emerging Research Funding Landscape

Scientific breadth: ‘How do the parts contribute to the whole and serve to produce more than the sum of their parts?’

Viewpoint diversity: ‘How do we stress test research in terms of methods and findings in order to increase its scientific quality and social relevance?’

Knowledge utilisation: ‘How do we maximise the public value and social relevance of publicly funded scientific research?’

The ‘step change’ is very simple. It stems from an acceptance of complexity and an awareness that tackling major societal challenges and producing world-class scholarship will only occur by not only working across disciplinary boundaries but also by working with potential research-users who have the ability to utilise research insights. It therefore focuses on *the nexus* between traditional disciplinary borders and *the intersection* between existing organisational structures. It takes place at the space in which major transformative scientific breakthroughs, with the capacity to deliver major social benefits, are likely to emerge. Recent reports by a large number of research funders, professional reviews and policy-makers - the Global Research Council, International Social Science Council, European Commission, United Kingdom Research and Innovation (UKRI), etc. - all emphasise this common focus. As Sir Paul Nurse’s report - *Ensuring a Successful UK Research Endeavour* (2015) - notes,

The most effective research systems at producing knowledge for the public good are characterised by freedom of action and movement: they need to be permeable and fluid, allowing the ready transfer of ideas, skills and people in all directions between the different sectors, research disciplines, and various parts of the research endeavour. Artificial barriers which reduce permeability or mutual respect between the different parts of the system should be resisted as they

² UNESCO (2013). *World Social Science Report 2013: Focusing on Changing Global Environments*. Paris: UNESCO, p. 22.

reduce the effectiveness of the research system – both to produce knowledge and for the effective use of that knowledge for applications.³

The research leadership challenge stems from the fact that operating at the nexus or at the intersection *between* disciplines and professions – what the former Nobel Prize winning economist Albert Hirschman labelled ‘trespassing’ - demands a very different skill-set to that which has in recent decades been prized or incentivized within the social sciences.⁴ The challenge also stems from a sharper realisation that significant scientific discoveries are generally driven by talented individuals who combine a number of qualities beyond and in addition to in-depth specialist knowledge of a particular topic. The need for these ‘beyond and in addition to’ capabilities is illustrated by the manner in which research funding is increasingly being channelled to projects that exhibit the following characteristics:

1. They are large, ambitious and complex.
2. They are inter-disciplinary and inter-sectorial in nature, and international in scope.⁵
3. They involve close engagement with potential research-users (co-design, co-production, etc.).
4. They combine a dual focus on *knowledge-creation* and *knowledge-utilisation*.
5. They involve a range of funders and participating (academic and non-academic) institutions.

The research leadership challenge is therefore one of aligning the skills and competencies of the social sciences with the emerging demands of research-funders and research-users. One element of this challenge relates to understanding what might be termed ‘the science of team science’ and the role and capacity of social scientists to work within larger research groups.⁶ Being able to build and manage diverse teams, particularly in relation to the role of specialist professional research support staff who straddle the traditional boundary between administrative and academic roles. Delivering a ‘step-change’ in relation to research leadership faces a number of hurdles. The social sciences encompass a broad range of disciplines and tribalism can, on occasion, trump collaboration⁷; very few social scientists have experience of planning or leading large multi-disciplinary projects; few opportunities exist to develop complex project management skills or even to experience non-academic research related environments; universities exist in a competitive financial environment that can make inter-institutional co-operation difficult; and lone-scholar (or at most very small team) research within specific intellectual niches remains the norm. As Shearer West’s *Humanities Research Leadership in Europe* (2013) demonstrates, the social sciences are not alone or internationally unique in this respect.⁸ **Nevertheless, ‘stepping-up’ to the challenges and opportunities presented by a new and to some extent uncertain funding environment calls for changes in the habits of social scientists and a willingness to embrace new modes of working and thinking.**

³ Nurse, P. (2015). Ensuring A Successful UK Research Endeavor. A Review of the UK Research Councils (The Nurse Report). London: Department for Business, Energy and Industrial Strategy, p. 3.

⁴ Hirschman, A. (1981). *Essays in Trespassing: Economics to Politics and Beyond*. Cambridge and New York: Cambridge University Press.

⁵ It should be noted that this review defines interdisciplinarity as both the work conducted within different social science disciplines as well as the research that crosses the boundary of the social sciences into the rest of academe. Inter-sectoral mobility is defined as the flow of people in and out of academia, that includes work across academic, third sector, commercial, and government boundaries. It encourages the movement of people in out of academia with the aim being to cultivate the flow of ideas and expertise.

⁶ Academy of Medical Sciences (2019). *From Innovation to Implementation: Team Science Two Years On*. London: The Academy of Medical Sciences; Academy of Medical Sciences (2016). *Improving the Recognition of Team Science Contributions in Biomedical Research Careers*. London: Academy of Medical Sciences; Baker, B. (2015). The Science of Team Science. *BioScience*, 65(7), pp. 639-644; Hall, K.L. et al (2018). The Science of Team Science: A Review of the Empirical Evidence and Research Gaps on Collaboration in Science. *American Psychologist*, 73(4), pp. 532-548; Cooke, N. et al. (2015). *Enhancing the Effectiveness of Team Science*. Washington DC: National Academies Press

⁷ Blackmore, P. (2014). *Leading Academic Talent to a Successful Future: An International Perspective*. London: Leadership Foundation for Higher Education, p. 13.

⁸ West, S. (2013). *Humanities Research Leadership in Europe*. Stimulus Paper. London: Leadership Foundation for Higher Education.

2. FOCUS

The focus of this evidence review is researcher development and leadership (RDL) in the social sciences. This is concerned with the professional support structures that allow individuals to reach their full potential and, through this, help create a flourishing scientific community. The emphasis is very much on ‘people not projects’ and is fundamentally about fostering the human capabilities within the UK social science community to address key global and societal challenges. As such,

Researcher development and leadership focuses attention on the skills and competencies that are needed to sustain a world-class research environment that delivers scholarly excellence and societal benefits. It embraces the needs of academics, professional support staff and research-users in a strategic and integrated manner that spans all stages of the professional journey and that is committed to nurturing future generations in an inclusive manner. At its core, researcher development and leadership capacities seek to provide the skills, competencies and support structures that researchers need to excel and it is built on a recognition that successful research endeavours facilitate the flow of people and ideas across disciplines, institutions and professions. Researcher development and leadership is therefore a foundational element of the research infrastructure underpinning the UK science base.

This definition is designed to capture five component elements. **Firstly**, ensuring effective researcher development and leadership structures are in place is a collective responsibility and a collective opportunity. How research funders, learned societies, academies, universities, research-users and social scientists working beyond academe can work together to create an ambitious and agile RDL framework is the critical issue. **Secondly**, although RDL will inevitably include some consideration of managerial competencies and organisational skills, these are secondary to the primary focus on researcher development, in general, and research leadership, in particular. Put slightly differently, RDL is distinct from the general emphasis of most professional development and leadership-related provision within universities which tends to have a primary focus on the organisational and managerial needs of the institution (i.e. talent spotting future heads of department or deans). In line with academic culture, RDL has little interest in formal leadership positions and instead has a sharper focus on supporting, enabling, facilitating and most of all nurturing genuinely world-class researchers. This reflects a **third** component element of this project’s approach to RDL - as an activity it revolves around dedicating time and energy to the creation of research-related platforms and the nurturing of relationships for the benefit of a broad research community. It is not an individually-focused endeavour. RDL is also not a synonym for achieving scientific excellence as it about embracing a broader set of skills.

The **fourth** component is simply a recognition for the need for pluralism *vis-à-vis* RDL as no one intervention, learning journey, or platform is likely to provide a fully rounded range of skills. Different individuals will have different developmental needs or leadership qualities that will need a more bespoke approach. Part of this pluralism is also recognising that RDL embraces a range of activities from supervising (formally and informally) pre-docs, docs or post-docs, at one end of the spectrum, to directing inter-disciplinary institutes or centres, at the other. Recognising and rewarding this activity and acknowledging its centrality to the health of flourishing intellectual ecosystem is crucial. This flows into a **fifth** and final issue that is of great significance: the need to recognise the positive manner in which thinking about RDL and the needs of future generations of scholars provides an opportunity to reflect on and address long-standing concerns regarding equality, diversity and inclusion within academe.

3. AIM

It is in exactly this context that this evidence review was commissioned to answer **six inter-related questions**:

RQ1. What is the current evidence base and academic knowledge of researcher development and research leadership in the social sciences?

RQ2. What is researcher development and research leadership and what evidence is there that they are emerging as a key issue?

RQ3. What does the current capacity framework look like in relation to researcher development and research leadership - where are the gaps in provision?

RQ4. What does the evidence suggest are the main obstacles or challenges to promoting researcher development and research leadership?

RQ5. Is there evidence of disciplines beyond the social sciences innovating in this space?

RQ6. What does the evidence tell us about how other parts of the public sector are addressing similar challenges?

4. METHODS

The evidence base for this review is based on a six-month study that took place between July and December 2018 and involved five main elements.

- i. A review of the existing academic literature that included over 250 articles, chapters and books.⁹
- ii. A review of the relevant 'grey literature'.¹⁰
- iii. A review of the insights and evidence underpinning the creation of a number of new leadership development structures across the UK public sector, plus the research and recommendations published by the Public Services Leadership Taskforce in October 2018.
- iv. Initial meetings and discussions with researchers, funders, professional research support staff and representatives of a range of research-user communities. A number of focus groups were also held with key stakeholder groups.
- v. Landscape reviews of how the ESRC and other research councils currently seek to promote, support and sustain research leadership capacity. This included a full review of relevant policy reviews and evaluations.

For further information on any element of this evidence review please contact the authors. **More evidence will be collected during February-May 2019 as the authors undertake a number of institutional visits, a series of semi-structured interviews and facilitate a national consultation. A final project report will be published during the summer of 2019.**

¹⁰ The following organisations were the main sources of this literature: Wellcome Trust, Deloitte, Institute for Employment Studies, Vitae, Academy of Medical Sciences, Behavioural Insights Team (Cabinet Office), British Academy, Institute for Government, NESTA, League of European Research Universities, European Commission, International Social Science Council, Social Science Research Council, European Research Council, Advance HE (previously Leadership Academy for Higher Education), Global Research Council, Association of Research Managers and Administrators, and the Association for Project Management.

5. SUBSTANTIVE FINDINGS

This section offers a descriptive account of the available evidence. It is divided into six sub-sections which correspond with the primary and secondary findings highlighted above in the Executive Summary.

5.1 - What is the current evidence base and academic knowledge of researcher development and research leadership in the social sciences?

The existing evidence base on research leadership within higher education is incredibly limited. 'Research leadership' is not a commonly used or well understood term. The concept of 'leadership' is very often interpreted negatively by academics as a synonym for 'management' and the imposition of top-down bureaucratic control and audit frameworks. The notion of collaborative research leadership may provide greater clarity in a way that dovetails with traditional academic values concerning intellectual freedom and collegiality.

The central argument of this sub-section is that the existing evidence base provides very little information about the specific topic of researcher development or research leadership in higher education. What is research leadership? What are the key skills and attributes that underpin research leadership? How do people develop into world-class researchers that can inspire and nurture future generations? What does effective research leadership look like and how does it vary by disciplines and topic? How might institutional conceptions of research leadership differ from those of individual academics? How have the demands and pressures on research leaders changed in recent years? Is research leadership the same as 'intellectual leadership' or 'thought leadership'? What is the link between research leadership and research performance? Why do some individuals have incredibly successful research careers and others not? How might different models of research infrastructure or investment help build research leadership capacity? What role might research leaders based beyond academe or research-users play in forging innovative new research platforms? **The existing research and data offer a very weak foundation for engaging with these questions.**

This gap in the existing evidence base is somewhat anomalous given the huge research literature that exists for 'leadership studies', in general, and leadership within higher education, in particular. The main focus of this latter strand of research has been on what might be termed 'managerial' or 'organisational' leadership within higher education (i.e. the internal governance of universities and the preparation or training provided to scholars to assume formal leadership positions such as Head of Department, Deans, etc.). Numerous books and special editions of journals have examined managerial leadership within higher education in terms of both theory and practice.¹¹ When it comes to a specific focus on *research* leadership within higher education the available scholarship can be set out very clearly as consisting of little more than a handful of articles and the following four books: Paul Ramsden's *Learning to Lead in Higher Education* (1988), Robin Middlehurst's *Leading Academics* (1993), Bruce Macfarlane's *Intellectual Leadership in Higher Education* (2012) and Linda Evans *Professors as Academic Leaders* (2018).¹² Evans notes the anomaly presented by this dearth of research, data or evidence:

¹¹ See, for example, Davis, H. and Jones, S. (2014). The Work of Leadership in Higher Education Management. *Journal of Higher Education Policy and Management*, 36(4), pp. 367-370; Bolden, R. et al. (2009). Leadership in Higher Education: Facts, Fiction and Futures - Introduction to the Special Issue. *Leadership*, 5(3), pp. 291-298; Macfarlane, B. (2014). Challenging Leaderism. *Higher Education Research and Development*, 33(1), pp. 1-4.

¹² Evans, L. (2014). What is Effective Research Leadership? A Research-Informed Perspective. *Higher Education Research and Development*, 33(1), pp. 46-58; Evans, L. (2017). University Professors as Academic Leaders? Professorial Leadership Development Needs and Provision in the UK. *Educational Management Administration and Leadership*, 45, pp. 1-18; Evans, L., Homer, M. and Rayner, S. (2013). Professors as Academic Leaders: The Perspectives of 'the Led'. *Educational Management Administration and Leadership*, 41(5), pp. 674-689; Ball, S. (2007). Leadership of Academics in Research. *Educational Management Administration and Leadership*, 35(4), pp. 449-477; Bolden, R. et al. (2012). Academic Leadership: Changing Conceptions, Identities and Experiences in UK Higher Education. Research and Development Series. Summary Report to the Leadership Foundation for Higher Education. London: Leadership Foundation for Higher Education; Evans, L. (2011). The Scholarship of Researcher Development: Mapping the Terrain and Pushing Back Boundaries. *International Journal for Researcher Development*, 2(2), pp. 75-98; Evans, L. (2012). Leadership for Researcher Development: What Research Leaders Need to Know and Understand. *Educational Management Administration and Leadership*, 40(4), pp. 432-435; Evans et al. Professors as Academic Leaders: The Perspectives of 'the Led'.

[R]esearch performance is a dominant preoccupation for research intensive universities and those with research focused aspirations. Performativity measures such as Australia's Excellence in Research for Australia, New Zealand's Performance Based Research Funding exercise, and the United Kingdom's Research Excellence Framework have placed quality and productivity at the top of institutional development agendas, prioritising research as a valued pre-eminent activity to which personnel must be committed and which drives institutional goals and missions that are squarely focused on building research capacity and developing researchers. *Research leadership, then, would appear to be a legitimate – if not essential – specialised form of higher education leadership... Yet in one sense such leaders are inadequately equipped, for the knowledge base available to them is extremely limited* [emphasis added].¹³

Evans is by no means unique in coming to this conclusion. Edgar and Geare note that our understanding 'of research and research performance remains largely uncharted territory'¹⁴ which dovetails with Evans earlier arguments about an 'under-developed scholarship of researcher development'.¹⁵ This lacuna is corroborated by Lumby, who noted that '[e]vidence of the impact of leadership and different forms of leadership on the extent and quality of research ... is slim',¹⁶ and by Åkerlind's observation: 'there is relatively little ... literature addressing academics' understandings of research and being a researcher'.¹⁷ **As a result, research policy and significant financial investments risk being made on the basis of an evidence base that is 'relatively emaciated'.**¹⁸

Three additional issues deserve brief comment in light of this core finding:

During discussions and focus groups **many social scientists struggled with the concept of research leadership in terms of what it meant and why it mattered.** 'Research' was generally viewed as just what academics 'did' and some scholars would progress to become recognised 'leaders' in their discipline while most would not. There was little understanding of the key skills or competencies attached to research leadership or how these were changing in light of broader shifts in the research funding landscape. Leadership development was generally interpreted as relating to managerial or teaching duties. This might reflect the fact that – as will be demonstrated below – where formal leadership-related professional development opportunities exist they are generally focused on university governance or teaching (through the professional competence frameworks accredited by the Higher Education Academy - now based within Advance HE). The provision of explicit high-quality training or professional development opportunities in relation to research leadership in the social sciences appears, by contrast, extremely limited.

The second issue is that **a very large proportion academics tend to define the concept of 'leadership' in pejorative terms, often associating and linking the term with 'managerialism'.**¹⁹ The strongly embedded character of the social sciences – as with the arts and humanities – engenders a natural mistrust of leadership. Significant literature exists on the tension between traditional academic norms and values, and the introduction over recent decades of a broadly neo-liberal reform agenda within higher education have created a sense of mistrust towards concepts of 'leadership'.²⁰ This mistrust creates a potential cultural

¹³ Evans. What is Effective Research Leadership.

¹⁴ Edgar, F. and Geare, A. (2011). Factors Influencing University Research Performance. *Studies in Higher Education*, 38(5), pp. 774-792.

¹⁵ Evans. The Scholarship of Researcher Development.

¹⁶ Lumby, J. (2012). What Do We Know About Leadership in Higher Education? The Leadership Foundation for Higher Education's Research: Review Paper. London: Leadership Foundation for Higher Education, p. 10.

¹⁷ Åkerlind, G.S. (2008). An Academic Perspective on Research and Being a Researcher: An Integration of the Literature. *Studies in Higher Education*, 33(1), pp. 17-31.

¹⁸ Evans. Leadership for Researcher Development.

¹⁹ Blackmore. Leading Academic Talent to a Successful Future, p. 9; Academics Anonymous (2014). Academics Anonymous: An Open Letter to University 'Leaders' [online]. *The Guardian*, 8 August 2014. Available from: <https://www.theguardian.com/higher-education-network/blog/2014/aug/08/academics-anonymous-open-letter-university-leaders>

²⁰ See for example Bacon, E. (2014). Neo-Collegiality: Restoring Academic Engagement in the Managerial University. London: Leadership Foundation for Higher Education; Shattock, M (2008). The Change from Private to Public Governance of British Higher Education: Its Consequences for Higher Education Policy Making 1980-2006. *Higher Education Quarterly*, 62(3), pp. 181-203; Middlehurst, R. (2013). Changing Internal Governance: Are Leadership Roles and Management Structures in United Kingdom Universities Fit for the Future? *Higher Education Quarterly*, 67(3), pp. 275-294.

obstacle that may influence conversations and discussions about potentially supporting research leadership because any discussion of ‘leadership’ is very often immediately interpreted as inevitably relating to a top-down mode of individualised, masculine and bureaucratic leadership that risks eroding traditional conceptions of intellectual autonomy and professional freedom.²¹ The evidence suggests that academics look for leadership in relation to values and identity, not in the allocation of tasks or the management of processes, and their role models are very rarely institutional leaders.²² **This is an important point because the evidence suggests that cultural issues often emerge as a major impediment to change and reform and that this is because it is often forgotten until it is too late.**²³ Thinking about cultural change cannot be an afterthought when it comes to service design (and redesign) and embedding change. Culture is a ‘soft’ infrastructure that needs to be underpinned by ‘hard wiring’, such as incentive and reward frameworks. However, as the ability to conduct research is the primary reason individuals tend to choose an academic career and is the part of their job that surveys suggest they enjoy the most, it is therefore not surprising that they are wary of discussions regarding research-related reform agendas.²⁴ This is particularly relevant given the ‘squeeze’ that many academics have felt in recent years in relation to their capacity to conduct research and writing. The current intellectual and professional criticality towards notions of ‘power’, ‘leadership’ and ‘management’ are almost imbued within large parts of the social sciences adds a distinctive twist to the challenge of research development and leadership.

A key theme coming out of this evidence review (and thirdly), is the **heightened interest in the concept of ‘collaborative’ (or ‘distributed’) leadership within higher education.**²⁵ Collaborative leadership represents part of a broader challenge to what has been termed ‘leaderism’: a single-person focus that has emerged in both the public and private sectors in the UK and beyond.²⁶ The understanding of ‘collaborative’ leadership is based on the acceptance that the skills and expertise required to deliver complex research projects successfully are unlikely to be found in any one individual. The notion of the ‘incomplete leader’ therefore recognises this fact and promotes a focus on actively cultivating, co-ordinating, and

²¹ For a discussion see Burgoyne, J., Mackness, J. and Williams, S. (2009). *Baseline Study of Leadership Development in Higher Education, 2009: Final Report*. London: Leadership Foundation for Higher Education; Bryman, A. (2007). *Effective Leadership in Higher Education: A Literature Review*. *Studies in Higher Education*, 32(6), pp. 693-710.

²² Bolden et al. *Academic Leadership*, p. 34; Macfarlane, B. (2012). *Intellectual Leadership in Higher Education: Reviewing the Role of the University Professor*. Abingdon: Routledge.

²³ See Anderson, H. et al. (2016). *Moving from the Margins: The Challenges of Building Integrated Local Services*. London: Turning Point and Collaborate CIC. Available from: <http://wordpress.collaboratei.com/2016/09/moving-from-the-margins-the-challenges-of-building-integrated-local-services-a-discussion-paper-by-collaborate-and-turning-point-2/>

²⁴ See Bolden et al. *Academic Leadership*; Bolden, R. (2010). *The Elusive Nature of Leadership Practice: An Investigation into the Distribution, Practice and Discursive Processes of Leadership in Universities and Other Large Organisations*. PhD Thesis, University of Exeter. Available from: <https://ore.exeter.ac.uk/repository/handle/10036/104833>

²⁵ Gosling, J., Bolden, R. and Petrov, G. (2009). Distributed Leadership in Higher Education: What Does it Accomplish? *Leadership*, 5(3), pp. 299-310; Gronn, P. (2008). The Future of Distributed Leadership. *Journal of Educational Administration*, 46(2), pp. 141-158; Bolden, R. et al. (2015). *Developing and Sustaining Shared Leadership in Higher Education*. Stimulus Paper. London: Leadership Foundation for Higher Education.

²⁶ This critique suggests that leadership has evolved into a dominant discourse within the public sector, and particularly within higher education, in the heroic mould of the ‘great man’ theory with an over-emphasis on individuals, aggressive-reform, rapid-impacts and a fast turnaround, and under-emphasis on strategic long-term planning and investment. In relation to research performance, collaborative leadership highlights the way in which teaching-focused staff, academics fulfilling major administrative roles and research support or ‘third sector’ staff generally underpin and make possible the performance of world-class researchers. As Bruce Macfarlane notes, ‘[t]here is a strong connection here, of course, between distributed leadership and the position of women in the academy who disproportionately undertake roles which carry low levels of prestige and recognition’. Macfarlane. *Challenging Leaderism*; See also O’Reilly, D. and Reed, M. (2010). ‘Leaderism’: An Evolution of Managerialism in UK Public Service Reform. *Public Administration*, 88(4), pp. 960-978; Morley, L. (2013). The Rules of the Game: Women and the Leaderist Turn in Higher Education. *Gender and Education*, 25(1), pp. 116-131. See also, The King’s Fund (2011). *The Future of Leadership and Management in the NHS. No More Heroes*. Report from The King’s Fund Commission on Leadership and Management in the NHS. London: The King’s Fund. The report called for the NHS to move away from the heroic model of leadership to make way for more inclusive models.

blending the skills of a range of people in order to fill the leadership gaps and secure success.²⁷ It therefore provides a perspective that (re)frames, (re)interprets, (re)constructs and even (re)imagines the concept of leadership in a manner that may defuse dominant cultural antagonisms within academe and replace them with a far more positive, inclusive, and future-focused approach. 'Collaborative' leadership also provides a way of thinking about a flatter model of research leadership in which the notion of 'leading from the middle' - or even 'leading from the back' - resonates with traditional academic notions and values of collegiality, while also clearly dovetailing with the contemporary shift towards 'team science'.²⁸

Specific Evidence Implications

- *As the existing evidence base is so thin there may be significant value in commissioning a more extensive and systematic research programme on the topic of research leadership (i.e. the science of social science and 'what works').*
- *As the concept of 'research leadership' is not widely used, understood or developed, the development of a clear ESRC-UKRI statement on the topic may be of significant value.*
- *The professional culture of academe has specific implications for thinking about research leadership that should not be under-estimated. Achieving cultural change needs to be an explicit element of a new agenda.*
- *A focus on what might be termed 'collaborative research leadership' may offer a clear focus for a positive and future-focused reform agenda.*
- *Not only does 'collaborative research leadership' emphasise the harvesting of multiple talents in an inclusive and team-based manner but it also demands a fresh approach to building research infrastructure and nurturing talent.*
- *As the next section illustrates, this would put the ESRC/UKRI at the forefront of the professional agenda due to the manner in which it facilitates a shift from broad principles to a clear focus on practical strategies and tools.*

²⁷ Ancona, D. et al. (2007). In Praise of the Incomplete Leader. *Harvard Business Review*, 85(2), pp. 92-100.

²⁸ Nye, J. (2010). *The Powers to Lead*. Oxford: Oxford University Press, pp. 35, 139-140, 147; Keohane, N.O. (2010). *Thinking About Leadership*. Princeton: Princeton University Press; Greenleaf, R. (1977). *The Servant as Leader: A Journey into the Nature of Legitimate Power and Greatness*. Mahwah, NJ: Paulist Press.

5.2 - What is researcher development and research leadership and what evidence is there that they are emerging as a key issue?

There is an increasing awareness of the need to ensure that the skill-set of social scientists is more closely aligned with the demands of the shifting research, and research funding, landscape. However, there is very little detailed awareness of exactly how this process of alignment can be undertaken in order to build the requisite and future-focused research leadership capacities.

As stated in the previous sub-section, the concept of researcher development, in general, and research leadership, in particular, remains under-developed and opaque within academe and this issue is reflected in the existence of a rather thin research base on the topic. The main argument of this section is therefore **that it is possible to identify evidence of growing concern amongst policy-makers and research funders around the world regarding the need to bolster research leadership capacities and for the need to think more strategically and professionally about talent management in relation to research. What appears to be less evident is the capacity to turn this concern into actionable strategies and interventions.** This issue raises critical questions about where responsibility lies for addressing the research leadership challenge, what the main obstacles and challenges might be and where there are examples of ambitious innovation.

Evidence for the mounting concern about research leadership and talent management is a recent development that has emerged within the last decade. This concern is identifiable at the international, national and sub-national level and is not only related to any one specific part of the scientific spectrum.²⁹ In January 2010, for example, the League of European Research Universities set out the priority issues for improving the attractiveness and excellence of research careers in its influential report *Harvesting Talent - Strengthening Research Careers in Europe*. The report emphasised the need for greater inter-disciplinary and inter-sectoral mobility, the need for a shared research career framework across Europe, and a clearer commitment to supporting researchers on short-term contracts who were trying to establish their careers. In June 2010 the World Social Science Report was titled *Knowledge Divides* and highlighted a similar set of challenges, and notably how few social scientists had experience of planning or running multi-disciplinary projects. The report highlighted the need for a long-term and strategic approach to building the kinds of research leadership capacities that would be needed in the future:

The development of research capacity requires that governments, international organisations and aid agencies provide funding to support research institutions as well as individual training. The three levels of capacity – individual, organisational and systemic – all need sustained attention. Funding has to be made available for a sufficient period to produce results. Long-term rather than immediate impact is the objective. To combat the negative aspects of brain drain, programmes enhancing the circulation of ideas and social scientists should be promoted, and include support for diaspora networks.³⁰

The definition of ‘research leadership’ in this review and project therefore aims to encompass the changing practice of research, as well as the shifting funding landscapes. The challenge, however, lies with the ambiguous definition of research leadership, which – as Bolden illustrates - can be interpreted in several ways:

There are multiple definitions of leadership that often get confused or mislabelled as research leadership. For example, academic management, it is suggested, tends to have an institutional focus

²⁹For example, see West. *Humanities Research Leadership in Europe*; Boulton, G. (2010). *Harvesting Talent: Strengthening Research Careers in Europe*. Leuven, Belgium: The League of European Research Universities; Browning, L., Thompson, K. and Dawson, D. (2017). From Early Career Researcher to Research Leader: Survival of the Fittest? *Journal of Higher Education Policy and Management*, 39(4), pp. 361-377; Great Britain. HM Treasury (2002). *SET for Success: The Supply of People with Science, Technology, Engineering and Mathematics Skills*. The Report of Sir Gareth Roberts’ Review. London: HM Treasury.

³⁰ UNESCO. *World Social Science Report 2013*, p. 22.

and is used in order to frame academic tasks and processes in order to achieve pre-determined outcomes (a utilitarian orientation), whilst academic leadership is conceived more broadly and is most significant in terms of its impact upon academic values and identity/ies (a normative orientation).³¹

Effective researcher development should ensure the existence of a healthy pipeline of future research leaders.³² Linda Evans has argued that research leadership can be defined as ‘the influence of one or more persons on the research-related behaviour, attitudes or intellectual capacity of another/others’.³³ And yet the nature and expectations of research leadership have changed significantly in recent years and this has major implications for the talent management of future generations.³⁴ It could be asked – as Robert Hewison and John Holden have done in relation to the Clore Leadership Programme – ‘in this new world, what can the older generation teach the younger?’.³⁵ Vitae’s report *Five Steps Forward*, based on successive Careers in Research Online Surveys (CROS) and Principal Investigators & Research Leaders Surveys (PIRLS), develops this theme by highlighting that ‘largescale, collaborative and interdisciplinary approaches are changing the way research is conducted and therefore the professional development needs of early career researchers’.³⁶ This shift towards large collaborative challenge-orientated research is also changing the professional development needs of established and senior researchers. Research leaders currently get little support or training, and as Vitae noted: ‘Research leaders consistently think nurturing the career development of their researchers is an important aspect of research leadership, but many do not feel recognised or valued by their institution for supervising or managing staff or providing career development advice to them’.³⁷

The 2013 World Social Science Report returns to the issue of research leadership and calls for social scientists to play a bolder leadership role in relation to transformative research. It also shifts from a focus on inter-disciplinarity to a twin focus that underlines the importance of greater inter-sectoral mobility as a key element of what it calls ‘open knowledge processes’. These processes open-up space for ‘multiple sources of expertise’ and for academics to work with ‘non-academic knowledge holders to co-design, co-produce, and co-implement new knowledge, new priorities and mutual learning processes’.³⁸ As the report explains:

What is needed, in other words, is a new kind of social science, one that is bolder, better, bigger and different. This does not mean that the well-honed traditions of classic social science research are no longer needed; on the contrary, such social science will continue to provide an important knowledge-creating function that moves forward our fundamental understanding and ways of thinking. But when it comes to tackling environmental change and sustainability, those working in this tradition should feed into and be complemented by a social science that is:

- bold enough to reframe and reinterpret global environmental change as a fundamentally social process
- better at infusing social science insights into real-world problem solving
- bigger, in terms of having more social scientists to work on addressing head on the challenges of the Anthropocene era

³¹ Bolden et al. Academic Leadership, p. 2.

³² Bazeley, P. (2003). Defining ‘Early Career’ in Research. *Higher Education*, 45(3), pp. 257-279.

³³ Evans. What is Effective Research Leadership.

³⁴ Vitae (2017). *Five Steps Forward: Progress in implementing the Concordat to Support the Career Development of Researchers 2008-2017*. Cambridge: Vitae, p. 7; Blackmore, P. and Kandiko, C. (2011). Interdisciplinarity Within an Academic Career. *Research in Post-Compulsory Education*, 16(1), pp. 123-134; van der Boon, Kahmen and Maes. Delivering Talent. See also Deem, R. and Brehony, K. J. (2000). Doctoral Students’ Access to Research Cultures - Are Some More Unequal Than Others? *Studies in Higher Education*, 25(2), 149-165 (p. 158); Tysome, T. (2014). Leading Academic Talent to a Successful Future: Interviews with Leaders, Managers and Academics. Stimulus Paper. London: Leadership Foundation for Higher Education, p. 5.

³⁵ Hewison, R. and Holden, J. (2013). *Creative Leadership: A Future Vision for the Clore Leadership Programme*. London: Clore. Available from: <https://www.cloreleadership.org/resources/creative-leadership-future-vision-clore-leadership>

³⁶ Vitae. *Five Steps Forward*, p. 7.

³⁷ Vitae. *Five Steps Forward*, p. 3.

³⁸ UNESCO. World Social Science Report 2013, p. 9.

-different, in the sense of reflecting upon and changing its own ways of thinking and doing science – its theories, assumptions, methodologies, institutions, norms and incentives – in order to contribute effectively to meeting the vexing interdisciplinary and cross-sector challenges that society faces³⁹.

In 2014 the Global Research Council published a *Statement of Principles and Actions for Shaping the Future: Supporting the Next Generation of Researchers* (see Table 1, below). The report represents possibly the most developed statement regarding the skills, training and support that will be required by world-class researchers in the future rather the skills that may have been required in the past: ‘GRC participants should be actively thinking about the types of skills and training *that will be needed over the coming decades*, ways to promote socially responsible research, and how research will contribute to and be transformed by a shifting social, cultural, political, economic, and environmental global context[emphasis added]’. The statement proceeds to note that ‘participants are therefore committed to developing and supporting programmes and initiatives targeted at the next generation of professional researchers consistent and relevant to the level of development and further advancement of the research ecosystem of each region’.⁴⁰

Table 1. Global Research Council. *Shaping the Future*, 2014

PRINCIPLE	ACTION
Cultivating talent at all levels of career development	GRC participants should implement funding programmes and activities that encourage creative research, provide scientific freedom, foster independence and cater to researchers at different stages of their career development.
Attracting and retaining the best talents in all their diversity	GRC participants should advance equal opportunity in research, and develop mechanisms that encourage people from all backgrounds to pursue scholarly and scientific careers, contributing to research excellence.
Harnessing the educational potential of research	GRC participants should encourage relevant organizations to promote and nurture interest in research for the younger generation and for the public at large. GRC participants should support involvement in research by students at all levels, according to their mandate.
Developing interdisciplinary research	GRC participants should recognise and encourage interdisciplinary research where appropriate. Researchers should be given opportunities to explore interdisciplinary approaches and engage in emerging fields.
Encouraging the acquisition of diverse skill sets and outreach activities	GRC participants should encourage the acquisition by researchers of transferable skills such as leadership, entrepreneurship, languages, communication, management and mentorship, and recognise the value of these skills. Incentives for outreach activities (dissemination, public engagement, knowledge exchange) and engagement with the public and private stakeholders should be put in place.
Promoting a high-quality professional environment	GRC participants should recognise and respect researchers as professionals, and support policies encouraging work-life balance, appropriate physical infrastructure and work environment, and opportunities for career development.
Facilitating mobility	GRC participants acknowledge the contribution of researcher mobility — whether geographic, interdisciplinary, inter--sectoral, or virtual — to career development and research excellence. GRC participants should develop and encourage mechanisms for mobility which encourage effective research collaboration and increase participation.
Sharing of good practice	GRC participants should share practices and experiences across and within all above mentioned areas, including innovative approaches to the development of the broad skill sets needed for success in the future research environment.
Nurturing research integrity	GRC participants should promote research integrity at all levels of career development.

³⁹ UNESCO. World Social Science Report 2013, p. 48.

⁴⁰ Global Research Council (2014). *Statement of Principles and Actions for Shaping the Future: Supporting the Next Generation of Researchers*. Global Research Council, p. 1. Available from: http://www.nsf.gov.cn/Portals/0/fj/english/20140529_01.pdf

The 2016 World Social Science report continued this call for ‘a step change towards a research agenda that is inter-disciplinary, multi-scale and globally inclusive, creating pathways for transformative knowledge’.⁴¹ In June 2018, the League of European Research Universities published *Delivering Talent – Careers of Researchers Inside and Outside of Academia* which highlighted that research careers can be varied, that interesting research careers exist beyond academe, and that universities should do more to encourage researchers to consider non-academic research roles within society.⁴² This, in turn, raises critical questions about the level of fluidity in-and-out of academe, re-entry points, and the cultivation of ‘open knowledge processes’. **Yet the evidence suggests that it is possible to isolate a seam of fairly high-level policy reports that have focused on research leadership and talent management, and that have all in their different ways contributed to a call for ‘a new kind of social science, one that is bolder, better, bigger and different’. However, what has been notably absent is any detailed analysis of how this new kind of social science can be nurtured or how a set of relatively well-known obstacles can be addressed.**

An integral part of the research development and leadership landscape is the emergence of a group of research support staff that seem to exist across the traditional ‘administrative’ and ‘academic’ boundary within higher education, who are often referred to as ‘third space staff’. Members of this group often have experience of holding academic posts and have moved into roles that focus on supporting research:

The blurring of boundaries between, for instance, functional areas, professional and academic activity, and internal and external constituencies has been fostered by the emergence of broadly based, extended projects such as student transitions, community partnership and professional practice. These have contributed to the creation of a third space between professional and academic domains, requiring contributions from a range of staff. In this space, the concept of administrative service has become reoriented towards one of partnership with academic colleagues and the multiple constituencies with whom institutions interact.⁴³

‘Third Space’ staff also draw parallels to ‘para- academics’, who have been described as specialist staff who have displaced the traditional role of academics who are ‘expected to perform all elements of academic practice [that] are being displaced by para academics, such as student skills advisers, educational developers, learning technologists and research management staff, who specialise in one element of the tripartite academic role.’⁴⁴ However, an academic wrote anonymously in a Guardian article argued that unfortunately para-academics ‘often struggle with identity, career progression and acknowledgement of the effort that goes into juggling the dual roles of being a professional and an academic’.⁴⁵ It should also be noted that the concept of ‘Third space’ staff or the ‘para-academic’ has proven slightly problematic with some focus group participants, who have emphasized that not all such staff have PhDs or academic experience. What needs to be emphasized is that the research support sector is changing fundamentally, and it is becoming more and more specialised and heavily involved in activities that traditionally were squarely within the academic space. Research development and leadership needs to be aligned with this changing framework of support.

Four issues deserve brief comment:

⁴¹ UNESCO (2016). World Social Science Report 2016: Challenging Inequalities: Pathways to a Just World. Paris: UNESCO, p. 3.

⁴² van der Boon, Kahmen and Maes. Delivering Talent.

⁴³ Whitchurch, C. (2008). Shifting Identities and Blurring Boundaries: The Emergence of Third Space Professionals in UK Higher Education. *Higher Education Quarterly*, 62(4), 377-396 (p. 378); Whitchurch, C. (2006). Who Do They Think They Are? The Changing Identities of Professional Administrators and Managers in UK Higher Education. *Journal of Higher Education Policy and Management*, 28(2), pp. 159-171.

⁴⁴ Macfarlane, B. (2011). The Morphing of Academic Practice: Unbundling and the Rise of the Para-academic. *Higher Education Quarterly*, 65, pp. 59-73.

⁴⁵ Anonymous Academic (2017). Work in an Academic-Professional Hybrid Role? Say Goodbye to Career Progression. [Online]. *The Guardian*, 29 September 2017. Available from: <https://www.theguardian.com/higher-education-network/2017/sep/29/work-academic-professional-hybrid-role-say-goodbye-career-progression>

1. The first issue is straightforward in that it underlines the paucity of the existing evidence base, and the risks this dearth may present in terms of subsequent policy design. The aspirational principles are clear in the sense of a commitment to (1) inter-disciplinarity and scientific breadth, (2) increased viewpoint diversity by utilising multiple sources of expertise and (3) a sharper focus on knowledge utilisation through close engagement with potential research-users (i.e. the three cornerstones of the new research landscape set out in Box 1 above). **At the international level it is the shift *from principles to practice* that appears more problematic, especially in terms of evidence of ‘what works’ and how to drive meaningful change.**

2. Following on from this issue (and secondly), one of the benefits of a preliminary mapping of the emerging concern as to whether the science base, and social sciences in particular, are ‘fit for the future’ is that it is possible to locate specific policies and interventions at the national level. With the benefit of hindsight, the Roberts Report of April 2002 – *SET for Success: The Supply of People with Science, Technology, Engineering and Mathematics Skills* – can be viewed as an early innovator in this space. Not only did it recognise a lack of alignment between the needs of society and the approach to education and careers taken by universities, it also recognised the manner in which scientific proficiency needed to be bolstered by a broader set of transferable skills. The Roberts Review focused on the existence of what was interpreted as a ‘disconnect’ and offered a strategic approach that embraced the full educational and professional journey with an emphasis on mobility and incentives. What makes this particularly relevant is the manner in which a series of footnotes in the Roberts Report recognised that the social sciences, arts and humanities were also ‘important in the supply of innovative and creative employees’ and that these disciplines ‘may face one or more of the same problems as science and engineering’.⁴⁶ More recently, there are very clear similarities in tone and focus between, for example, Sir Paul Nurse’s report – *Ensuring a Successful Research Endeavour* – of November 2015 and a large number of the reports mentioned above. **The creation of UKRI in 2018 can therefore be interpreted as an attempt to build capacity around translating high-level principles into practical policies and incentive frameworks.** And in relation to building research infrastructure and developing a more explicit and systematic approach to talent management UKRI’s *Strategic Prospectus* mirrors nearly all the points of emphasis included in Table 1.

3. In terms of thinking about research leadership, it is evident that a ‘the leadership lag’ has developed between investments and outcomes. There is also increasing awareness of the need to focus on cultivating talent at all levels of career development and not just amongst early career researchers. The longstanding emphasis on inter-disciplinary studies has now been matched by a more distinctive and potentially transformative focus on inter-sectoral mobility.⁴⁷ There are also early indications of a more sophisticated approach to thinking about research leadership not just in the (direct) sense of broadening the skills base of individuals but in a more (indirect) sense that focuses on structures and incentives and creating the environments within which the new skills and relationships that are needed to span traditional disciplinary borders are likely to emerge (i.e. ‘the crucible effect’ discussed below). **In many ways the International Social Science Council’s focus on a multi-layered approach to building research leadership capacity and nurturing talent - with its emphasis on *individual, organisational* and *systemic* dimensions of change - could offer a valuable framework for developing a fresh and vibrant approach.**

4. A fourth point is that when it comes to voicing concern and thinking about research leadership, the various learned societies and academies that represent the social sciences in the UK have generally been quiet. As a vast swathe of events, reports and publications testify, this is not to suggest that they have not done an excellent job in terms of updating their members about the challenges facing their respective disciplines. But too often research leadership is totally overlooked as an issue or it is dealt with very narrowly through an almost exclusive focus on securing research funding, rather than a deeper and more strategic focus on building research infrastructure and the structural capacities that are increasingly demanded by funders. The argument made by Shearer West in relation to the arts and humanities that ‘it could be argued that weathering the current storm depends upon having outstanding individuals at the helm of the ship’ is

⁴⁶ Great Britain. HM Treasury. The Report of Sir Gareth Roberts’ Review, p. 1.

⁴⁷ van der Boon, Kahmen and Maes. *Delivering Talent*; European Science Foundation (2009). *Research Careers in Europe Landscape and Horizons*. Strasbourg, France: European Science Foundation.

equally applicable to the social sciences.⁴⁸ As later sections will demonstrate, beyond the social sciences learned societies have played a leading role in cultivating conversations, designing new policy responses and raising money to support new initiatives (from both traditional and non-traditional sources). As the evidence currently shows, learned societies in the social sciences generally have limited resources in terms of finance and staff.⁴⁹ They are also operating in an environment that is increasingly defined by inter-disciplinary demands. However, learned societies clearly offer research leadership opportunities through their committees, councils and sub-disciplinary research networks; they also offer sources of formal and informal support and many arrange skills-based researcher development events. For example, the Academy of Social Sciences as well as the British Academy both offer similar development opportunities for leading scholars while also providing inter-disciplinary and boundary-spanning capacities.

Specific Evidence Implications for the ESRC

- *A large number of funders and professional organisation are increasingly concerned about the research leadership challenge but little progress appears to have been made in terms of presenting a coherent, ambitious and detailed reform agenda. This creates an opportunity for the ESRC.*
- *The central challenge revolves around facilitating research systems that are permeable and fluid and that allow the ready transfer of ideas and skills. Given the existing institutional architecture, facilitating this approach to research demands a very different kind of research leader.*
- *Thinking about research leadership at the individual level, institutional level and systemic level may provide a valuable way of developing presenting a coherent, ambitious and detailed reform agenda.*
- *In addition to focusing on the skills and competencies of individuals a successful response to the research leadership challenge is likely to involve creating innovative ways of nurturing environments that bring scholars from many disciplines and research-users from many sectors together and that promote permeability, interaction and mutual respect between the different parts of the knowledge system.*
- *However, there are no easy or 'quick-win' solutions to the research leadership challenge. That is not to suggest that a number of relatively small changes to the existing system could not produce meaningful results and start to develop positive momentum but the 'leadership lag' between initial interventions and investments and clear and demonstrable results is generally thought of in terms of five-year cycles.*
- *As is already clear from the Strategic Prospectus, the creation of UKRI provides exactly the fresh institutional capacity and drivers to make a sustained and innovative commitment to developing research leadership possible.*

⁴⁸ West. Humanities Research Leadership in Europe, p. 3.

⁴⁹ Gardner, R. and Jubb, M. (2016). Strategies for Learned Societies in the Humanities and Social Sciences: A Report for the Economic and Social Research Council and the Arts and Humanities Research Council. London: Royal Geographical Society with IBG; Dingwall, R., Hewitt, M. and Turkmendag, I. (2014). Evaluation of Learned Societies Project 2014. London: Academy of Social Sciences. Available from: <https://www.acss.org.uk/wp-content/uploads/2014/10/Evaluation-of-Learned-Societies-Project-2014.pdf>

5.3 - What does the current capacity framework look like in relation to researcher development and research leadership - where are the gaps in provision?

Researcher development and leadership in the social sciences generally emerges through a combination of self-leadership, luck and informal mentorship. Very little explicit or strategic thought has been given to cultivating, supporting or building research leadership capacity through more formalized and professional 'talent pipelines', and especially not beyond the Early Career Researcher phase.

This sub-section focuses on one question: **how has research leadership development been supported in the past and what are the implications of this for existing capacity?** The main finding is that in the past research leadership capacity in the social sciences has generally relied on a combination of self-leadership, trial-and-error, luck and informal mentoring.⁵⁰ Junior academics were expected to take responsibility for their own development by proactively seeking out whatever information or advice they needed to hone their skills and carve-out a successful career for themselves. The principal driver for research development was their own initiative. As the 2016 Vitae guidance document *Developing the Next Generation* notes 'Academic and research leaders have multiple roles and responsibilities including effective development of future talent within efficient and effective working relationships [but] many research and academic leaders are ill-prepared for the challenges of leadership, and 'learning on the job' does not equip them to develop the next generation in the broad range of skills required for leadership in a variety of careers'.⁵¹ This may explain why the evidence base on this topic is so thin and why social scientists very often struggle to recognise the concept of research leadership. It may also stem from a deep cultural commitment to scholarly autonomy and longstanding concerns amongst many academics about the imposition of managerial reforms. As a result, very little explicit or strategic thought has been given to cultivating, supporting or building research leadership capacity through more formalized and professional 'talent pipelines'. **As a result, the existing capacity-building structures are under-developed, fragmented and offer partial coverage in terms of the professional journey.**

In this regard the UK is in-line with a broader international failure to acknowledge the need for formalised and well-supported researcher development structures. As a 2010 report by the League of European Research Universities makes very clear, career support is often considered an optional 'add on' and is generally not well-integrated into a university's policies and general practice.⁵² Although research development courses may well be offered by universities, take-up by academics is generally low. Providing an evidence base for the professional demand or the positive impact of such provision is therefore difficult. Moreover, in a period of fiscal restraint, funding for these activities tends to be vulnerable. The report also illustrates that where support is provided it is generally targeted at PhD students and ECRs. Few universities provide training or support that is tailored to the needs of senior academics who are fulfilling major research leadership roles, despite the increasing awareness that such training is necessary.⁵³ The evidence also suggests that overall the UK higher education sector generally under-invests in leadership development at most levels⁵⁴ and that in relation to research leadership the most important source of advice and support is

⁵⁰ See Bolden et al. *Academic Leadership*; Browning, Thompson and Dawson. *From Early Career Researcher to Research Leader*, p. 374.

⁵¹ Vitae (2015). *Developing the Next Generation: Guidance and Good Practice in the Leadership Development of Early Career Researchers and Academics*. Cambridge: Vitae, p. 4.

⁵² Boulton. *Harvesting Talent*.

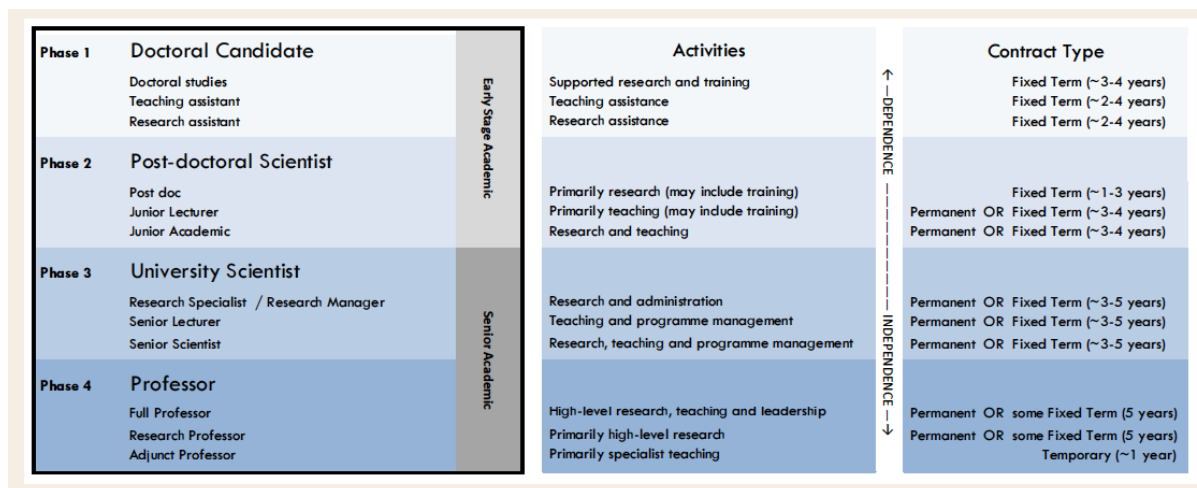
⁵³ See for example, Leiserson, C.E. and McVinney C. (2015). *Lifelong Learning: Science Professors Need Leadership Training*. *Nature*, 523(7560), pp. 279-281.

⁵⁴ Higher Education Funding Council for England (HEFCE) (2010). *The Higher Education Workforce Framework 2010: Overview Report*. Bristol: Higher Education Funding Council for England; Hirsh, W. and Tyler, E. (2017). *Talent Management: Learning Across Sectors*. London: Leadership Foundation for Higher Education.

an individual's doctoral supervisor or the existence of a trusted mentor or role model.⁵⁵ The evidence also suggests that in the absence of professional and appropriate support and training structures many academics feel that they are in effect 'muddling through' their research careers and learning from mistakes that might in a more efficient system have been avoided. Luck is also thought to play a major role. This is reflected in Kay Guccione's 2016 research report for the Leadership Foundation in Higher Education - *More than Lucky?* – which highlights that **both successful and unsuccessful research grant and fellowship applicants tend to describe their success as a result of luck and informal support rather than as a result of more structured researcher development support.**

Three issues deserve brief comment. These are: (1) the current capacity and approach of the ESRC; (2) the current capacity and approach of ROs; and (3) the current capacity and approach of generic providers of researcher development and leadership capacity. A useful way of discussing these issues is with reference to the four-phase research career framework that was produced by LERU in 2010 in order to harmonise career structures and facilitate research support across Europe (see Box 2, below).⁵⁶

Box 2. Harvesting Talent: LERU Four Stage Career Framework⁵⁷



The **historical evidence suggests that the research councils have in the past adopted a rather laissez-faire approach to building research leadership capacity and talent management** on the basis that this role should fall to research organisations (i.e. universities) and scientific communities and not to arm's-length government agencies.⁵⁸ The role of the research councils was therefore viewed quite narrowly and that their responsibilities related to the effective administration and distribution of public funding.⁵⁹

⁵⁵ Browning, Thompson and Dawson. From Early Career Researcher to Research Leader, pp. 373-374; Bolden et al. Academic Leadership, p. 2; Guccione, K. (2016). *More than Lucky? Exploring Self-Leadership in the Development and Articulation of Research Independence*. London: Leadership Foundation for Higher Education.

⁵⁶ See also European Commission (2017). ERA-SGHRM Working Group on Innovative Transnational Research Mobility and Welcoming Researchers to Europe. Brussels; Luxembourg: European Commission.

⁵⁷ Boulton. Harvesting Talent.

⁵⁸ For example, the European Research Council states that it develops research leaders with their Starting Grants and Advanced Grants, yet the responsibility of training for research leadership is left with the home institutions (see <https://erc.europa.eu/funding/starting-grants> and <https://erc.europa.eu/funding/advanced-grants>). For the Leverhulme Research Leadership Awards, leadership development is left to the applicant and their home institution. Following a successful application, Leverhulme does not follow up with institutions to ensure that leadership training is taking place (see <https://www.leverhulme.ac.uk/research-leadership-awards>).

⁵⁹ Research Councils UK (2013). RCUK Policy and Guidelines on Governance of Good Research Conduct. Swindon: Research Councils UK. Available from: <https://www.ed.ac.uk/files/imports/fileManager/RCUKPolicyandGuidelinesonGovernanceofGoodResearchPracticeFebruary2013.pdf>

Yet the evidence also suggests that universities adopted a fairly relaxed approach to researcher development and leadership. This reflects the cultural commitment to academic freedom, while also demonstrating that expectations of research activity placed upon academic staff were far lower in the middle of the twentieth century. Evidence of this traditional practice remains today in the sense that the approach to talent management and leadership in the UK is generally a far more informal than the situation in, for example, the United States or Australia.⁶⁰ Bruce MacFarlane notes that research leadership is generally viewed as the role of full professors (as suggested in Box 2, above) but that there is very little professional advice or support for academics at this level.⁶¹ Evans notes that professors are expected to mentor junior researchers but generally lack a mentor themselves.⁶² This flows through into the findings of a 2017 report entitled *Understanding Mental Health in a Research Environment* which focused attention on the issue of leadership and how ‘wide variations in the standard and style of leadership and supervision’ could have a significant impact on the mental wellbeing of staff; and also how ‘leaders receive little management training’ which can also contribute to stress and burnout.⁶³ **The commitment by UKRI to an explicit focus on building research infrastructure and talent management therefore not only represents a distinct break from the past, but also an opportunity to think afresh about research support structures and mental wellbeing.**

In light of this historical legacy it is not surprising that the ESRC does not currently have a mature and explicit researcher development strategy in place. What is clear from the evidence is that the ESRC does offer a suite of funding opportunities that are designed to support researchers at each of the four stages of the professional journey set out in Box 2 (above). However, the evidence also suggests that these funding streams operate almost as discrete and unintegrated silos rather than as strands of a broader research strategy (see Table 2, below).

⁶⁰ Evans, L. (2018). *Professors as Academic Leaders: Expectations, Enacted Professionalism and Evolving Roles*. London: Bloomsbury Publishing, p. 5.

⁶¹ Macfarlane. *Intellectual Leadership in Higher Education*.

⁶² Evans. *Professors as Academic Leaders: Expectations, Enacted Professionalism and Evolving Roles*, p. 14.

⁶³ Guthrie, S. et al. (2017). *Understanding Mental Health in the Research Environment: A Rapid Evidence Assessment*. Santa Monica, CA: RAND Corporation.

Table 2. Core ESRC Provision Across the Four Stage Career Framework

PHASE	ESRC FUNDING STREAM	LEADERSHIP PROVISION	EVIDENCE
Phase 1 Doctoral	Doctoral Studentships	Developing	The <i>ESRC Postgraduate Training and Development Guidelines 2015</i> set clear expectations for the content and delivery of doctoral training. With a strong emphasis on the provision of broad based social science research training. Beyond core research methods training, Doctoral Training Partnerships are expected to provide broad transferrable skills training including a focus on leadership, research management and relationship management and opportunities for experiential learning through placements and internships outside of academia. However, the primary focus is on completion of their thesis within the 36-month funding period and the extent to which students access training and opportunities is variable and often dependent on the advice of the supervisor and provision of host institution. Doctoral Training Partnerships have forged inter-institutional networks and a positive cadre-effect creating the opportunities for students to engage with a range of disciplines.
Phase 2 Post-Doc	Post-Doctoral Fellowships (1 Year) Future Leaders/New Investigators (usually 2 or 3 Years)	Weak	As part of their application award holders are required to provide a detailed training and development plan with a named mentor identified. However, funded recipients are not placed within any formalised talent management strategy. Networking opportunities are not in place to promote inter-institutional, interdisciplinary or inter-sectoral mobility. Highly dependent on the advice of the nominated mentor, the provision of host institution and discretion of award holder.
Phase 3 University Scientist	Standard Grants (responsive mode or thematic).	Weak	Research development and leadership experience are not significant elements of the application or assessment process. Highly dependent on the support and provision of the host institution. No explicit thought as to transition management and preparation for more demanding roles.
Phase 4 Professor	Research Centres, Major Investments, Professorial Fellows	Weak	Evaluations suggest that in relation to major investments failure is generally attributable to a failure of research leadership. And yet research leadership experience and team competencies have (until very recently) not received a lot of attention. No focus on reciprocity or positive spill-over.

There are clearly many ways in which the ESRC have in recent years attempted to facilitate new forms of researcher development and leadership. This has involved the establishment of new joint funding opportunities, the creation of new secondment opportunities, revisions to guidance and ‘best practice’ documentation, the annual impact awards and many other initiatives. But what does the existing evidence base and the research conducted for this review suggest about the role and capacity of the ESRC both in general and in relation to specific career stages?

- 1. The ESRC is heavily reliant on the ROs to provide researcher development and leadership support but has limited capacity to control the delivery, content or standard of that provision. (The evidence suggests that the standard of provision within ROs is often inadequate, discussed below.)
- 2. Once funding has been allocated grant holders enjoy high levels of discretion and the ESRC has relatively few review of control mechanisms. (Other councils include a non-academic placement as a compulsory element of their doctoral studentships.)

- 3. PhD students are expected to demonstrate an increasing range of competencies above-and-beyond the completion of their thesis within a funded timeframe that is shorter than other councils. Moreover, the mental wellbeing of PhD and post-doctoral students is an increasing concern.⁶⁴
- 4. If ESRC post-docs are going to develop the skills-set to become future world leaders in their field then the evidence suggests that they need to be located within a far more vibrant, challenging and long-term talent management framework.
- 5. The decision to abolish the small grants scheme is widely felt to have left an important ‘gap’ in the researcher development pathway.⁶⁵ This decision is a particular issue for ECRs who were unsuccessful in applying for ‘Future Leader’ or ‘New Investigator’ Awards.
- 6. There is little emphasis on reciprocity and the professional obligation of award-holders to contribute something back into the broader research community (a point made in the Nurse Report of Nov. 2015).⁶⁶
- 7. In terms of ensuring agility, maximising efficiency and maintaining capability, the evidence suggests that unlike other research councils the ESRC is currently failing to develop a positive ‘cadre effect’. (Other councils organise annual conferences and networking opportunities for their PhD and Post-doc researchers.)
- 8. There is little evidence of formalised or co-ordinated attempts to foster dialogue, interaction and mutual support in ways that innovate across borders (either horizontally or vertically).
- 9. If there is a ‘gap’ in the ESRC’ current provision it relates not only to ECRs but to top-level research leadership. Other disciplines are developing senior research leadership programmes that are focused on facilitating world-class research.
- 10. In recent years a number of boundary-spanning platforms have been established and raise distinctive questions about the changing nature of research leadership, the existing incentives and reward framework, and the relationship between the social sciences and society.

The last four of these points deserve a slightly longer explanation:

Firstly, the existing evidence suggests a failure to develop what is broadly known as a ‘cadre effect’ through which individuals at similar stages in the career structure and facing similar challenges are brought together to offer mutual support, spread ‘best practice’, develop new initiatives, share skills, etc. PhD students now work within the network of regional Doctoral Training Partnerships that are explicitly designed to create a community of scholars that connects institutions and disciplines. This network creates a certain ‘cadre effect’ with a distinct collective identity, support processes and development opportunities that work through both formal and informal channels, and it also produces a foundation on which to build and innovate. The annual cohorts of ‘Future Leaders’ - now ‘New Investigators’ – would provide a powerful basis for the creation of a national cadre of ECRs, but very few, if any, structures currently exist to bring researchers at this level together. The evidence base suggests that networking opportunities, innovative platforms and crucible-like events could provide a powerful way of forging long-term research focused support structures. At the other end of the professional journey the directors of ESRC research centres, institutes and major investments provide a particularly valuable repository of knowledge and experience that appears to be under-utilised. **And yet to focus solely on specific cohorts and ‘the cadre effect’ risks failing to maximise the potential efficiencies offered by a fresh approach to thinking about researcher development and leadership.**

Secondly, the creation of cadres, colleges or teams that bring researchers together in a network that provides mutual support and inspiration is a common element of leadership development programmes in the private

⁶⁴ Levecque, K. et al. (2017). Work Organization and Mental Health Problems in PhD Students. *Research Policy*, 46(4), pp. 868-879; Wisker, G. (2011). *Troublesome Encounters: Strategies for Managing the Wellbeing of Postgraduate Education Students During Their Learning Processes*. Bristol: ESCalate.

⁶⁵ This issue was underlined in the Nurse Report, p. 13.

⁶⁶ A point made in the Nurse Report in relation to finding high quality reviewers for grant applications. The report suggests making some commitment to this activity ‘a condition of grant receipt’ (p. 2).

sector. It is a way of building social capital within a professional context in the sense of high-trust low-cost networks that emphasise collaboration. **A creative approach would, however, think more creatively and focus not on specific cadres or career stages, but on the positive interaction between specific groups or levels. This approach would focus on specific transition points and the nexus between different stages of the research career.** This method introduces a focus on vertical and horizontal interaction vis-à-vis researcher development and leadership in the sense of optimising capacity through a focus on positive ‘spill-over’. For example, the scholars at stage 3 and 4 could play a more active and formalised role in relation to supporting those at stages 1 and 2 through mentorship, training, secondment opportunities, etc. This vertical emphasis would create potential leverage between scholars at different career stages. Post-doctoral ‘New Investigators’ (Stage 2) could play a role in organising events or more informally mentoring PhD students. Stage 4 researchers could play a critical role in preparing those at Stage 3 who are keen to step-up to the directorship of a research centre or institute. The opportunity to pair-up individuals that would not otherwise meet - from different institutions, disciplines, methodological approaches - is a potentially transformative component of this focus on vertical interaction where the most significant impacts are generally unanticipated. More creatively, a focus on horizontal interaction could attempt to forge relationships between researchers and potential research. As section 5.6 illustrates, the NHS Leadership Academy, Local Government Academy and Civil Service Leadership Academy for example, all run leadership development courses for people at different career stages that also have significant research-related components. These could provide rich collaborative platforms that could connect different forms of expertise and knowledge, facilitate inter-sectoral mobility and inject a challenge element into both research and policy-making. **The evidence that innovations such as this are urgently needed is provided in the Institute for Government’s report of June 2018 - *How Government Can Work with Academia*.**⁶⁷

The third point is more specific. **If there is a complete gap in the ESRC’s current thinking about researcher development and leadership, then the evidence suggests that it exists at the top-end of the research career rather than at the beginning.** At the moment the evidence suggests that being promoted to full professor is widely seen as a ‘final promotion’ and therefore the end or peak of a career.⁶⁸ This raises a set of questions about maintaining and incentivising ambition for both early and established researchers. The social sciences face a number of significant challenges and opportunities that focus attention on the need to think ambitiously and about the development of a group of researchers who have the ability to not only undertake a (internal) leadership role within larger challenge-focused inter-disciplinary projects, but also to act as (external) ambassadors and advocates for the social sciences in a number of arenas and other different contexts. Other disciplines are attempting to fill this gap through the introduction of **senior research leadership programmes which may offer novel insights, ideas, or even partnership opportunities (discussed below).**

Finally, **in recent years the ESRC has invested in a number of boundary-spanning initiatives in an attempt to build inter-disciplinary and cross-sectoral partnerships.** This includes the ‘What Works’ network, a number of ‘Nexus Networks’ and a variety of ‘hubs’ or knowledge-exchange projects.⁶⁹ These initiatives have played a major role in demonstrating why the social sciences matter, in forging relationships with research-users and in helping to inform public debate. However, the evidence suggests a need to review these boundary-spanning initiatives as part of a more fundamental and strategic approach to research leadership, as the changing research landscape is likely to increase the demand and value of these investments. The manner in which these platforms provide new opportunities in terms of developing a variety of research-related leadership skills is poorly understood but potentially significant. The broader science base needs to know (1) more about ‘what works’ in relation to leading a boundary-spanning initiative and (2) how the insights and expertise gleaned from these investments might be disseminated out more

⁶⁷ Sasse, T. and Haddon, C. (2018). *How Government Can Work with Academia*. London: Institute for Government.

⁶⁸ See Evans, L. (2018). *Professors as Academic Leaders: Expectations, Enacted Professionalism and Evolving Roles*. London: Bloomsbury, p. 174.

⁶⁹ *Leadership Insights* (2017). *What Works: The Concept. Exploring the Possibilities of a Platform for Higher Education Leadership, Governance and Management*. London: Leadership Foundation for Higher Education.

usefully across the social science community.⁷⁰ However, the evidence presents a second issue that relates to talent management and leadership in this sphere – the fact that the primary focus of these bodies is knowledge-dissemination, relationship-building and the facilitation of trans-disciplinary research, rather than a more traditional focus on research, writing and grant income. This has major implications in terms of thinking about leadership and cultivating talent for the simple reason that the incentive and reward framework within academe has scientific publications and grant income as its main currency. As James Wilsdon, Director of the Nexus Network, outlined in the project’s final report.

[L]eading a Network Plus is nothing like being PI of a research project. You have no funding to do any meaningful research of your own. Depending on one’s career stage, devoting this much time to a leadership role that yields few academic outputs – and lacks even the internal visibility of an institutional management role – could be risky or damaging for some researchers’ careers. There are few incentives or rewards for taking on such a role. At a personal level, running the Nexus Network undoubtedly reduced the number and quality of publications I produced from 2014 to 2018 – and by the time of the next REF, this contribution to social science leadership will have been forgotten. Current academic reward systems don’t recognise the value of such activities.⁷¹

A number of obstacles and challenges currently exist in relation to incentivising and recognising contributions to researcher development and leadership. These form the focus of the next section.

However, before moving on it is necessary to think about current capacity *vis-à-vis* researcher development and leadership *beyond the role of the ESRC and research councils*. The evidence presented so far suggests that the research councils have traditionally distanced themselves from issues pertaining to research infrastructure and have seen this as the responsibility of ROs. Its current capacity to ‘shape the future’ in terms of the specific principles and actions identified by the Global Research Council (Table 1, above) or respond to the International Social Science Council’s plea for a ‘new kind of social science [that is] bolder, better, bigger and different’ appear limited. This raises questions about the role and provision provided by ROs (either directly or through specialist agencies). **To what extent do ROs engage in talent management or leadership development in relation to research?**

The main answer to this question is that provision at the level of ROs appears from the evidence to be extremely limited.

- The main focus is on researcher development (i.e. ECRs) rather than on supporting and developing research leadership capabilities amongst mid-career and senior staff.
- When provision for ECRs is provided, it tends to be very broad, generic and rarely focused on cutting-edge developments at the forefront of social science.
- This does not provide an attractive ‘offer’ to busy early career researchers and academic engagement can therefore be very low.
- A small number of research focused universities do deliver high quality provision but there are few incentives for ROs to share ‘best practice’ in an increasingly competitive environment.
- Professional research support staff often lack access to a pool of leading scholars that are willing to offer state-of-the-art masterclasses, case studies of success or failure, etc.
- The vast majority of leadership development courses offered by ROs have very little to do with research but are in fact focused on managerial leadership and succession planning.
- Thinking about co-design in the context of researcher development and leadership may help close the gap that often seems to exist between academic and professional support staff.

⁷⁰ A 2018 report that examined how the creation of ‘what works’ centres has impacted upon the pre-existing ‘knowledge ecosystem’ concluded that opportunities existed for more collaboration across the network. See. Gough, D., Maidment, C. and Sharples, J. (2018). UK What Works Centres: Aims, Methods and Contexts. London: EPPI-Centre, Social Science Research Unit, UCL Institute of Education, University College London.

⁷¹ Wilson, J. (2017). ESRC Research Network Plus Directors Final Report. Swindon: ESRC, pp. 31-32.

The evidence suggests that where ROs do provide leadership development training or support it remains primarily focused on the organisational needs of institutions in terms of filling specific administrative and managerial roles and not on ensuring a successful research endeavour.⁷² Where provision is provided it is almost exclusively aimed at ECRs and tends to be focused on fulfilling the requirements of specific funding opportunities rather than on promoting a more vibrant approach which is aligned to current or future needs. Therefore, although some researcher development and leadership provision is available, and may be of value to newcomers, it is not generally thought useful and is often described as ‘rather amateur’.⁷³

There is very little evidence of continuing professional development for senior staff (although the majority interviewed said they would welcome it).⁷⁴ Leadership skills are generally thought to be honed through a combination of practical experience and through opportunities and events provided by their respective scientific community (i.e. attending conferences, reviewing grant applications, supervising post-docs, etc.). A small number of research-intensive universities can afford to run innovative and well attended research leadership courses that trespass across disciplines, provide incentives to engage and that can facilitate inter-sectoral mobility.⁷⁵ Yet this remains the exception rather than the norm. It is actually very hard to secure information about the researcher development and leadership provision that many ROs provide. In some cases this reflects a dearth of material but in others it reflects a desire to actively withhold information on the basis that attracting, developing and retaining world-class researchers is part of an increasingly aggressive and competitive market environment. As the Nurse report highlighted, ‘The University sector and the Research Councils should establish a culture that improves effectiveness and encourages collaboration, and not just competition, between institutions’.⁷⁶ **This competitiveness represents a significant issue for the development of the broader social science base.**

Table 3. Core Training and Support Provision: Advance HE

Advance HE (Leadership Foundation)	<p><i>‘Top management programme’</i> – aimed at vice chancellors, PVCs, chief executives. Two four-day residential events, international group assignment plus one-to-one coaching.</p> <p><i>‘Strategic Leadership Programme’</i> – Generic leadership course for mid/senior level staff with a focus on collaborative activity.</p> <p><i>‘Research Team Leadership’</i> – Two-day introductory course primarily for individuals new to research leadership.</p> <p><i>‘Leading departments’</i> – Two-day introductory course.</p> <p><i>‘Aurora’</i> – Mid-career, woman only generic leadership course.</p> <p><i>‘Research Leaders Impact Toolkit’</i> – Resource for thinking about maximising research impact.</p>
---------------------------------------	--

There are specialist organisations that are active in terms of offering researcher development and leadership-related provision. The evidence suggests, however, that a mismatch exists between what these organisations generally provide and what social scientists suggest they need. The main providers in this space are the Leadership Academy for Higher Education (now within Advance HE) and *Vitae*. Their core portfolio of courses is listed in Table 3 (above). There are other organisations and companies offering similar services but the Leadership Academy and *Vitae* are the key organisations. What the evidence suggests is that both these organisations offer a broad high-value provision across the scientific

⁷² This issue was noted in a focus group with ARMA professionals, where one participant stated that ROs ‘need to think about research leadership courses that are not just management focused’.

⁷³ See, for example, Deem, R. (2010). Herding the Academic Cats. *Perspectives: Policy and Practice in Higher Education*, 14(2), 37-43 (p. 39); See also, Browning, Thompson and Dawson. From Early Career Researcher to Research Leader, p. 364.

⁷⁴ *Vitae*. Five Steps Forward, p. 13.

⁷⁵ Examples include the Cambridge Institute for Sustainability Leadership and the Centre for Research in the Arts, Social Sciences and Humanities (CRASSH), both at the University of Cambridge, and the London Centre for Leadership in Learning (LCLL) at University College London Institute of Education.

⁷⁶ The Nurse Report, p. 14.

community. They also fulfil slightly different roles. **Interviews, focus groups, and discussions have underlined the existence of a mismatch between supply and demand.**

What academics say they want and need – especially those at the beginning of their careers – is researcher development and leadership support that is very specific, focused around particular challenges, underpinned by case studies, and delivered by people that have actually ‘gone up through the gears’ themselves (as one interviewee put it). The preference is for experiential learning and the opportunity to develop skills in new contexts. The demand is also for the chance to join professional networks that bring them into contact with people from beyond their own institution and discipline. The opportunity to meet research-users in order to foster skills in relation to co-production and co-design also emerged as a key request. High-quality and committed mentorship was by far the most common demand. **What academics say they get, but do not need**, is a patchy and often short-term provision, very basic and generic classroom based delivery which discusses a large number of leadership traits, models, competencies, concepts and frameworks that provide very little specific support in terms of helping participants navigate the pressures of day-to-day reality of academic life. **Our focus groups and interviews suggest that the main value in attending these courses stems not from the actual formal content, but often from the more informal opportunity to meet researchers from different disciplines, and at a similar career stage, that participants would not normally get the chance to meet.**

Table 4. Core Training and Support Provision: Vitae

Vitae	<i>Leadership in Action</i> – three-day residential for PhD and research staff <i>Preparing for Leadership</i> – two-day course <i>First Time Academic Leadership</i> – One-day course <i>Effective Researcher I/II/III/IV/V</i> <i>GRADschools</i> <i>Research Staff Futures I/II/III/IV</i> <i>Collaborative Researcher</i> – 2 days <i>Enterprising Researcher</i> – 1 day <i>Engaging Researcher</i> – 1 day <i>Preparing for Leadership for Research Staff</i> – 2 days <i>Developing the Next Generation of Leaders</i> – half-day
-------	--

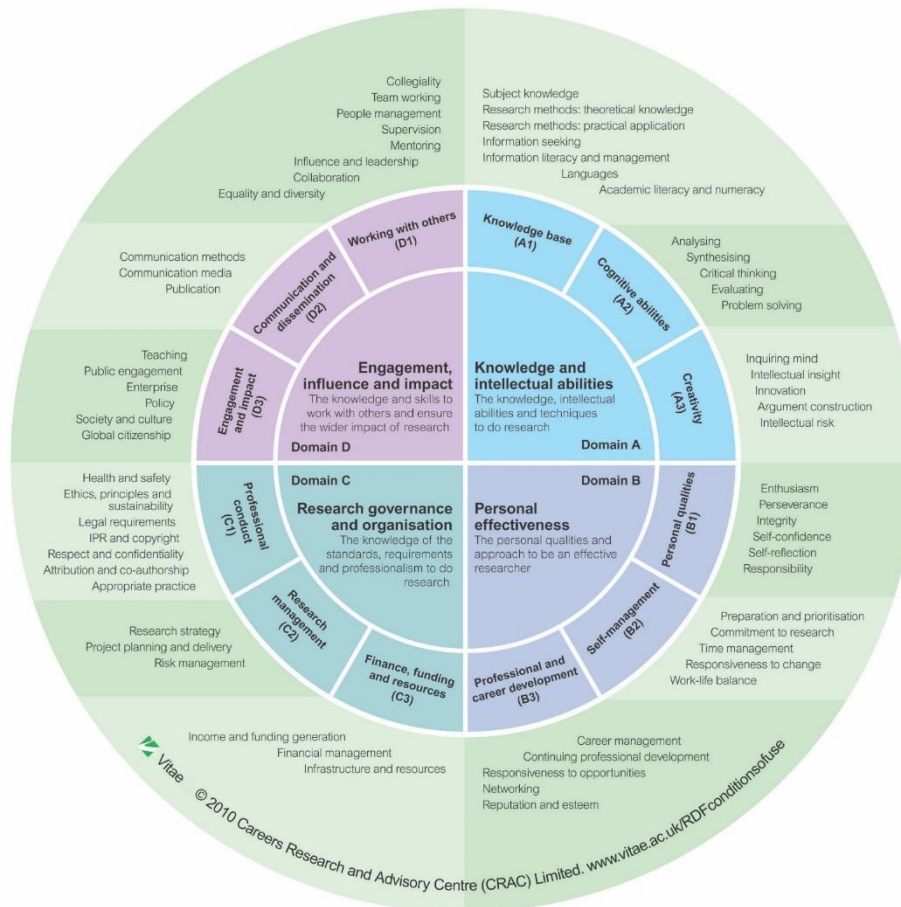
This raises important questions about the potential of Advance HE or Vitae to address this mismatch. Advance HE is primarily focused on supporting administrative and support staff within ROs (i.e. on institutional leadership, ‘executive’ leadership but not research leadership). This administrative focus stems from the emergence of the Leadership Foundation out of the abolition of the Higher Education Staff Development Agency in 2003. Although it has undertaken some valuable research in relation to researcher development and the role of research support staff, most of its courses revolve around organizational development and managerial progression. Where research leadership is the core focus – as with the ‘Research Team Leadership’ (RTL19) course – the level of provision possibly understates the scale and nature of the research leadership challenge faced by the social sciences. Vitae, by contrast, is more focused on research development which, in turn, reflects its emergence out of the Careers Research and Advisory Centre that was established in 1964. A fully developed Research Development Framework exists at the heart of Vitae’s package of services and courses (Diagram 1, below). It supports the implementation of the Concordat to Support the Career Development of Researchers,⁷⁷ the QAA Code of practice for research degree programmes,⁷⁸ and the ‘Roberts’ recommendations for postgraduate researchers and research staff.⁷⁹ **Vitae’s Researcher Development Framework reflects the manner in which success in research increasingly requires team, rather than individual, effort in complex research environments.**

⁷⁷ The Concordat Strategy Group and Vitae (2018). The Concordat to Support the Career Development of Researchers. Cambridge: The Concordat Strategy Group and Vitae.

⁷⁸ The UK Standing Committee for Quality Assessment (UKSCQA) and QAA (2018). The UK Quality Code for Higher Education. London: The UK Standing Committee for Quality Assessment (UKSCQA) and QAA.

⁷⁹ Great Britain. HM Treasury. The Report of Sir Gareth Roberts’ Review.

Diagram 1. Vitae Researcher Development Framework



The Vitae Researcher Development Framework is an internationally recognised and evidence-based programme that does seem to reflect the broad range of skills and attributes required by a successful researcher. For example, the Vitae GRADschools offer experiential learning courses that develop the transferable skills of doctoral researchers and also provides experiences that include a range of employment settings and challenges. More broadly, Vitae’s approach draws heavily on practical insights, interactive case studies and real-world problems; it offers an understanding of the changing research landscape and the emergent ‘innovation landscape’. The Vitae ‘offer’ therefore appears attractive, however, the evidence collected by this review suggests four issues: First and foremost, Vitae’s main provision focuses on the beginning of the professional journey (i.e. on researcher development rather than research leadership). Realising the potential of the most outstanding researchers who have already established an independent and international profile remains a gap in their provision. Secondly, universities are operating in an increasingly squeezed and uncertain financial environment and as a result there is a shift of emphasis towards teaching and away from research. Funds to commission Vitae are therefore increasingly limited and likely to be short-term. This issue may explain why very few focus group participants or interviewees were aware of Vitae’s services. Thirdly, although Vitae does offer specialist consultancy services, the bulk of its work revolves around the provision of training programmes and workshops. What researchers really seem to want is not a one-off, short-term courses but long-term mentoring relationships with senior researchers who have practical and disciplinary-specific experience of leading successful projects. Finally,

Vitae has limited central capacity and most of its programmes and workshops are delivered by accredited trainers who may lack recent or high-level research experience.⁸⁰

Specific Evidence Implications for the ESRC

- *At the broadest level researcher development and leadership support structures are under-developed, fragmented and offer partial coverage in terms of the professional journey.*
- *Leadership development is rarely viewed in anything other than managerial or organisational terms by institutions and this creates a major vulnerability when it comes to the capacity to run increasingly large and complex research projects, centres, programmes or institutes.*
- *Many researchers appear to be ‘muddling through’ via a combination of self-leadership, luck, informal mentorship and trial-and-error.*
- *Researchers express a strong preference for professional support structures that are context-driven and action-orientated and that offer experiential learning opportunities, relevant case studies, peer-to-peer and reverse mentoring and the chance to experience new environments. They want leadership-as-practice.*
- *The four-stage LERU research career framework provides a valuable way of linking skills to career stage and also of focusing on critical-transition points along a career journey. However, an ambitious strategy might seek to focus on top-talent management through the introduction of a new fifth phase.*
- *The research councils have historically adopted a rather laissez-faire approach to talent management and research leadership on the assumption that research organisations or scientific communities would ensure the correct blend of skills and competencies were in place.*
- *The changing nature of research places limits on the capacity of individual institutions or disciplines to respond to the leadership challenge while arguably also highlighting the potential need of UKRI to think more strategically around research infrastructure and forging collaborative practices.*
- *The adoption of a stronger ‘leadership lens’ by the ESRC across all of its activities and funding streams could significantly enhance the value of existing investments while also potentially driving forward progress in relation to equality, diversity and inclusion.*

⁸⁰ Deem, Herding the Academic Cats; Whitchurch, C. and Law, P. (2010). Optimising the Potential of Third Space Professionals in UK Higher Education. London: Leadership Foundation for Higher Education.

5.4 - What does the evidence suggest are the main obstacles or challenges to promoting researcher development and leadership?

The existing research base reveals a number of challenges to building the research leadership skills that will be needed over the coming decades. These include organisational structures, individual incentive systems, and the existence of a strong cultural antipathy towards the concept of 'leadership' which, although common in higher education, is particularly lacking within the social sciences.

Success in research increasingly requires team rather than individual effort in complex research environments. These teams are increasingly challenge-orientated and diverse in terms of composition. Playing a leadership role in a project like this demands skills that have not traditionally been developed within the social sciences, thus creating a major challenge. This section looks at the evidence regarding the main obstacles that meeting this challenge is likely to face. It draws upon published material and research undertaken specifically for this review. What it reveals is a set of structurally embedded issues that currently shape and constrain the behaviour of academics. The incentives and sanctions framework within which academics operate generally appears from the evidence to reward a mode of behaviour and an approach to scholarship that is significantly misaligned with the changing research landscape. This matters for at least two reasons. At the broadest level these barriers matter because they prevent the ready flow of ideas, skills, and people which is central to the existence of a vibrant research endeavour. At a more basic level, the evidence suggests that introducing individually or institutionally-focused reforms to strengthen research development and leadership capacities will have little impact unless accompanied by measures which seek to address some of these broader structural issues. **Understanding these obstacles and challenges provides a deeper understanding of the research leadership challenge and how it might be addressed successfully. The evidence proposes the existence of at least five obstacles** (set out in Table 5, below). Some of these are relatively well-known (e.g. facilitating inter-disciplinary research) and have existed as acknowledged challenges for some time, while others have not received the attention they deserve (e.g. the dis-incentives surrounding inter-sectoral mobility).

Table 5. Main Obstacles to Building Researcher Development and Leadership Capacity

OBSTACLE	IMPACT	EVIDENCE
Unbundling & Precarity	Opportunities to embark on a research career are shrinking and moving between professional pathways is very difficult. Increased vulnerability amongst early career staff may result in 'lost leaders'.	HEA. 2016. <i>Shifting Landscapes: Meeting the staff development needs of the changing academic workforce</i> , London.
Pressure & Risk	Academics exist within an increasingly pressured professional environment. Dedicating time to research leadership roles is often viewed as too risky and not recognised or rewarded by ROs.	Nuffield Council 2014. <i>The Culture of Scientific Research in the United Kingdom</i> . London.
Silos & Audit	Despite the emphasis on inter-disciplinary and collaborative research the institutional architecture of academe remains forged around discipline-based units and audit structures.	McLeish, T and Strang, V. 2014. <i>Leading Inter-Disciplinary Research: Transforming the Academic Landscape</i> , Leadership Foundation.
Recognition & Reward	Reward and recognition frameworks remain individualised. This acts as a major blockage in forging more innovative and vibrant team-based research platforms.	Academy of Medical Sciences 2016. <i>Improving Recognition of Team Science Contributions...</i> London.
Entry & Exit	Despite a growing emphasis on fluidity and 'open knowledge processes', inter-sectoral mobility remains difficult in the social sciences. It is very difficult for 'lost leaders' to re-enter academe.	European Commission 2018. <i>Study on Fostering Industrial Talents in Research at European Level</i> . Brussels.
Equality & Diversity	Embedded structural inequalities continue to ensure that the researcher development and leadership landscape is not a flat one. Intersectionality compounds the impact of these challenges (e.g. women of colour face particular obstacles) and limits the dynamism of the overall research base.	Universities & College Union 2019. <i>Staying Power: The Career Experiences and Strategies of UK Black Female Professors</i> . London.

The first obstacle revolves around **the changing structure of higher education in the UK** and the emergence of two trends that have combined to fundamentally alter the notion of an academic career. The first of these is the ‘unbundling’ of academe whereby it is now possible to identify a much clearer separation between ‘teaching-related’ staff and ‘research-related’ staff.⁸¹ A shrinking proportion of academic staff have a formalised research component within their contract, tenure is increasingly hard to secure, and an increasing number of academics, particularly at the beginning of their careers, are employed on fractional temporary positions. Moreover, the pressure of short-term contracts and negligible job security has also proven to be detrimental to the mental health of academic staff.⁸² In focus groups and interviews, it was noted that academics on fractional or teaching only contracts was as a problematic area that required attention. As one participant described, the ‘issues these colleagues face are often similar to colleagues who’ve just completed their PhDs – going from fixed term contract to fixed term contract, trying to write grant applications outside their normal working hours, struggling to maintain contacts at universities because they are made an outsider as soon as their contract ends, having to move institutions (often because ‘mobility’ is seen as a positive – see for example the Leverhulme early career fellowships)’. As Vitae’s *Five Steps Forward* report noted, in 2017 the proportion of CROS respondents ‘72% were employed on a fixed-term contract and 27% an open-ended (or ‘permanent’) contract’.⁸³

What the evidence reveals is the emergence of an increasingly precarious profession – what Whitchurch labels ‘the rise of the itinerant academic’ – which underlines the increasing contextual pressures of academic life, especially for ECRs.⁸⁴ The *Concordat to Support the Career Development of Researchers* was signed in 2008⁸⁵ in recognition of the vulnerability faced by fixed-term researchers and followed the 2005 *European Charter for Researchers*.⁸⁶ However, the *Review of the Concordat to Support the Career Development of Researchers* that was published in June 2018 concluded that ‘progress in implementing the Concordat is variable across the Principles and inconsistent across employing institutions’.⁸⁷ The review concluded that ‘additional drivers’ were needed to drive positive change. It also emphasised the breadth of research-related career options beyond academe and the need to facilitate greater inter-sectoral mobility (discussed below). **Very few of the social scientists involved in this evidence review were aware of the existence of the Concordat.**

The ‘unbundling’ of academic roles into increasingly diversified career paths raises the issue of shifting paths and the challenges of developing a research career when holding a portfolio of fractional teaching-only contracts (especially when these contracts might be spread across a number of institutions). With a limited and relatively small number of post-doctoral fellowships available in the social sciences, and an increasing number of talented researchers in teaching-only positions, the potential for ‘lost leaders’ appears to be significant. The need to be able to demonstrate an independent research trajectory and a publications profile places huge pressure on these early career researchers to undertake unpaid work in the hope that they might maintain a position as credible candidates for research-related positions in an increasingly competitive job market. **The evidence suggests that the increasingly precarious position**

⁸¹ See Locke, W. (2016). *Shifting Landscapes: Meeting the Staff Development Needs of the Changing Academic Workforce*. York: The Higher Education Academy. Available from:

https://www.heacademy.ac.uk/system/files/resources/shifting_academic_careers_final.pdf; ACE (2014).

Unbundling Versus Designing Faculty Roles. Presidential Innovation Lab, White Paper Series. Washington: American Council on Education. For a detailed a detailed overview of international discussion of the changing working conditions and divisions of labour in Higher Education, see Whitchurch, C. (2018). *From a Diversifying Workforce to the Rise of the Itinerant Academic*. *Higher Education*, 1-11 (p. 1).

⁸² Tytherleigh, M.Y. et al. (2005). Occupational Stress in UK Higher Education Institutions: A Comparative Study of All Staff Categories. *Higher Education Research and Development*, 24, pp. 41-61.

⁸³ Vitae. *Five Steps Forward*, p. 11.

⁸⁴ Whitchurch. *From a Diversifying Workforce to the Rise of the Itinerant Academic*.

⁸⁵ The Concordat Strategy Group and Vitae, *The Concordat to Support the Career Development of Researchers*.

⁸⁶ European Commission (2005). *European Charter and Code of Conduct for the Recruitment of Researchers 2005*. Brussels; Luxembourg: European Commission. Available from: <https://www.vitae.ac.uk/policy/european-charter-and-code-of-conduct-2005-vitae.pdf>

⁸⁷ The Concordat (2018). *The Independent Review of the Concordat to Support the Career Development of Researchers*. Cambridge: Vitae. Available from: <https://www.ukri.org/files/skills/concordatreviewreport-jun2018-pdf/>

of an increasing number of research staff has significant implications for research development and leadership.

It is not just those researchers who are trying to get their foot on the first rung of the academic ladder that are facing increased pressures. Light and Cox describe a millennium ‘storm’, in which, for academics, ‘the demands on their time and the complexity of those demands are changing and escalating almost exponentially’.⁸⁸ These demands include the pressures to increase the number and standard of research outputs, deliver demonstrable research impact and knowledge transfer, apply for and obtain external research grants while also delivering excellence in teaching and coping with increasingly demanding administrative burdens.⁸⁹ The evidence base suggests that in this context attending research development training or support was a luxury that few academics thought they could afford.⁹⁰ **It also suggests that an increasing number of academics are reluctant to undertake research leadership roles for fear that engaging in this activity will not be recognised or rewarded by employers.**

A ‘reluctance to lead’ that has for some time been associated with academics may therefore have been amplified by increasing pressures and expectations.⁹¹ The evidence emerging from focus groups, discussions, and interviews suggests that social scientists are aware of the changing research landscape and the shift toward inter-disciplinary challenge-orientated funding streams but are concerned by two risk-related factors. The first is a sense of lacking the time, expertise and incentives to take on a leadership role within the development of a major team-based research project. The investment of large amounts of research time – over many months and possibly several years – in building the platforms and forging the necessary relationships, when the actual chances of success are very low, is thought to be too risky. Moreover, it is widely felt that ROs generally fail to recognise or reward the time and energy that staff make in pulling-together large grant applications. Unless a grant application is successful those academics may actually find themselves in a vulnerable position vis-à-vis a range of individually focused audit and performance reviews.

It cannot be ignored that more can be done in order to promote inclusivity and diversity through a research development and leadership framework. The SAGE Handbook of Research Management noted that research leaders often produced clones of themselves, and the lack of diversity was detrimental to an effective research team.⁹² This idea has also been explored in the Leadership Foundation report on ‘Leading Academic Talent to a successful future’ that quotes a vice-chancellor as stating:

University councils have been some of the worst offenders because they tend to be populated by people who reproduce themselves. We are only going to get real change when the leadership of the university is committed to change. If the governing bodies are not diverse and make appointments that are not diverse, then it becomes self-perpetuating.⁹³

It has been noted that leadership development in higher education is a useful opportunity for creating a mechanism for promoting diversity and equality. By aligning with other organisational initiatives, leadership development could be employed as an instrument for promoting positive working environments, whilst also encouraging the progress of organisational values and priorities.⁹⁴

The evidence also suggest that concerns exist amongst the academic community as to whether the ESRC is capable of supporting and funding large grants that embrace innovation and empower research leaders

⁸⁸ Light, G. and Cox, R. (2009). *Learning and Teaching in Higher Education: The Reflective Professional*. London: Sage Publications, p. 1.

⁸⁹ Action, S. et al (2019). *The Life of P.I.: Transitions to Independence in Academia*. *bioRxiv*, pp. 1-9.

⁹⁰ See Locke. *Shifting Landscapes: Meeting the Staff Development Needs of the Changing Academic Workforce*.

⁹¹ For a review see Burkill, S. (2017). *Reluctant to Lead?: Perspectives on Academic Educational Leadership in a Research Intensive University*. PhD Thesis, University of Exeter. Available from: <http://hdl.handle.net/10871/31662>.

⁹² Dinwall, R. (2018). *The SAGE Handbook of Research Management*. London: SAGE Publications, p. 613.

⁹³ Tysome. *Leading Academic Talent to a Successful Future*, p. 21.

⁹⁴ Bolden, R., Petrov, G. and Gosling, J. (2008). *Developing Collective Leadership in Higher Education*. Research and Development Series. London: Leadership Foundation for Higher Education, p. 71.

to take risks. A case in point is the issue of non-assigned funding within grant awards that can be assigned at the discretion of the lead investigators. This practice is not commonly authorised within ESRC grants despite the fact that, particularly within inter-disciplinary and collaborative projects, it can be very difficult to identify all spending needs at the outset of a project. Moreover, the most important opportunities in terms of scientific breakthroughs and social impact tend to be unexpected, as illustrated by NESTA's 2010 report *Creating Value Across Boundaries*.⁹⁵ Radical innovations, in particular, tend to arise in ways that *cannot be anticipated* at the outset. **The evidence suggests that other councils are willing to grant researchers far more autonomy in the management of funding in order to facilitate genuinely discovery-orientated research.**

While flexibility has been highlighted as one issue, a second issue exists that relates to the generosity of funding and whether the available resources are sufficient for the reality of the full potential of collaborative research. There is a strong perception amongst academics that funding awards rarely reflect the true costs of the research, the additional resources and the long timeframes required to build and co-ordinate teams.⁹⁶ Additional specialist professional staff may also be required for all or some part of the project, and the leadership roles adopted by various members of the team need to be recognised and facilitated through the provision of, for example, teaching-replacement costs. What came out of many discussions and focus groups, however, was that potential applicants felt that submitting the full costs of a project would reduce the likelihood of funding. As a result, several other contributors complained that when they had led successful applications for large collaborative grants, they had received very little or no dispensation from their regular administrative and teaching responsibilities.

The cross-sectoral analysis of successful interdisciplinary innovation in the UK, sponsored by NESTA and conducted at the Centre for Research in the Arts, Social Science and Humanities (CRASSH) at Cambridge University, has revealed how **scientific investment has increasingly emphasized the need to support interdisciplinary research**.⁹⁷ The Royal Society report, *The Scientific Century: Securing our Future Prosperity* (2009), is typical in that it recommends that science and innovation can become 'better aligned with global challenges by reforming the UK research funding and assessment to support and reward interdisciplinary work: Connections with and between the natural sciences and the social sciences, arts and humanities will be increasingly vital for innovation'.⁹⁸ However, although documents such as these promote the value of inter-disciplinary studies, they are less clear about how to build the structures that can facilitate truly collaborative research. **This mismatch between demand and structure was highlighted in the Nurse Report** (Nov. 2015) when it noted,

[Problems] are rarely focused on a single research discipline. By contrast, universities, journals, research councils, professional organisations and learned societies are usually organised more on disciplinary lines. The Research Excellence Framework (REF) which has major influence on the behaviour of UK universities, is also largely discipline based.⁹⁹

The standard **single disciplinary focus that remains in the infrastructure of higher education** has been recognised for some time as highly problematic. The evidence on this point is extensive.¹⁰⁰ A recent edition of *Nature* concluded that inter-disciplinary scholarship 'is harder to fund, do, review and publish – and those who attempt it struggle for recognition and advancement'.¹⁰¹ As the League of European

⁹⁵ Blackwell, A. et al. (2010). *Creating Value Across Boundaries: Maximising the Return from Interdisciplinary Innovation*. London: Nesta.

⁹⁶ Academy of Medical Sciences (2016). *Improving the Recognition of Team Science Contributions in Biomedical Research Careers*. London: Academy of Medical Sciences.

⁹⁷ Wilson, L. and Blackwell, A.F. (2017). Interdisciplinarity and Innovation, in Carayannis, E. (ed). *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship*. New York: Springer International Publishing.

⁹⁸ Royal Society [The] (2010). *The Scientific Century: Securing our Future Prosperity*. RS Policy Document 02/10. London: The Royal Society, p. 40. Available from: https://royalsociety.org/~media/royal_society_content/policy/publications/2010/4294970126.pdf

⁹⁹ The Nurse Report, p. 21.

¹⁰⁰ See for example McLeish and Strang. *Leading Inter-disciplinary Research*; The British Academy (2016). *Crossing Paths: Interdisciplinary Institutions, Careers, Education and Applications*. London: The British Academy.

¹⁰¹ Nature (2015). *Interdisciplinarity: A Special Report* [online]. *Nature*, 17 September 2015. Available from: <https://www.nature.com/news/1.18295>

Research Universities' 2016 report on inter-disciplinarity demonstrates, it also requires patient, flexible investment which is increasingly difficult to secure, and the impacts of work of this nature may not become evident for some time after the formal project funding period has elapsed.¹⁰² 'Time and trust' are viewed as forming the foundations of high-quality inter-disciplinary work but these values flows back to apprehensions about risk and behaviour. The evidence suggests that the existing national research audit framework (i.e. REF) and institutional performance regimes generally combine to ensure that inter-disciplinary research is viewed as being a professionally risky endeavour.¹⁰³ Early career researchers who adopt an inter-disciplinary approach still risk not fitting into established disciplinary boundaries when applying for jobs. They also risk 'not fitting' when it comes to promotion criteria and (critically) external research assessment processes (described as 'career suicide' by one respondent to the British Academy's 2016 review).¹⁰⁴ This risk highlights the role of research leadership in terms of creating the institutional conditions in which inter-disciplinary studies can flourish. As the British Academy's *Crossing Paths* report of July 2016 concludes,

Leadership is critically important to supporting researchers carrying out interdisciplinary work. A strong message of support from the university leadership provides researchers with the security needed to explore collaborative working, and the specific expertise of established academics can help younger researchers or newer teams to develop good projects and secure funding.

The challenge, however, is that the existing evidence base tells us very little about what has been termed 'the science of team science' (SciTS), in general, or how it relates to the social sciences, in particular. **'Team Science' is the concept of conducting research collaboratively to address a scientific challenge that uses the expertise and strengths of professionals and academic from a range of fields and disciplines.**¹⁰⁵ **We know very little about different models of team science research leadership, 'what works' in relation to institutional structures and inter-institutional relationships, or – critically - what leadership development for team science research leaders might usefully look like.**¹⁰⁶ These are major gaps in the current evidence base that could be filled through SciTS-focused research on a number of inter-disciplinary research centres that have been established in recent years. These include: the Institute of Advanced Study (Durham University), Crick Centre (University of Sheffield), Oxford Research Centre in the Humanities- TORCH (University of Oxford), Centre for Inter-Disciplinary Methodologies (University of Warwick), Centre for Research in the Arts, Social Science and Humanities – CRASSH (Cambridge University), the Rights Lab (University of Nottingham) and the Neuro-Politics Research Laboratories (University of Edinburgh). A critical element of 'SciTs' relates to whether reward and recognition systems actually incentivises collaborative scholarship or whether they act as barriers to innovation and mobility. **The evidence suggests that a lack of recognition continues to impact negatively on individuals who participate in 'team science'.**

Our findings indicate that academic reward and recognition systems have failed to match the growth of team working; A key finding was that the likely lack of recognition for one's contributions is the main challenge for researchers participating in team science. It appeared that career development issues were consistent, regardless of the size of teams. Therefore, academic recognition must embrace a fundamental change: it must

¹⁰² Wernli, D. and Darbellay, F. (2016). *Inter-Disciplinarity and the 21st Century Research-Intensive University*. Leuven: League of European Research Universities (LERU).

¹⁰³ See Stern, N. (2016). *Building on Success and Learning from Experience: An Independent Review of the Research Excellence Framework*. London: Department for Business, Energy and Industrial Strategy. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/541338/ind-16-9-ref-stern-review.pdf

¹⁰⁴ The British Academy. *Crossing Paths: Interdisciplinary Institutions, Careers, Education and Applications*, p. 189.

¹⁰⁵ Cooke, N. et al. (2015). *Enhancing the Effectiveness of Team Science*. Washington DC: National Academies Press; Falk-Krzesinski, H. et al. (2010). *Advancing the Science of Team Science*. *Clinical and Translational Science*, 3(5), pp. 263-266.

¹⁰⁶ For a discussion see Falk-Krzesinski et al. *Advancing the Science of Team Science*, pp. 263-266; Cooke et al. *Enhancing the Effectiveness of Team Science*.

provide improved information about the contributions of individual team members and use and value it in assessment.¹⁰⁷

Reward and promotion structures in the social sciences generally only recognise scientific publications where the applicant is the sole or lead author, and research grants where they are the Principal Investigator and not a co-investigator. The Nuffield Council on Bioethics came to a similar conclusion in 2014 after surveying almost a thousand people and holding fifteen discussion events at universities all over the UK. The final report concluded that scientists are motivated in their work to find out more about the world and to benefit society, and that they believe collaboration, multi-disciplinarity, openness, and creativity are important for the production of high-quality science. However, in some cases, the report concluded that the culture of research in higher education institutions does not support or encourage these goals or activities. For example, high levels of competition and perceptions about how scientists are assessed for jobs and funding are reportedly contributing to a loss of creativity in science, less collaboration and poor research practices.¹⁰⁸ Focus groups and interviews with social scientists for this report revealed a similar sense of concern. Although ECRs appear to embrace the need for collaborative research, the advice they very often receive from their supervisors or mentors is to avoid team-based projects or co-authored publications.¹⁰⁹ In the Academy of Medical Science's report 'From Innovation to Implementation: Team Science Two Years On' (2019), one of the main recommendations was 'The use of 'key' positions on publications and grants as the primary indicator of research performance, leadership and independence in team science projects should be replaced by transparent, fair processes'.¹¹⁰ They also recommended that 'Clear career paths and development opportunities should be provided for researchers outside of the 'PI track' who play key roles in (and provide key competencies to) team science, such as skills specialists'.¹¹¹ As NESTA's *Creating Value Across Boundaries* report (2010) has noted, 'reward structures and professional development are heavily skewed towards individual appraisal and accomplishment'.¹¹² The basis of this advice seems to be a perception that team working may well be 'frowned upon' when it came to appointment or promotion procedures, and (worse still) could be interpreted as reflecting a failure of capacity in relation to being able to establish an 'independent' research profile. Evidence presented in NESTA's *Creating Value Across Boundaries* report states that:

Many of our expert witnesses and sources repeatedly worried about their career prospects, and there is evidence that interdisciplinary work can be bad for academic career advancement. These problems are particularly pertinent to younger researchers who are yet to be strongly established in their discipline. Without a firm disciplinary base they risk being known as a 'jack of all trades'.¹¹³

These findings are echoed in the League of European Research Universities *Delivering Talent* report of 2018.¹¹⁴ **Instead of motivating world-class research, there is evidence that the existing reward and promotion structures are choking the creative and collaborative capacities of the next generation.**

This brings us to the **important issue of inter-sectoral mobility. This reintroduces the theme of 'open-knowledge processes'** as promoted by the International Social Science Council, that is encapsulated in the focus on 'mutual learning processes' or the 'knowledge ecosystem' hosted by different funding bodies. The simple argument here is that if scientific research, irrespective of the discipline or approach, is going to reach its full potential in terms of scholarly standards and social impact, there is a need for greater mobility of ideas and people from academe and into potential user-communities and *vice*

¹⁰⁷ Academy of Medical Sciences. Improving the Recognition of Team Science Contributions in Biomedical Research Careers, p. 4.

¹⁰⁸ Nuffield Council on Bioethics (2014). *The Culture of Scientific Research in the United Kingdom*. London: Nuffield Council. http://nuffieldbioethics.org/wp-content/uploads/Nuffield_research_culture_full_report_web.pdf

¹⁰⁹ See The British Academy. *Crossing Paths: Interdisciplinary Institutions, Careers, Education and Applications*, p. 9.

¹¹⁰ Academy of Medical Sciences. *From Innovation to Implementation: Team Science Two Years On*, p. 8.

¹¹¹ Academy of Medical Sciences. *From Innovation to Implementation: Team Science Two Years On*, p. 15.

¹¹² Blackwell et al. *Creating Value Across Boundaries*, p. 22.

¹¹³ *Ibid*, p. 22.

¹¹⁴ van der Boon, Kahmen and Maes. *Delivering Talent*.

versa. It is through cultivating mobile processes that innovative boundary-spanning research platforms can be established, new sources of data, expertise and evidence uncovered, and dominant ‘self-evident truths’ can be challenged.¹¹⁵ In recent study by Collaborate CIC (2019), they noted that ‘system-wide learning culture by developing a sense of trust and connectivity across people in different organisations’ was beneficial to institutions, especially with the inclusion of formal and informal spaces for learning.¹¹⁶ Inter-sectoral mobility also provides huge opportunities in relation to researcher development and leadership experience, notably in relation to more disruptive forms of challenge-based leadership, as operating from a position beyond academe, even temporarily, can be transformative in terms of achieving a sense of perspective and fresh purpose. Despite the introduction of specific schemes that can be used to support mobility (e.g. Impact Accelerations Accounts, specific Doctoral Training Initiatives, the AHRC-ESRC-Foreign and Commonwealth Office Knowledge Exchange Fellowships, etc.), the evidence suggests that the research career framework remains incredibly rigid with relatively little mobility in-or-out of academe and especially in the social sciences. **The evidence suggests that there are very few incentives for researchers – at any level – to commit to a period beyond academe whilst many incentives exist for them to adopt a far narrower career plan. This was the main finding of an exhaustive recent report by the European Commission and is backed-up by the research undertaken for this report.**¹¹⁷ The main findings are:

- There is very little awareness of the concept of inter-sectoral mobility within the social sciences or any developed sense of how it could strengthen research in terms of funding, quality and leverage;
- There are relatively few funding schemes that focus on inter-sectoral mobility and the majority are very small scale;
- There are examples of individual ROs putting their own schemes and platforms in place but these are the exception rather than the norm.
- There are proportionately more schemes targeted at industry than at the public or third sectors where the social sciences (and arts and humanities) could play a major role;
- There is a lack of inter-scheme connectivity and opportunities for sharing learning or best practice are rarely exploited;
- There is insufficient attention being given to preparatory training for researchers before they undertake inter-sectoral mobility experiences; and
- Overall, there is insufficient access for researchers to take part in inter-sectoral mobility through existing schemes and relatively few incentives for them to accept the opportunities that do exist.

The European Commission therefore recommends that member states should put in place the necessary funding, incentives as well as institutional arrangements to support the development and implementation of inter-sectoral mobility schemes. The challenge, however, is that just like engaging in inter-disciplinary research, participating in schemes that promote inter-sectoral mobility also appears to be viewed as a risky endeavour rather than as a central component of the research endeavour. With recruitment and promotion frameworks prioritising a relatively narrow view of ‘what counts’ (i.e. REF compatible scientific publications and research-grant income) the incentives for stepping-out of academia in order to develop new research-related skills and to better understand the needs of research-users remain limited. At the same time, mobility *into* the social sciences by people who have enjoyed successful research-related careers beyond academe and have huge amounts to offer in terms of specialist knowledge, translational skills, and cultural sensitivity remains relatively rare because they do not offer established track records in relation to publications and grant income (and are therefore deemed ‘high-risk’ in REF terms).¹¹⁸

¹¹⁵ Ostrom, E. (2000). The Danger of Self-Evident Truths. *PS: Political Science and Politics*, 33(1), pp. 33-44.

¹¹⁶ Lowe, T. and Plimmer, D. (2019). *Exploring the New World: Practical Insights for Funding, Commissioning and Managing in Complexity*. London: Collaborate CIC, p. 19.

¹¹⁷ European Commission (2018). *Study on Fostering Industrial Talents in Research at European Level*. Brussels; Luxembourg: European Commission.

¹¹⁸ This point needs to be separated from practitioner appointments that are made to deliver professional training courses within universities. The appointment of practitioners to these sort of posts is relatively common in disciplines including journalism, social work, social policy, law, and teaching. However, this type of appointment tends to be on a teaching-only basis and concerns have been expressed for some time about the opportunity for teaching-only staff to progress within a rewards and promotion framework in which peer-reviewed scientific publications and research grant income are the main criteria. This issue has been addressed to some extent through the creation of full-career teaching-only tracks and the appointment of Teaching Professors.

Whether through design or mistaken application, the REF process appears to act as a major obstacle to both inter-disciplinary research and inter-sectoral mobility.

Although this sub-section has so far examined five obstacles to building researcher development and leadership capacity it is important to appreciate that embedded structural inequalities ensure that these challenges are more acute for specific sections of the academic and professional community than for others. The evidence and data for this argument is extensive.¹¹⁹ It also reflects the centrality of cultural factors, the existence of implicit biases and its impact in terms of creating ‘multiple marginality’.¹²⁰ Many of these issues are not new but the changing socio-political context (i.e. heightened precarity and professional flux) risks exacerbating long-term inequalities.¹²¹ Research by the League of European Research Universities reveals that only 21% of full professors are women, and even fewer are heads of department.¹²² Several studies have revealed that, compared with men, women tend to receive significantly lower salaries,¹²³ are less likely to hold tenured positions,¹²⁴ and generally have to wait longer for promotion.¹²⁵ In the build up to REF2014, increased recruitment for research fellows and lecturers significantly favoured male applicants.¹²⁶ The evidence suggests that women of colour face even greater challenges. Showunmi et al. link gender imbalance with race and class disadvantage, arguing that ‘women and in particular women of colour face a ‘glass ceiling’ in higher education’.¹²⁷ Recent data from Advance HE indicates that there are just 85 black professors in the UK (i.e. 0.6%, the smallest proportion of the professoriate).¹²⁸ Less than 5% of black academic staff are appointed to a full chair, compared with 11.2% of white staff. This statistic appears to support findings from the University and College Union that white academics are approximately three times as successful in their applications for a professorship when compared with their peers from BAME backgrounds.¹²⁹ In 2019 just 25 UK black professors are women.¹³⁰

¹¹⁹ See, for example, Advance HE (2018). Equality in Higher Education: Staff Statistical Report 2018. London: Advance HE; Bhopal, K., Brown, H. and Jackson, J. (2015). Academic Flight: How to Encourage Black and Minority Ethnic Academics to Stay in UK Higher Education. Research Report. London: Equality Challenge Unit; Leathwood, C., Maylor, U. & Moreau, M.P. (2009). Experiences of Black and Minority Ethnic Staff Working in Higher Education: Literature Review. London: Equality Challenge Unit; Shillam, R. (2015). Black Academia: The Doors Have Been Opened but the Architecture Remains the Same, in Alexander C. and Arday, J. (eds). *Aiming Higher: Race, Inequality and Diversity in the Academy*. London: Runnymede Trust; Universities & College Union (2016). The Experiences of Black and Minority Ethnic Staff in Further and Higher Education. London: Universities & College Union; Universities & College Union (2012). The Position of Women and BME Staff in Professorial Roles in UK HEIs. London: Universities & College Union; Savigny, H. (2014). Women, Know Your Limits: Cultural Sexism in Academia. *Gender Education*, 26, pp. 794-809.

¹²⁰ Turner, C.S.V. (2002). Women of Color in Academe: Living with Multiple Marginality. *J High Edu*, 73, pp. 74-93.

¹²¹ Menges, R.J. and Exum, W.H. (1983). Barriers to the Progress of Women and Minority Faculty. *J High Edu*, 54, pp. 123-44.

¹²² League of European Research Universities (2018). Implicit Bias in Academia: A Challenge to the Meritocratic Principle and to Women’s Careers – and What to Do About It. Leuven, Belgium: League of European Research Universities. Available from: <https://www.leru.org/files/implicit-bias-in-academia-full-paper.pdf>

¹²³ University and College Union (2017). The Gender Pay Gap in Higher Education: 2015/16 Data Report. London: University and College Union. Available from: https://www.ucu.org.uk/media/8620/The-gender-pay-gap-in-higher-education-201516---full-report-May-17/pdf/ucu_2015-16genderpaygapreport_full_may17.pdf

¹²⁴ Action. The Life of P.I.: Transitions to Independence in Academia, p. 5.

¹²⁵ See The Concordat. The Independent Review of the Concordat to Support the Career Development of Researchers.

¹²⁶ See, for example, Wright, A.L. et al. (2003). Gender Differences in Academic Advancement: Patterns, Causes, and Potential Solutions in one US College of Medicine. *Acad Med*, 78(5), pp. 500-08.

¹²⁷ Action. The Life of P.I.: Transitions to Independence in Academia, p. 8.

¹²⁸ Showunmi, V., Atewologun, D. and Bebbington, D. (2016). Ethnic, Gender and Class Intersections in British Women’s Leadership Experiences. *Educational Management Administration & Leadership*, 44(6), 917-35 (p. 917).

¹²⁹ Advance HE, Equality in Higher Education: Staff Statistical Report 2018.

¹³⁰ Universities & College Union. The Position of Women and BME Staff in Professorial Roles in UK HEIs.

¹³⁰ Rollock, N. (2019). Staying Power: The Career Experiences and Strategies of UK Black Female Professors. London: Universities & College Union. Available from: https://www.ucu.org.uk/media/10075/Staying-Power/pdf/UCU_Rollock_February_2019.pdf; See also Solanke, I. (2017). Black Female Professors in the UK. London: Runnymede Trust. Available from: <https://www.runnymedetrust.org/uploads/BlackFemaleProfessorsMarch2017.pdf>

Discipline specific studies reveal the manner in which although initial recruitment into the social sciences tends to be fairly broad in terms of social diversity – particularly compared to STEM subjects – there are clear inequalities within the subsequent professional journey (see Figure 1).

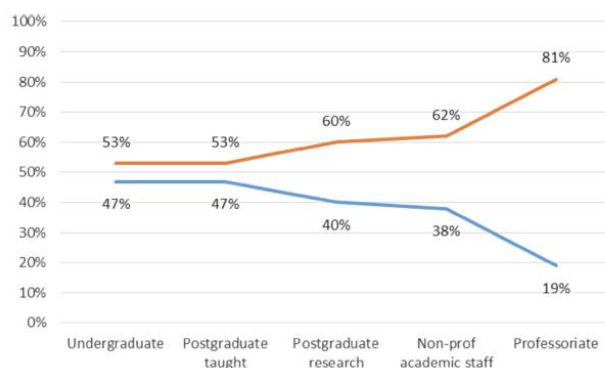


Figure 1. Equality Challenge Unit data on Politics Departments presented to the PSA Heads of Department Conference, 10 Dec. 2015. Bottom line is proportion of women, top line proportion of men.¹³¹

Qualitative studies suggest that even when women are in senior positions, their authoritative power is often downplayed which has been interpreted as suggesting that their academic career path is structured in line with male perceptions of success.¹³² In February 2019 *The Lancet* published a research article that found specific evidence of inequalities within the social sciences and called for the introduction of some form of ‘diversity rating’ within national audit frameworks to catalyse action.¹³³ Whether this would form one element of an effective response remains uncertain. But what is clear from the evidence is that BAME staff in higher education report being undermined, marginalised and held back in their careers, and their scientific knowledge and experience is often called into question.¹³⁴ Perceptions of bullying and harassment are also higher and academics from BAME backgrounds are more likely to consider taking posts abroad than their white colleagues.¹³⁵ The evidence suggests that if the UK science base is to retain and attract world class researchers it urgently needs to review its approach to equality, diversity and inclusion. This has already been acknowledged by UKRI with the appointment of Professor Jennifer Rubin (Executive Chair of the ESRC) to develop this agenda with the support of an external advisory group for equality, diversity and inclusion.¹³⁶ **In this context the topic of researcher development and leadership could provide a key element or strand of a broader cross-council approach.**

¹³¹ Flinders, M. et al. (2016). Pursuing the Diversity and Inclusion Agenda. *European Political Science*, 15(4), pp. 508-18.

¹³² See, for example, Monroe, K. et al. (2008). Gender Equality in Academia: Bad News from the Trenches, and Some Possible Solutions. *Perspect Polit*, 6(2), pp. 215-33; Knights, D. and Richards, W. (2003). Sex Discrimination in UK Academia. *Gender Work Organisation*, 10(2), pp. 213-38.

¹³³ Khan, M. et al. (2019). More Talk Than Action: Gender and Ethnic Diversity in Leading Public Health Universities. *The Lancet*, 393, pp. 594-600.

¹³⁴ See, for example, Leathwood, Maylor and Moreau. Experiences of Black and Minority Ethnic Staff Working in Higher Education; Shillam. Black Academia: The Doors Have Been Opened but the Architecture Remains the Same.

¹³⁵ Universities & College Union. The Experiences of Black and Minority Ethnic Staff in Further and Higher Education; Bhopal, Brown and Jackson. Academic Flight: How to Encourage Black and Minority Ethnic Academics to Stay in UK Higher Education.

¹³⁶ See <https://www.ukri.org/about-us/equality-diversity-and-inclusion/>

Specific Evidence Implications for the ESRC

- *Academics are facing increased professional pressures and in this context investing time and energy in professional development is often seen as a luxury that cannot be afforded, especially amongst early career researchers.*
- *Leading large and complex research grant applications is risky. It takes a lot of time and energy, but success is far from guaranteed. The evidence suggests that the reward and recognition frameworks in the social sciences create few incentives for taking on these roles, or being involved in 'team science' projects.*
- *The institutional architecture of higher education remains predominantly disciplinary-based (e.g. journals, departments, learned societies, REF, etc.) which makes inter-disciplinary work challenging to undertake and difficult to publish.*
- *Despite a growing emphasis on fluidity and 'open knowledge processes', inter-sectoral mobility remains very difficult in the social sciences. It is very difficult for 'lost leaders' to re-enter academe regardless of their skills and expertise, and few incentives exist for academics to undertake secondments beyond academe.*
- *Building capacity in relation to researcher development and leadership may well offer novel opportunities in relation to tackling long-term concerns in relation to equality, diversity and inclusion.*
- *Advancing the Science of Team Science as it relates to the social sciences appears to be an urgent priority, especially in relation to understanding what leadership development for team science research leaders might usefully look like.*

5.5 - Is there evidence of disciplines beyond the social sciences innovating in this space?

There is evidence of other disciplines attempting to 'step up' to what they have interpreted as their own researcher development and leadership challenge. This section draws upon specific examples that provide significant insights in terms of thinking about research leadership in ways that dovetail with a contemporary and future-orientated focus on 'team science', inter-disciplinarity and inter-sectoral mobility. This section also highlights the potential for innovative partnerships to be established as part of a coherent national strategy.

This review is focused on researcher development and leadership in the social sciences. Earlier sections have revealed the existence of a fairly fragmented and under-developed approach to building capacity and an emphasis on delegating responsibility to ROs. The aim of this section is to examine whether there is evidence that other disciplines have (1) recognised the existence of a specific leadership challenge, (2) developed specific capacity building structures or programmes, in order to (3) explore whether these innovations may offer insights for the social sciences. The main finding is that three key innovations merit discussion: the Clore Leadership Programme, the Crucible initiative, and the work of the Wellcome Trust and Academy of Medical Sciences. Taken together these initiatives demonstrate the following common characteristics:

- They *embrace inter-disciplinarity* and focus on creating new research platforms through innovative spaces and activities.
- They focus on creating a *strong 'cadre effect'* so that participants forge long-term networks that exist beyond the formal programme.
- The funders accept a continuing role in *facilitating alumni networks*.
- Careful attention is paid to the need to articulate an approach to leadership that is *constantly adapting to a changing context* while being culturally sensitive to the principles and values of the sector.
- The focus is on *long-term strategic development* rather than fragmented or *ad hoc* interventions.
- The existence of *cultural resistance to leadership training* is not restricted to academe and is not insurmountable.
- *Participation is not restricted to academics* and inter-sectoral mobility is explicitly designed into some of the programmes.
- Selection is not based solely on esoteric professional expertise but a *broader set of selection criteria* that includes creativity, curiosity, and dynamism.
- *Provision is organised on a national basis* in order to increased equality of opportunity and to emphasise collaboration over competition.
- There is a balanced emphasis on researcher development and leadership *throughout the professional journey* with a particular focus on 'top-end' capacity.
- Innovation has *facilitated the leveraging of additional resources* and (in-kind and direct) support from non-traditional sources.
- There is an *emphasis on reciprocity* and former fellows contributing back to programmes in the future (as speakers, mentors, reviewing applications, etc.) in order to refresh the schedule.
- Leadership development programmes that revolve around selected cohorts tend to be open to *accusations of exclusionary practices and elitism*.
- Some of these leadership development programmes are entering a *second developmental phase* in order to ensure they remain 'fit for purpose'.
- The current ability of the social sciences to engage within these initiatives is extremely limited but *opportunities may exist for innovative partnerships*.

Clore Leadership Programme

In January 2002 the Trustees of the Clore Duffield Foundation established a small task force, to consider the ways in which the Foundation could make a significant contribution to cultural leadership training in the United Kingdom. The commissioning of the task force was intended to stimulate fresh thinking around the issue of cultural leadership: the group was to seek opinions from across the cultural sector, identify best practice, and examine current provision of leadership training. It was asked to recommend a course of action, to be considered by the Trustees. At that point the project would, if acceptable to the Trustees, move from a research to a development stage. When it came to exploring the

issues surrounding cultural leadership, one of the first things the task force discovered was that concern about the standard of leadership and the lack of talent management structures was not new. In report published by the Museums Training Institute, the Review of Management Training and Development in the Museums, Galleries and Heritage Sector (also known as the ‘Holland Report’), noted that it was ‘imperative’ for the museum sector to have ‘those at the very top of their profession [to] possess well-developed strategic management skills and first class leadership qualities’.¹³⁷ A consultation draft of the report by Metier (the national training organisation for the performing arts), *The Leadership Challenge: A review of management and leadership in subsidised arts organisations in England*, also stated that: ‘the sector under-invests in management and leadership development at most levels’.¹³⁸ Resource’s report *Renaissance in the Regions: A New Vision for England’s Museums*, published in September 2001, suggested the existence of a ‘leadership vacuum’ in regional museums, alongside ‘professional inertia’ and ‘apathy, low morale, and a general lack of aspiration’.¹³⁹ The Boyden Report on the English Regional Producing Theatres published by the Arts Council in 2000 came to similar conclusions: ‘At the start of a new century, a number of theatres are slipping towards financial, managerial, and artistic crisis. The process continues to turn too many working lives into a day-to-day recurring crisis’.¹⁴⁰ As argued by Metier’s *Leadership Challenge*: ‘[t]he Arts Council fears that many of the future leaders will have left the industry around their early forties, as they find that family and other commitments necessitate better paid employment’.¹⁴¹ This body of evidence dovetailed with the findings of a wide-ranging national review that was published by the government-commissioned Council for Excellence in Management and Leadership in 2001 entitled *Leadership: The Challenge for All*. **This contained evidence that across the public and private sectors ‘Leadership development is perceived to be a low priority’.**¹⁴²

The Clore Leadership taskforce identified examples of best practice alongside **significant barriers to developing effective leadership skills in the cultural sector (specifically a lack of time amongst staff, a lack of money amongst organisations, a lack of expertise within the sector and the lack of a clear career structure)**. The review also found a strong element of cultural resistance and a belief that ‘leaders were born and not made’¹⁴³ or – as the Holland Report had discovered – ‘there is as strong under-current of anti-managerialism’.¹⁴⁴ The taskforce concluded,

In the case of the arts and heritage, it may well be that that this crisis will result in structural and institutional change. We should ensure, then, that the attempt to address current concern about the supply of leaders for today’s institutions is open to the possibility that these institutions may be about to change - and potentially require a different kind of leader.... No single initiative can hope to resolve this issue as a whole. Nonetheless, the response to our consultations and proposals so far leads us to the conviction that cultural leadership constitutes a particular focal point at which it is possible to make a constructive intervention. By addressing leadership, we believe that it is possible to revitalise institutions across the cultural sector, and that those responsible for the arts and heritage will regain the creativity and confidence that the sector is in danger of losing.¹⁴⁵

The taskforce recommended the establishment of a Clore Leadership Programme that would offer a flexible, modular approach to leadership development with the intention of creating ‘a new generation of

¹³⁷ Holland, G. (1998). Review of Management Training and Development in the Museums, Galleries and Heritage Sector: The Final Report, December 1997 (The Holland Report). Bradford: Museum Training Institute, p. 41.

¹³⁸ Metier (2000). *The Leadership Challenge: A Review Management and Leadership in Subsidised Arts Organisations in England*. Consultation Draft. Liverpool: Metier, p. 5.

¹³⁹ Resource (2001). *Renaissance in the Regions: A New Vision for England’s Museums*. London: Resource, The Council for Museums, Archives and Libraries. Available from: <https://www.museumsassociation.org/download?id=12190>, p. 83.

¹⁴⁰ Boyden, P. (2000). *Roles and Functions of the English Regional Producing Theatres: Final Report to the Arts Council of England*. Bristol: Peter Boyden Associates, p. 10.

¹⁴¹ Metier. *The Leadership Challenge*, p. 35.

¹⁴² Horne, M. and Stedman Jones, D. (2001). *Leadership, the Challenge for All?* London: Institute of Management, p. 28.

¹⁴³ Hewison, R. and Holden, J. (2002). *Clore Leadership Programme: Task Force Final Report*, December 2002. London: Clore Duffield Foundation, p. 3.

¹⁴⁴ The Holland Report, p. 10.

¹⁴⁵ Hewison and Holden. *Clore Leadership Programme: Task Force Final Report*, p. 5.

creative leaders.... They would be young, energetic and open to fresh ideas, and would form a cadre of new leaders who would help to regenerate institutions right across the cultural sector'. A research leadership challenged was therefore recognised and new provisions put in place to 'step up' to the challenge. Nearly two decades later the Clore Leadership Programme has grown into an internationally respected development framework with the year-long Clore Fellowship at its core. This is a tailored programme of leadership development that draws together around 25 mid-career 'future leaders' from a range of specialisms and places them in a year-long programme. Important elements of this programme include:

- An emphasis on experiential learning rather than generic classroom-based approaches.
- Group tasks are mixed with mentoring and coaching.
- A secondment to an environment beyond your home sector is compulsory.
- Demand for places is high (10:1) but places are strictly limited.
- The Clore Fellowship is a highly respected brand.
- Successful completion of the course confers the right to be described as a Clore Fellow.
- Clore Fellows become a member of the Clore Leaders Network (an international alumni association including participants from all fifteen cohorts).
- There is an emphasis on reciprocity and former participants returning to support and facilitate later programmes.
- A number of university-based academic researchers have completed the programme (predominantly arts and humanities scholars).
- The Wellcome Trust supports places for those working in health-related areas and a number of additional funders support other specific parts of provision.
- The Clore Fellowship is complemented by a number of shorter training programmes (Clore Emerging Leaders Scheme, Leadership Pulse, etc.).

There is significant body of evidence that suggests the Clore Leadership Foundation has achieved its initial ambitions. It has attracted additional financial support with nearly 70 funders contributing to the fellowship programme directly or in kind.¹⁴⁶ A significant cohort of fellows from earlier cohorts now hold senior leadership positions; women and minorities have received particular support (65% of fellows are female and 20% from BAME backgrounds); the programme was instrumental in the decision by the then Chancellor of Exchequer Gordon Brown in 2006 to launch a £22m Cultural Leadership Programme; an International Fellows scheme was launched in 2008; and the establishment of Clore Social Leadership, also established in 2008, has created new capacities across the social and voluntary sectors. Despite this success the evidence suggests that **the Clore Leadership Programme faces a number of challenges including a shrinking resource base, concerns regarding elitism, the need to ensure fellows have a better understanding of government and governance frameworks, and more support in relation to the research component of the fellowship experience**.¹⁴⁷

The Crucible

The Crucible initiative was originally developed by the NESTA in 2005 in order to reflect the manner in which innovation generally occurs at the intersection or nexus between disciplines and professions - but that forging these connections and working in this space was challenging.¹⁴⁸ The Crucible was therefore a structured intervention that created opportunities for people from a range of disciplines to meet and discuss new ways of thinking about science and scientific practice, or to share experiences and discuss challenges. The Crucible initiative involved an attempt to expand the skill-set of early-career researchers in order to allow them to engage with more complex challenges and to communicate their research to non-scientific audiences. Participation was limited, resourcing was relatively generous, and the core focus was on research leadership that centred around innovation, creative capacity

¹⁴⁶ See Hewison and Holden. Creative Leadership: A Future Vision for the Clore Leadership Programme, Appendix 2.

¹⁴⁷ See Hewison and Holden. Creative Leadership: A Future Vision for the Clore Leadership Programme.

¹⁴⁸ See NESTA (2006). Annual Report and Accounts 2005/2006. London: NESTA. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/231547/1584.pdf

and disruptive thinking. The Scottish Crucible built upon NESTA's original project and was launched in 2008.¹⁴⁹ It is focused on building innovative inter-disciplinary research leadership capacity that operates very much at the nexus between disciplines while also providing opportunities for inter-sectoral mobility and challenges (see Box 3, below). The emphasis is very much on agility and ambition – 'helping bright thinkers see the bigger picture' – with thirty 'Crucibilists' selected each year to participate from Scottish Universities, independent research institutes, small and medium enterprises or spin-out companies. The disciplinary span is therefore very wide but does include social science, and the programme targets early career scholars at the post-doc or lecturer level. Each annual Crucible programme concludes with a pitching competition where small inter-disciplinary teams can secure pump-priming funding and an active alumni network ensures that participants stay connected. The Welsh Crucible that was established in 2011 was informed by the Scottish Crucible and contains a similar focus on research leadership, innovation and inter-disciplinary collaboration. In this case, however, it covers early to mid-career researchers based within and beyond academe.¹⁵⁰ **The evidence suggests that the Crucible initiative is world-class in terms of building dynamic research leadership capacity.**

Box 3. The Scottish Crucible¹⁵¹

Scotland's Future Research Leaders

Ever wondered what a biochemist and a mathematician might have in common, or how a social scientist and a particle physicist could work together? **Scottish Crucible** is designed to help you find out just what great minds and creative thinkers can do when they come together!

Scottish Crucible is all about helping researchers to see the bigger picture. It aims to help researchers think differently and send participants back to their work inspired. The programme has been put together with the express goal of helping participants discover skills and attitudes likely to make your research more innovative. We want participants to return armed with a greater understanding of how science can benefit society and how thinking creatively can really make a difference to their work and their career.

Scottish Crucible aims to:

Enable participants to widen their networks and create new and innovative collaborations with researchers in other disciplines.

Encourage participants to develop an ongoing relationship with the Royal Society of Edinburgh – becoming part of the wider RSE network.

Increase innovative capacity amongst highly promising research leaders of the future who are building their careers in Scotland.

Enhance participants' ability to think creatively and innovatively in their work

Increase participants' understanding of how research can impact on Society and how they could communicate their work to a wider audience.

Programme:

Scottish Crucible takes place over three intensive two-day workshops (known as Labs) held in early Summer each year and hosted by one of three partner institutions consecutively. Each 'Lab' aims to develop and challenge thinking within a theme:

Lab 1: *Looking outwards* – Policy, the media, the public. How to engage with those beyond academia.

Lab 2: *Inter-disciplinarity and creativity* – Collaboration and new ideas.

Lab 3: *Enterprise and collaboration* – Where and how to take your ideas to the next level.

The final lab also includes dedicated time and opportunity to work on collaborative proposals.

Each Scottish Crucible Lab consists of guest speakers, seminars, skills sessions, tours and informal discussions all aimed at helping Scottish researchers put their role into a wider context, such as how to best address the social and technical challenges facing Society. Not only will Crucible participants mix with their peers from a wide variety of science and social science backgrounds, but they'll also have a unique opportunity to network with senior representatives of science, policy, government, media and business in Scotland.

¹⁴⁹ <https://scottishcrucible.org.uk>

¹⁵⁰ <http://www.welshcrucible.org.uk>

¹⁵¹ The Scottish Crucible (2018). 'About' [online]. Edinburgh: The Scottish Crucible. Available from: <https://scottishcrucible.org.uk/about/>

The ‘Crucible effect’ is explicitly designed to address many of the common institutional challenges of developing research leadership that were highlighted in the previous section of this report. The central idea is to forge an inter-disciplinary and inter-sectoral network that brings together ‘future leaders’ from a range of disciplines and professions. Participants are taken out of their day-to-day working environment and spend time in ‘Labs’ that build skills and develop confidence, and a strong ‘cadre effect’ is established whereby previous participants help develop future crucibles. The Scottish Crucible Alumni Forum includes over 300 ‘future research leaders of the future’ and the Welsh Crucible Network contains over 240, and both initiatives are collaboratively funded by a range of organisations and roadshows promote the initiative and encourage applications (each Welsh University has a nominated ‘Crucible Champion’).¹⁵² At its tenth anniversary celebrations, the director of the Scottish Crucible, Dr Ruth Neiland, highlighted that: ‘Collaboration, inter-disciplinarity, innovation and leadership have been key, underpinning principles of Scottish Crucible for the past 10 years, and its Alumni are thus well placed to tackle a multiplicity of science and societal challenges and expand the boundaries of research and innovation in Scotland and internationally’.¹⁵³ **The core question remains how to promote the Crucible effect more broadly across the UK.** A Crucible-in-a-Box initiative was developed by NESTA which allowed individual ROs to run Crucible-like events beyond Scotland and Wales but although some universities experimented with this tool the evidence suggests that there is currently limited take-up due to existing financial pressures.¹⁵⁴

Wellcome Trust and Academy of Medical Sciences

The final pool of evidence relating to innovations in relation to research leadership focuses on biomedical science and healthcare research. Two closely related initiatives deserve careful consideration: Wellcome Trust and Academy of Medical Sciences.¹⁵⁵ The Wellcome Trust offers a suite of research funding opportunities that begin at the undergraduate level (i.e. pre-doc level) and run right through to senior research leaders.¹⁵⁶ They also offer an increasing range of funding opportunities for health-related funding in the humanities and social sciences.¹⁵⁷ In recent years the Wellcome Trust has attempted to underpin and support these funding opportunities through a focus on researcher development and leadership. This reflected the simple fact that many research leaders had received very little or no formal leadership training.¹⁵⁸ The Wellcome Research Leadership Development Programme (RDLP) was launched in 2012 with the aim of connecting ‘senior researchers with great leaders to help improve their skills’.¹⁵⁹ The programme was designed to complement existing leadership development courses in the scientific sector through a keen focus on exploring broad leadership competencies and challenges beyond administrative or managerial skills. The Leadership Competency Model is at the foundation of the RDLP and sets out the key elements of leadership as: (1) *strategy & vision* (i.e. systems thinking, strategic awareness, confidence, etc.); (2) *managing people* (i.e. team selection and management, change management, persuasion

¹⁵² See <http://www.welshcrucible.org.uk/contact/>

¹⁵³ Herriot Watt University (2018). Celebrating a Decade of Scottish Crucible [online]. *Herriot Watt University News*, 10 December 2018. Available from: <https://www.hw.ac.uk/about/news/internal/2018/celebrating-a-decade-of-scottish-crucible.htm>

¹⁵⁴ See Soubes, S. and Aspinall, S. (2014). *Cultivating Inter-Disciplinary Researcher Communities – The Crucible Effect*. London: Vitae.

¹⁵⁵ Other examples include the RAND Corporation, see Jones, M.M. et al (2012). *The National Institute for Health Research Leadership Programme: An Evaluation of Programme Progress and Delivery*. Santa Monica, CA: RAND Corporation. Available from: https://www.rand.org/pubs/technical_reports/TR1162.html and Marjanovic, S. et al (2015). *Leadership as a Health Research Policy Intervention: An Evaluation of the NIHR Leadership Programme (Phase 2)*. Santa Monica, CA: RAND Corporation. Available from:

https://www.rand.org/pubs/research_reports/RR934.html; and the American Association of Colleges of Pharmacy (AACP), see O’Donnell, J.M. et al (2019). *Report of the 2018-2019 Research and Graduate Affairs Committee*. Arlington, VA: AACP Reports

¹⁵⁶ <https://wellcome.ac.uk/funding/research-careers>

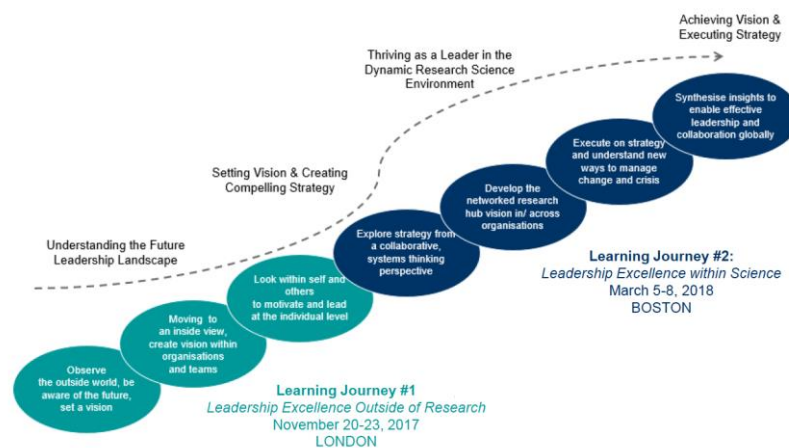
¹⁵⁷ Ibid.

¹⁵⁸ See Wellcome Trust (2018). *A Career in Research: Tips for Running Your Own Research Group*. London: Wellcome Trust. Available from: <https://wellcome.ac.uk/sites/default/files/research-careers-tips-running-research-group-2018-05-17.pdf>

¹⁵⁹ Ibid.

and influencing, etc.); and (3) *leadership persona* (generosity and trust, engagement skills, crisis management, etc.). The programme is organised via a ‘learning journey’ approach (see Figure 2, below) based on first-hand experience and close engagement with accomplished leaders from a range of professions.

Figure 2. Wellcome Trust ‘Research Leadership Development Programme’: Experience Arc



Note. Deloitte are the programme suppliers

The advantages of the ‘learning journey’ approach include:

- Exposure to leaders and organisations that provide unique insights to the major challenges participants face in their own institution.
- Showing ‘what good looks like’ for specific important leadership competencies by showing excellence ‘first hand’.
- Providing ample opportunity for dialogue and exchange with fellow participants.
- Giving freedom to react and reflect away from the distractions of the day job.
- Providing the potential for coupling with a robust individualised learning programme to support personal growth.
- Flexibility for the journeys to change and adapt to keep pace with changing leadership challenges.

The first ‘journey’ focuses on leadership beyond the research environment in order to deliver more ‘stretch’ and make participants aware of leadership challenges in non-research contexts. It is also intended to underline the importance of strategic awareness of the future, as well as how to effectively set vision and create compelling strategies. The second ‘journey’ is focused on a research environment but with an international focus. Key themes for this journey include how to thrive as a leader in a dynamic research environment, how to achieve vision, and execute on strategy. Host partners help examine leadership, management, and collaboration across the research value chain, from fundamental research to more applied projects. A specific element of this journey is to outline the historic challenge and future for an area of research — moving from traditional institution-based research to a highly networked hub — while illustrating productive leadership concepts relevant to a modern research network. The RLDP was explicitly designed to respond to a specific challenge and to fill a gap in existing provision. It is a high-cost limited-intake course (around £25,000 per place with around fifteen places a year). **It is therefore a ‘top-end’ talent management programme for those who have already demonstrated their capacity for research leadership but who may have the potential to go even further in the sense of running major institutes, directing funding bodies, or acting as international ambassadors for biomedical science.**

The Wellcome Trust’s RDLP ran from 2012-2013 to 2018-2019 and is currently paused to allow an evaluation to be undertaken. This pause reflects the fact that the research landscape has changed since the RDLP was first introduced six years ago. It also reflects that manner in which Wellcome’s RDLP was an early innovator that spurred other organisations to think about the changing demands of

research leadership. As Sir Robert Lechler, President of the Academy of Medical Sciences, noted in May 2018:

I am convinced that the greatest scientific discoveries in coming decades will be facilitated by those who can work across traditional academic disciplines and feel at home in multidisciplinary teams. To make a difference to patients, future leaders will also need to understand and navigate the languages and cultures of multiple sectors including the NHS, academia, industry, government and regulators... I regularly hear from the current leaders in the health and life sciences sector that we need to better equip our future leaders with the skills to work collaboratively and across sectors... These skills take time to develop and mature – so if we want the most dynamic leaders in ten to twenty years, we must start working with mid-career researchers now... [The programme] will be quite unlike any leadership programme that exists at the moment... We can't fully know what the future holds, but we do know we will need a pipeline of talented leaders that will disrupt the status quo to seize opportunities and galvanise multi-sectoral teams to overcome barriers.¹⁶⁰

In many ways what this statement recognises is a portfolio of themes – the existence of new challenges, the need for broader skill-sets, the requirement for mobility in relation to people and ideas, the role of disruptive thinking as a potential source of powerful new ideas, a focus on the nexus or interface between disciplines and professions, and the need for fresh thinking about research infrastructure and talent management – that are equally relevant for the social sciences. **However, the Academy of Medical Sciences has gone further than any other academic organisation in terms of setting out a detailed implementation plan (See Box 4, below).**

Box 4. Academy of Medical Sciences: 'Develop Talent' – Implementation Plans¹⁶¹

We will achieve this by:

1. Supporting the careers of the next generation of biomedical and clinical researchers through targeted grants schemes and programmes of support, including Starter Grants for Clinical Lecturers and Springboard awards for biomedical researchers.
2. Maintaining a focus on career transition points, providing early career researchers with the resources and tools to develop as independent researchers.
3. Enhancing our partnerships and consortia of research funders to expand our scope and reach, particularly into the non-clinical research community.
4. Demonstrating value and innovation in our mentoring and career development activities, building more one-to-one mentoring pairs and optimising our physical and digital connections with early career researchers across the UK.
5. Developing a new and distinctive approach to mentoring and leadership that will support and connect the next generation of research leaders, focusing on our unique role at the intersection of academia, industry and healthcare.
6. Evolving our successful SUSTAIN programme for women researchers, maintaining a strong focus on how to improve gender representation along career trajectories across biomedical and clinical research fields.
7. Promoting academe-industry mobility, with a focus on collaborative and cross-disciplinary working.
8. Building the Academy's role as a hub of connectivity for early career biomedical and health researchers, to facilitate networking, collaboration, exchange of ideas and acquisition of skills.
9. Maintaining our work to identify and address issues affecting biomedical and health research careers, including changes in the funding landscape, clinical training pathway, and higher education policy, along with broader trends around team science, cross-disciplinary working and the impacts of data science, machine learning and Artificial Intelligence

¹⁶⁰ Lechler, R. (2018). Why the Future Needs a New Kind of Leader [online]. *Academy of Medical Sciences Blog*, 18 May 2018. Available from: <https://acmedsci.ac.uk/more/news/why-the-future-needs-a-new-kind-of-leader>

¹⁶¹ Academy of Medical Sciences (2017). Developing Talent, Strategic Plan, 2017-2021 [online]. London: Academy of Medical Sciences. Available from: <https://acmedsci.ac.uk/about/strategy-2017-21/strategic-challenges-2017-21>

In addition to these plans the Academy of Medical Sciences announced the launch of a new research leadership scheme called ‘Future Leaders in Innovation, Enterprise and Research’ (FLIER). This programme is a new initiative that is currently being rolled-out for the first cohort and the evidence suggests that the initiative is state-of-the-art when it comes to thinking about researcher development and leadership. It is a two-year programme with funding from the Dennis and Mireille Gillings Foundation and the ‘Investment in Research Talent’ fund within the Department of Business, Energy and Industrial Strategy.¹⁶² FLIER is designed to develop ‘agile, creative and radical thinkers’ in order to ensure that the biomedical and health sciences possess sufficient senior research leadership talent to cope with future challenges and exploit opportunities as they emerge.¹⁶³ It is founded on a commitment to inter-disciplinarity and the benefits of inter-sectoral mobility, and therefore recruits participants from within and beyond academe (including industry, the NHS and government). Specific components of this programme include:

- Residential and one-day meetings to expose participants to current national and international leaders across the wider scientific and health ecosystem
- Face-to-face and virtual workshops
- Regular tailored coaching sessions from professionals at the forefront of leadership development
- Mentorship from a leader in the life sciences sector
- Cross-sector immersion experiences with an array of other organisations
- A cross-sector project. This will take place in the second year and will be an opportunity to apply acquired strategic and higher-level operational skills to a work-based project while being supported by colleagues, a coach and a mentor.¹⁶⁴

FLIER is being delivered by Cirrus (a specialist talent management and leadership consultancy) in partnership with the Academy of Medical Sciences and is aimed at supporting mid-career research leaders into more senior roles.¹⁶⁵ The programme remains in its infancy yet remains of interest to the ESRC for five reasons. First, the focus on enterprise and innovation alongside research could be valuable from a social science perspective. Secondly, it demonstrates a capacity to lever additional resources from non-traditional sources. Thirdly, the FLIER initiative represents an attempt to address some of the obstacles and challenges to ‘team science’ that were highlighted in the Academy’s report of May 2016; challenges which are particularly pressing vis-à-vis the social sciences. The fourth point is that it also forms part of a broader attempt by the Academy, as signalled in its strategic plan for 2017-2021, to lead innovation in relation to researcher development and talent management through a more integrated and strategic approach.¹⁶⁶ **Finally, the Academy is keen to strengthen links with social scientists and may therefore offer partnership opportunities.**

¹⁶² The Academy secured £11.2 million from this fund over three years (2018-2021) to fund 60 ‘Springboard Awards’, develop the established mentoring system and to create FLIER. See the Academy for Medical Sciences (2018). Academy Secures £11.2 Million for Innovative Programmes [online]. *Academy of Medical Sciences*, 20 June 2018. Available from: <https://acmedsci.ac.uk/more/news/academy-secures-112-million-for-innovative-programmes>

¹⁶³ Lechler. Why the Future Needs a New Kind of Leader.

¹⁶⁴ Academy of Medical Sciences (2018). FLIER: Future Leaders in Innovation, Enterprise and Research [online]. Available from: <https://acmedsci.ac.uk/grants-and-schemes/mentoring-and-other-schemes/FLIER>

¹⁶⁵ See <http://cirrus-connect.com>

¹⁶⁶ Academy of Medical Sciences (2017). Strategic Plan, 2017-2021. London: Academy of Medical Sciences. Available from: <https://acmedsci.ac.uk/file-download/55580105>

5.6 - What does the evidence tell us about how other parts of the public sector are addressing similar challenges?

Similar leadership challenges have been identified across the public sector and have commonly been addressed through the creation of national-level leadership academies as enabler and innovation platforms. However, very few initiatives within academe have attempted to draw-upon the experience or insights of research-related leadership platforms that exist beyond academe.

The previous section explored the evidence of disciplines beyond the social sciences innovating in relation to researcher development and leadership. This section examines how other parts of the public sector are addressing similar leadership-related challenges. It examines the evidence of innovation, the existence of potential partnership structures, and at the interface between researchers and research-users. The evidence also raises questions about claims regarding the atypical nature of higher education as a sector and about the uniqueness of academics as a professional class. **The evidence reveals not only a recent growth in leadership-related development platforms which could provide valuable conduits through which researchers and research-users could forge relationships, develop skills, and facilitate mobility, as well as a strong desire on the part of research-users to engage with social scientists.**

Three issues deserve brief comment in order to understand the evidence presented in this section. First, no dominant framework exists for defining or measuring effective public service leadership. For example, within a sample of 129 articles more than 20 theories of leadership were identified.¹⁶⁷ Secondly, the available research and data is dominated by North American studies, by the views of male leaders and by self-reported surveys of dominant leadership traits.¹⁶⁸ The research literature on public sector leadership also appears heavily dependent on the analysis of head-teacher performance in secondary schools. However (and thirdly) at the very broadest level a recent review of the available evidence by the Behavioural Insights Team concluded that ‘correlational and causal studies find a positive organisational impact from the presence of effective public service leaders’.¹⁶⁹ This flows into a discussion about what an ‘effective’ *research* leader might look like in the social sciences, how definitions and understandings of ‘effectiveness’ may need to evolve, and how the skills or competencies linked to such interpretations may need to be the focus of more sustained and strategic interventions than might have been the case in the past (discussed below).

Table 6. Public Sector Leadership Academies

<p>NHS Leadership Academy https://www.leadershipacademy.nhs.uk</p>	<p><i>Edward Jenner programme</i> – for those new to leadership, exploring what it means for them. <i>Mary Seacole programme</i> – for those aspiring to their first formal leadership role. <i>Elizabeth Garrett Anderson programme</i> – for those in mid-level leadership roles. <i>Nye Bevan programme</i> – for those in senior leadership roles aspiring to a board level role. <i>Intersect programme</i> – for senior leaders from across the health and care landscape whose work crosses organisational boundaries. <i>The Director programme</i> – for serving executive directors. <i>NHS Aspiring Chief Executive Programme</i> – formal training plus mentorship from current senior leader. Participants also receive a frontline staff mentor and work closely with a patient mentor.</p>
<p>Major Projects Leadership Academy https://www.sbs.ox.ac.uk/programmes/custom-executive-education/major-projects-leadership-academy</p>	<p>Partnership between the Cabinet Office, Saïd Business School (University of Oxford) and Deloitte. Launched in 2012 it delivers a competency framework based on four leadership pillars (personal,</p>

¹⁶⁷ Chapman, C. et al. (2016). How Public Service Leadership is Studied. *Public Administration*, 94(1), pp. 111-128.

¹⁶⁸ Bloom, N. et al. (2015). Does Management Matter in Schools? *The Economic Journal*, 125(584), pp. 647-674; Leithwood, K. et al. (2004). Review of Research: How Leadership Influences Student Learning. New York: The Wallace Foundation.

¹⁶⁹ Behavioural Insights Team (2018). Evidence Report: Literature Review and Semi-Structured Interviews to Support the Establishment of the Centre for Public Services Leadership. London: Behavioural Insights Team.

	major projects, commercial and technical). ¹⁷⁰ Close links with the Major Projects Authority. Two cohorts of 25 participants each year. Residential weeks plus one-on-one support.
Project Leadership Programme https://www.cranfield.ac.uk/som/research-centres/centre-for-business-performance/project-leadership-programme-plp-fact-sheet	Partnership between the Cabinet Office, PA Consulting Group and The Project Academy. Emerged out of the perceived success of the MPLA and is intended to cultivate leadership skills for those in charge of significant projects but not part of the Government Major Projects Portfolio. Works closely with the Infrastructure and Projects Authority. Four residential modules plus electives and personal coaching with strong alumni networking.
Local Government Leadership Academy https://local.gov.uk/our-support/highlighting-political-leadership/leadership-academy	<i>The Leaders' Programme</i> – a combination of modules and residential designed to support council leaders who have been in the role for five years or less. <i>The Leading Edge Programme</i> – focuses on bringing senior council leaders and senior officers together to share ideas and thinking about key challenges. <i>The Leadership Academy Programme</i> – a modular programme based around three two-day residential. Aimed at mid-career councillors in leadership roles. <i>Next Generation Programme</i> – designed for new councillors who are keen to progress into leadership roles.
Civil Service Leadership Academy https://www.gov.uk/government/collections/civil-service-leadership-academy	<i>Core leadership development opportunities</i> – masterclasses, coaching and mentoring plus diagnostic tools <i>Immersive learning series</i> – to develop leadership skills through reflective learning <i>Leading in a multidisciplinary environment</i> – supports broadening understanding and capability across the civil service core functions and professions within the civil service through workshops, resources and events. <i>Civil service orientation</i> – supports leaders new to the civil service through workshops, seminars, events and partnering. <i>Support for career transition</i> – essential induction events for new Deputy Directors, Directors and Directors General to support them.
Public Service Leadership Academy https://www.gov.uk/government/publications/public-service-leadership-academy	Announced in the 2017 Autumn Budget to share best practice across central government, the NHS and wider public sector. Task for reported in October 2018 and waiting for government response.
AcademiWales https://academiwales.gov.wales	Centre of Excellence for leadership and management across the public sector in Wales. Established in 2012 it offers a wide variety of courses, schools, learning resources, masterclasses, secondment opportunities, coaching and mentorship. It also acts as a networking hub for public sector leaders and offers International Learning Opportunities. Recently established the All Wales Public Service Graduate Programme
WorkforceScotland https://workforcescotland.com	Broadly focused on staff development across the public sector but recently developed 'Collective Leadership for Scotland' as a leadership programme that attempts to co-produce new provision through active research and facilitated learning. Evaluation processed discussed from the outset. ¹⁷¹
The Staff College https://thestaffcollege.uk	Focused on Children's Services and individuals holding positions in Directorates of Children's Services in local authorities. Offers specialised programmes for different service levels, mentorship and coaching, conferences and 'think tank' events, strong networking and alumni emphasis. <i>Aspirant DCS Programme</i> <i>Black and Asian Leadership Initiative</i> <i>Leadership for Change Programme</i> <i>DCS Leadership Provision</i> <i>National Leadership Qualities Framework for Directors of Children's Services</i>

The available evidence also suggests that although public sector leadership is not a new challenge it is one that has become harder in recent decades. The most difficult challenges revolve around leading increasingly complex organisational networks that address 'wicked' societal challenges that span dominant organisational, political, and geographical boundaries. In many ways social scientists face a mirror-image

¹⁷⁰ Great Britain. Infrastructure and Projects Authority and Cabinet Office (2015). The MPLA Course Handbook. London: Infrastructure and Projects Authority and Cabinet Office. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/405600/MPLA_Handbook_for_gov_uk.pdf

¹⁷¹ Sharp, C. (2018). Collective Leadership: Where Nothing is Clear and Everything Keeps Changing. Exploring New Territories for Evaluation. Edinburgh: Workforce Scotland. Available from: <https://workforcescotland.files.wordpress.com/2018/11/collectiveleadershipreport1.pdf>

challenge in the sense that studying ‘wicked issues’ also demands some capacity to work across traditional disciplinary cleavages. This challenge has led to a sustained emphasis on the concept of *collaborative leadership* within the public sector and an awareness of the potential barriers created by the individual or organisational focus of existing incentive structures – again a point of direct relevance to the topic of research leadership within the social sciences.¹⁷² Although the primary leadership challenge for significant parts of the public sector have not been academic in nature, it has revolved around reviewing whether the current leadership skills and competencies are actually ‘fit for the future’. As a result, a raft of new public sector ‘leadership academies’ have been established in order to foster innovation, offer bespoke training, create experiential learning opportunities, nurture networking, forge links across institutions, share ‘best practice’ and establish clear talent management pipelines (see Table 6, above). All of these initiatives share a set of common characteristics (see Box 5, below) which, again, reflect a similar set of priorities and concerns within higher education.

Box 5. Recent Public Sector Leadership Initiatives: Ten Shared Characteristics

- (i) Leadership has been recognised as being of growing professional importance in a period of rapid social change and uncertainty.
- (ii) Pre-existing structures are often abolished as a symbolic and professional recognition of the need to evolve and keep pace with new demands.
- (iii) The ability to look across traditional professional and organisational boundaries (i.e. *beyond* one’s home institution) is seen as a critical element.
- (iv) New approaches to building leadership capacity emphasise collaborative approaches and focus on broadening formal skill-sets and informal professional networks.
- (v) These new approaches are, however, designed with a focus on the core values and principles of the profession very much at the core.
- (vi) A level of uncertainty and trepidation surrounded the launch of all of these initiatives but not responding to the leadership challenge is not viewed as an option.
- (vii) Most of the initiatives revolve around ‘up-scaling’ capacity through sharing best-practice, creating new opportunities, thinking creatively, expanding the notion of the professional community, building new boundary spanning structures and incentivising change.
- (viii) There is a clear emphasis on bespoke, experiential and context-based learning rather than more passive content-based learning.
- (ix) All of these initiatives accept the need to drive both cultural and institutional change but evaluating the impact of these initiatives can be difficult.
- (x) The existence of a leadership challenge is not only explicitly acknowledged but it is also interpreted as an opportunity to address long-standing concerns in relation to equality, diversity and inclusion.

The creation of these leadership academies provides a vital piece of the broader evidence base for thinking about research leadership in the social sciences in a number of ways. First and foremost, many of these academies are keen to engage with social scientists in order to access the very latest research and thinking. Many of these academies – or their sectors more generally – employ significant numbers of researchers, and in many ways they exist at the intersection of research, policy and practice. As the recent report by the Institute for Government, *How government can work with academia* (June 2018), illustrated, many policy-makers struggle to draw on academic research effectively.¹⁷³ There are examples of initiatives that have been established to facilitate academic engagement (e.g. the Department for Education’s Analytic Associate Pool and the Cabinet Office’s Open Innovation Team), [b]ut these are exceptions rather than the rule. Too often, the use of academic evidence and expertise in forming policy is inconsistent and ad

¹⁷² Horne and Stedman Jones. *Leadership, the Challenge for All?*; Blackwell et al. *Creating Value Across Boundaries*.

¹⁷³ The final report, Sasse, T. and Haddon, C. (2019). *How Government Can Work with Academia*. London: Institute for Government; sets out five ways in which universities, research councils and funding councils can better support policy engagement: (1) Make academics easier to find, (2) Train academics to engage with policy, (3) Fund policy engagement, (4) Reward policy engagement and (5) Measure what is working.

hoc'.¹⁷⁴ The evidence therefore suggests something of a mirror-image development whereby potential research-users are increasingly keen to utilise social science but struggle to find suitable 'docking-points'. At the same time, the social sciences are increasingly eager to demonstrate the social value, relevance or impact of their scholarship but similarly face a range of obstacles that prevent the free flow of ideas across, and beyond, academe. **Cultivating a more strategic approach to researcher development and leadership may therefore play a significant role in facilitating knowledge mobilisation.**

The rapid emergence of a large number of leadership academies, each serving specific parts of the public sector, has produced questions and concerns regarding the efficiency of this framework and the need to ensure some level of inter-sectoral learning and coordination. In November 2017 a Centre for Public Services Leadership was created 'to complement existing provision and act as a centre of excellence; creating a framework for collaboration between providers, public and private sector leaders, driving standards of leadership training, and researching effective leadership interventions to improve public sector productivity'.¹⁷⁵ In many ways this new Centre for Public Services Leadership would act as a central hub for the public sector leadership landscape and a task force was established to advise on the creation of this new centre. As noted, in many ways the role of this new centre was to 'join-up' existing centres of excellence in order to –

- create a framework for collaboration between existing providers of public sector leadership development, and with private sector and academic institutions.
- develop opportunities to establish networks between outstanding public and private sector leaders to learn from and share mutual best practice.
- drive quality of leadership development training and support across the public sector through some form of standards assurance.
- undertake gap analysis with a focus on cross-public sector disciplines and potential impact of new technologies to increase innovation and productivity.
- strengthen research on public sector leadership and productivity, working alongside leading academics to establish and champion the use of data and evidence on the relationship between effective leadership and improved productivity.
- support and strengthen existing initiatives being taken forward across the public sector to champion leadership and its impact on public sector productivity.
- embed a culture of life-long learning within the public service, ensuring a recognition of the benefit of ongoing personal development at all levels of public service leaders.¹⁷⁶

The taskforce published its final report in October 2018 and focused on the benefits in terms of efficiency and productivity of a 'new home for collaborative leadership'. The report made two central recommendations:

1. That a new Centre for Public Services Leadership should create a new programme for emerging 'top leaders', designed to 'enhance their collaborative leadership skills, knowledge and behaviours'.
2. That it also establishes a professional network for these leaders to support each other, share best practice and learn from the experience of others.¹⁷⁷

The creation of a national Centre for Public Services Leadership may present significant opportunities for the social sciences in terms of (i) creating a capacity platform that could play a key role in cultivating outstanding research leaders, while also (ii) forging links between academe and a range of

¹⁷⁴ Sasse and Haddon (2018). How Government Can Work with Academia, p. 3.

¹⁷⁵ Great Britain. Centre for Public Services Leadership (2017). Public Services Leadership Taskforce Terms of Reference. London: Centre for Public Services Leadership. Available from: <https://www.gov.uk/government/publications/public-service-leadership-academy/public-service-leadership-academy-taskforce-terms-of-reference>

¹⁷⁶ Ibid.

¹⁷⁷ Great Britain. Centre for Public Services Leadership (2018). Better Public Services Report by the Public Services Leadership Taskforce. London: Centre for Public Services Leadership, p. 7.

research-user communities which, in turn, help demonstrate why the social sciences matter. That said, the evidence review by Deloitte and commissioned by the Cabinet Office on behalf of the taskforce contains a number of insights that have direct implications for the social sciences. First and foremost, although there are a large number of private companies and consultancies that offer leadership development courses or support, the provisions tends to be quite generic and content-driven. Furthermore, very few expose participants to the complex demands and pressures they are actually likely to face if promoted into a leadership position.¹⁷⁸ And yet exposing ‘future leaders’ to these pressures through specific exercises or through close interaction with people that have experience of coping with pressure is generally viewed as essential (this issue explains the emphasis of the Wellcome Trust’s ‘learning journey’ approach). The Deloitte review also found that few leadership development programmes offered a strong focus on driving new, unconventional or disruptive ways or working across traditional boundaries¹⁷⁹ (a focus that is at the forefront of the Academy of Medical Science’s FLIER scheme). The research also found that despite a massive amount of research literature on the general theme of leadership, there is very little detailed evaluative data on the impact of leadership development programmes.¹⁸⁰

Where evidence of positive impact is available it is often linked to processes of co-design and co-production with service users.¹⁸¹ The evidence reviewed by Deloitte also highlighted that **leadership development programmes tend to fail when they under-estimate the role of professional and organisational cultures and are too far removed from the day-to-day experiences of participants.**¹⁸² This resonates with the findings of research by the McKinsey Company who found that the impact of the structures and systems within which people work have a significant impact on the success, or otherwise, of training programmes – if ‘changed’ people return to an unchanged system the benefits of training may be lost.¹⁸³ This may be a particular challenge for the social sciences given the institutional and cultural obstacles identified above. Success, on the other hand, is associated with clarity regarding the aims, assumptions, and objectives of the provision which, in turn, should ideally have been developed through an open conversation with the relevant professional community.¹⁸⁴ Any organisation hoping to create a leadership pipeline must determine whether it is looking to maintain or challenge the status quo and then decide how best to advise, train and inspire the next generation. It requires understanding of the qualities that must be preserved, those that must be changed and those which must be introduced. Asking what sort of culture the professional community or organisation wishes to create, and understanding the types of skills and behaviours that people will need in order to achieve this, is also vital. The global public health community has, for example, attempted to define the skills necessary to tackle complex health problems in a globalized world.¹⁸⁵ **The evidence suggest that the social science community might benefit from a similar process in order to make sure the skills and competencies of its component disciplines are in**

¹⁷⁸ Deloitte (2018). Appendix C. Review of Existing leadership development provision, in Great Britain. Centre for Public Services Leadership (2018). *Better Public Services Report by the Public Services Leadership Taskforce*. London: Centre for Public Services Leadership. Available from:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752064/6.48_46_CO_CPSL-Report_A4-P_WEB_NoLogo__002_.pdf, pp. 36-45.

¹⁷⁹ Ibid.

¹⁸⁰ West, M. et al. (2015). *Leadership and Leadership Development in Healthcare: The Evidence Base*. London: The Faculty of Medical Leadership and Management (FMLM), The King’s Fund. Available from:

http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/leadership-leadership-development-health-care-feb-2015.pdf. This is an issue where Workforce Scotland’s new programme on Collective Leadership is attempting to innovate in terms of evaluative practice.

¹⁸¹ See, for example, Van Wart, M. (2013). Lessons from Leadership Theory and the Contemporary Challenges of Leaders. *Public Administration Review*, 73(4), pp. 553-565.

¹⁸² Beer, M., Finnström, M. and Schrader, D. (2016). Why Leadership Training Fails – and What to Do About It. *Harvard Business Review*, 94(10), pp. 50-57; Anderson, H. et al., Moving from The Margins.

¹⁸³ Gurdjian, P., Halbeisen, T. and Lane, K. (2014). Why Leadership-Development Programs Fail [online]. *McKinsey Q*. January 2014. Available from: <https://www.mckinsey.com/featured-insights/leadership/why-leadership-development-programs-fail>

¹⁸⁴ Stoll, L. et al (2011). Leadership Development for Junior Doctors: What Can We Learn From ‘Darzi’ Fellowships in Clinical Leadership? *International Journal of Leadership in Public Services*, 7(4), pp. 273-286.

¹⁸⁵ Lomazzi, M., Jenkins, C. and Borisch, B. (2016). Global Public Health Today: Connecting the Dots. *Global Health Action*, 9(1), pp. 1-11.

alignment with the changing research landscape. In short, to make sure that the social sciences are 'fit for the future'.

6. Discussion

The aim of this document has been to review the existing evidence base in relation to researcher development and research leadership. Three key issues appear pertinent to structuring any future discussion on this topic.

The first issue relates to the quality and quantity of the existing research base: it is extremely limited. We know very little about ‘the science of social science’, about ‘what works’ in relation to navigating boundaries, about the challenges and opportunities posed by an emphasis on ‘team science’, or how to manage research talent. As a result, policy decisions and financial investments risk being made on the basis of an evidence base that has been correctly described as being ‘relatively emaciated’. It might therefore be useful for the **ESRC to commission a programme of research** that could rectify this situation and offer a firmer foundation for future policy decisions.

Notwithstanding this comment about the need for further research, there does seem to be a major problem with the existing structures for nurturing researcher development, in general, and building research leadership capacity, in particular. Not only does the provision of these critical elements of research infrastructure appear to be somewhat threadbare in many places, where provision is in place it often fails to capture the dynamic demands of contemporary scholarship in terms of inter-disciplinary and inter-sectoral mobility. The existing incentives structures do little to encourage researchers to proactively engage in the re-design of such provision while also doing little to penalise those who would leave the risks and labours of research leadership to others. **And yet what has been termed the researcher development and leadership challenge is by definition a collective challenge that can only be addressed through a collective conversation and concerted collaborative action.**

This flows into a third and final point: the changing funding landscape – with its uncertainties, flux and volatility - undoubtedly presents a number of challenges for the social sciences. And yet those disciplines that are most likely to flourish in this context are those that see opportunities and positive openings where others see just problems and dilemmas. The creation of UKRI brings new strategic capacity and there has never been a time when the potential role and impact of the social sciences was greater. The government’s plans to significantly increase research funding represents an ambitious commitment to retaining and developing the United Kingdom’s global reputation for scientific excellence and the social sciences represent a central part of this exciting new agenda. **The question is really about not only how the social sciences can ‘step up’ to the demands of this new agenda but also about how they can help shape and define this new strategic context.** This is likely to demand a fresh approach to building research infrastructure with an emphasis on the mobility of people and ideas and a focus on talent management throughout the full professional journey at its core.

7. References

- Academy of Medical Sciences (2012). Team Science: A Discussion Paper. London: Academy of Medical Sciences
- Academy of Medical Sciences (2015). Team Science Working Group - Project Update. London: Academy of Medical Sciences
- Academy of Medical Sciences (2016). Improving the Recognition of Team Science Contributions in Biomedical Research Careers. London: Academy of Medical Sciences
- Academy of Medical Sciences (2017). Strategic Plan, 2017-2021. London: Academy of Medical Sciences. Available from: <https://acmedsci.ac.uk/file-download/55580105>
- Academy of Medical Sciences (2017). Developing Talent, Strategic Plan, 2017-2021 [online]. London: Academy of Medical Sciences. Available from: <https://acmedsci.ac.uk/about/strategy-2017-21/strategic-challenges-2017-21>
- Academy for Medical Sciences (2018). Academy Secures £11.2 Million for Innovative Programmes [online]. *Academy of Medical Sciences*, 20 June 2018. Available from: <https://acmedsci.ac.uk/more/news/academy-secures-112-million-for-innovative-programmes->
- Academy of Medical Sciences (2018). Developing the Next Generation of Biomedical Talent: A Snapshot of UK Support for Early Career Researchers. London: Academy of Medical Sciences
- Academy of Medical Sciences (2018). FLIER: Future Leaders in Innovation, Enterprise and Research [online]. Available from: <https://acmedsci.ac.uk/grants-and-schemes/mentoring-and-other-schemes/FLIER>
- Academy of Medical Sciences (2019). From Innovation to Implementation: Team Science Two Years On. London: The Academy of Medical Sciences
- Action, S. et al (2019). The Life of P.I.: Transitions to Independence in Academia. *bioRxiv*, pp. 1-9
- Advance HE (2018). Equality in Higher Education: Staff Statistical Report 2018. London: Advance HE
- Akerlind, G.S. (2008). An Academic Perspective on Research and Being a Researcher: An Integration of The Literature. *Studies in Higher Education*, 33(1), pp. 17-31
- Ancona, D. et al. (2007). In Praise of the Incomplete Leader. *Harvard Business Review*, 85(2), pp. 92-100
- Anderson, H. et al. (2016). Moving from the Margins: The Challenges of Building Integrated Local Services. London: Turning Point and Collaborate CIC
- Anonymous Academic (2014). Academics Anonymous: An Open Letter to University 'Leaders' [online]. *The Guardian*, 8 August 2014. Available from: <https://www.theguardian.com/higher-education-network/blog/2014/aug/08/academics-anonymous-open-letter-university-leaders>
- Anonymous Academic (2017). Work in an Academic-Professional Hybrid Role? Say Goodbye to Career Progression [online]. *The Guardian*, 29 September 2017. Available from: <https://www.theguardian.com/higher-education-network/2017/sep/29/work-academic-professional-hybrid-role-say-goodbye-career-progression>

- Arshad-Ayaz, A. (2008). From Producing Citizens to Producing Managers: Education in a Globalized World, in Hopson, R.K., Yeakey, C.C. and Boakari, F.M. (eds). *Power, Voice and the Public Good: Schooling and Education in Global Societies*. Bingley: Emerald Group Publishing, pp. 479-506
- Archer, D. and Cameron, A. (2009). *Collaborative Leadership: How to Succeed in an Interconnected World*. Abingdon: Routledge
- Arnold, D. (2009). Billion Dollar Brains [online]. *New Civil Engineer*, 29 November 2009. Available from: <https://www.newcivilengineer.com/billion-dollar-brains/5211354.article>
- Ashworth, P. and Lucas, U. (1998). What Is The 'World' Of Phenomenography? *Scandinavian Journal of Educational Research*, 42(4), pp. 415-431
- Association for Project Management (2018). *Project Leadership: Skills, Behaviours, Knowledge and Values*. Princes Risborough: Association for Project Management
- Avolio, B.J. and Gardner, W.L. (2005). Authentic Leadership Development: Getting to the Root of Positive Forms of Leadership. *The Leadership Quarterly*, 16, pp. 315-338
- Bacon, E. (2014). *Neo-Collegiality: Restoring Academic Engagement in the Managerial University*. London: Leadership Foundation for Higher Education
- Baker, B. (2015). The Science of Team Science. *BioScience*, 65(7), pp. 639-644
- Barsh, J., Cranston, S. and Craske, R.A. (2008). Centered leadership: How Talented Women Thrive. *McKinsey Quarterly*, 4, pp. 35-48
- Bazeley, P. (2003). Defining 'Early Career' in Research. *Higher Education*, 45(3), pp. 257-279
- Becher, T. and Trowler, P.R. (2001). *Academic Tribes and Territories*. Buckingham: Society for Research in Higher Education, Open University Press
- Beer, M., Finnström, M. and Schrader, D. (2016). Why Leadership Training Fails - and What to Do About It. *Harvard Business Review*, 94(10), pp. 50-57
- Berlin, Isaiah (2013). *The Hedgehog and the Fox: An Essay on Tolstoy's View of History*. 2nd ed. London: Orion Publishing
- Blackmore, P. (2007). Disciplinary Difference in Academic Leadership and Management and Its Development: A Significant Factor? *Research in Post-Compulsory Education*, 12(2), pp. 225-239
- Blackmore, P. (2014). *Leading Academic Talent to a Successful Future: An International Perspective*. London: Leadership Foundation for Higher Education
- Blackmore, P. and Kandiko, C. (2009). Leading Across Disciplinary Boundaries. *Engage*, 19, pp. 10-11
- Blackmore, P. and Kandiko, C. (2011). Interdisciplinarity Within an Academic Career. *Research in Post-Compulsory Education*, 16(1), pp. 123-134
- Blackmore, P. and Kandiko, C. (2010). Interdisciplinary Leadership and Learning, in Davies, M., Devlin, M. and Tight, M. (eds). *Interdisciplinary Higher Education, International Perspectives on Higher Education Research*. Amsterdam: Emerald Group Publishing, pp. 55-74
- Blackwell, A. et al. (2010). *Creating Value Across Boundaries: Maximising the Return from Interdisciplinary Innovation*. London: Nesta

- Bagnell, P. (2012). Facilitators and Barriers to Leadership and Quality Improvement: The King's Fund Junior Doctor Project. London: The King's Fund. Available from: <http://www.kingsfund.org.uk/sites/files/kf/facilitators-barriers-leadership-quality-improvement-pippa-bagnall-leadership-review2012-paper.pdf>
- Ball, S. (2007). Leadership of Academics in Research. *Educational Management Administration and Leadership*, 35(4), pp. 449-477
- Bass, B.M. (1985). Leadership and Performance Beyond Expectations. New York: Free Press
- Bathurst, R. and van Gelderen, M. (2014). Leading Higher Education Professionals: Local, Connected, and Artful. *Journal of Higher Education Policy and Management*, 36(4), pp. 395-407. Available from: 10.1080/1360080X.2014.916464%5Cn<http://search.ebscohost.com/login.aspx?direct=true&db=buh&ndAN=96920163&lang=de&site=ehost-live>.
- Bauman, M.D., Howell, L.P. and Villablanca, A.C. (2014). The Women in Medicine and Health Science Program: An Innovative Initiative to Support Female Faculty at the University of California Davis School of Medicine. *Acad. Med.*, 89, pp. 1462-1466
- Becher, T. and Trowler, P. (2001). Academic tribes and territories: intellectual enquiry and the cultures of disciplines. Baltimore: SRHE and Open University Press
- Behavioural Insights Team (2018). Evidence Report: Literature Review and Semi-Structured Interviews to Support the Establishment of the Centre for Public Service Leadership. London: Behavioural Insights Team
- Bennet, E. (2013). The Future of Learned Associations in the Humanities. *Learned Publishing*, 26, pp. 32-41
- Bensimon, E.M. and Neumann, A. (1994). Redesigning Collegiate Leadership: Teams and Teamwork in Higher Education. Baltimore; London: Johns Hopkins University Press
- Bhopal, K., Brown, H. and Jackson, J. (2015). Academic Flight: How to Encourage Black and Minority Ethnic Academics to Stay in UK Higher Education. Research Report. London: Equality Challenge Unit. Available from: www.ecu.ac.uk/wp-content/uploads/2015/03/ECU_Academic-flight-from-UK-education_RR.pdf
- Bloom, N. et al. (2015). Does Management Matter in Schools? *The Economic Journal*, 125(584), pp. 647-674
- Blackmore, R. (2014). Leading Academic Talent to a Successful Future: An International Perspective. Stimulus Paper. London: Leadership Foundation for Higher Education
- Blanchard, K., Zigarmi, P. and Zigarmi, D. (2015). Leadership and the One Minute Manager. New York: Harper Thorsons
- Bolden, R. (2004). What is Leadership? Exeter: University of Exeter
- Bolden, R., Petrov, G. and Gosling, J. (2008). Developing Collective Leadership in Higher Education. Research and Development Series. London: Leadership Foundation for Higher Education
- Bolden, R. et al. (2009). Leadership in Higher Education: Facts, Fiction and Futures - Introduction to the Special Issue. *Leadership*, 5(3), pp. 291-298
- Bolden, R., Petrov, G. and Gosling, J. (2009). Distributed Leadership in Higher Education: Rhetoric and Reality. *Educational Management Administration and Leadership*, 37(2), pp. 257-77

- Bolden, R. (2010). *The Elusive Nature of Leadership Practice: An Investigation into the Distribution, Practice and Discursive Processes of Leadership in Universities and Other Large Organisations*. PhD Thesis, University of Exeter. Available from: <https://ore.exeter.ac.uk/repository/handle/10036/104833>
- Bolden, R. et al. (2012). *Research and Development Series. Academic Leadership: Changing Conceptions, Identities and Experiences in UK Higher Education*. London: Leadership Foundation for Higher Education
- Bolden, R. et al. (2015). *Developing and Sustaining Shared Leadership in Higher Education*. Stimulus Paper. London: Leadership Foundation for Higher Education
- Bolden, R. and O'Regan, N. (2018). Leadership and Creativity in Public Services: An Interview with Lord Michael Bichard, Chair of the National Audit Office. *Journal of Management Inquiry*, 27(1), pp. 45-51. Available from: <http://eprints.uwe.ac.uk/30628>
- Boud, D. et al. (2014). The Coordination Role in Research Education: Emerging Understandings and Dilemmas for Leadership. *Journal of Higher Education Policy and Management*, 36(4), pp. 440-454
- Boulton, G. (2010). *Harvesting Talent: Strengthening Research Careers in Europe*. Leuven, Belgium: The League of European Research Universities
- Boyden, P. (2000). *Roles and Functions of the English Regional Producing Theatres: Final Report to the Arts Council of England*. Bristol: Peter Boyden Associates
- Brennan, J., Locke, W. and Naidoo, R. (2007). United Kingdom: An Increasingly Differentiated Profession, in Locke, W. and Teichler, U. (eds). *The Changing Conditions for Academic Work and Careers in Select Countries*. Kassel: International Centre for Higher Education Research Kassel, pp. 163-176
- Brew, A. et al. (2017). Responding to University Policies and Initiatives: The Role of Reflexivity in the Mid-Career Academic. *Journal of Higher Education Policy and Management*, 39(4), pp. 378-289
- Brew, A. et al. (2018). Academic Artisans in The Research University. *Higher Education*, 76(1), pp. 115-127
- British Academy [The] (2016). *Crossing Paths: Interdisciplinary Institutions, Careers, Education and Applications*. London: The British Academy
- British Academy [The] (2017). *The Right Skills: Celebrating Skills in the Arts, Humanities and Social Sciences (AHSS)*. London: British Academy
- Browning, L., Thompson, K. and Dawson, D. (2017). From Early Career Researcher to Research Leader: Survival of the Fittest? *Journal of Higher Education Policy and Management*, 39(4), pp. 361-377
- Bryman, A. (2007). Effective Leadership in Higher Education: A Literature Review. *Studies in Higher Education*, 32(6), pp. 693-710
- Burgoyne, J., Mackness, J. and Williams, S. (2009). *Baseline Study of Leadership Development in Higher Education, 2009: Final Report*. London: Leadership Foundation for Higher Education
- Burkill, S. (2014). Challenging the Pedagogic Norms, in Layne, P.C. and Lake, P. (2014). *Global Innovation of Teaching and Learning in Higher Education*. New York: Springer International Publishing, pp. 71-90
- Burkill, S. (2017). *Reluctant to Lead?: Perspectives on Academic Educational Leadership in a Research Intensive University*. PhD Thesis, University of Exeter. Available from: <http://hdl.handle.net/10871/31662>

- Burns, J.M. (1978). *Leadership*. New York: Harper and Row
- Byington, C.L. et al. (2016). A Matrix Mentoring Model That Effectively Supports Clinical and Translational Scientists and Increases Inclusion in Biomedical Research: Lessons from the University of Utah. *Academic Medicine*, 91, pp. 497-502
- Caprino, K. (2018). The Changing Face of Leadership: 10 New Research Findings All Leaders Need to Understand [online]. *Forbes*, 28 February 2018. Available from: <https://www.forbes.com/sites/kathycaprino/2018/02/28/the-changing-face-of-leadership-10-new-research-findings-all-leaders-need-to-understand/#c0181e761974>
- Carnes, M. and Bland, C. (2007). Viewpoint: A Challenge to Academic Health Centers and the National Institutes of Health to Prevent Unintended Gender Bias in the Selection of Clinical and Translational Science Award Leaders. *Academic Medicine*, 82, pp. 202-206
- Carr, P.L. et al. (2015). Inadequate Progress for Women in Academic Medicine: Findings from the National Faculty Study. *Womens Health*, 24, pp. 190-199
- Carton, A.M. and Rosette, A.S. (2011). Explaining Bias Against Black Leaders: Integrating Theory on Information Processing and Goal-Based Stereotyping. *Acad. Manage*, 54, pp. 1141-1158
- Chambers, D. et al. (2017): Review of Diversity and Inclusion Literature and an Evaluation of Methodologies and Metric Relating To Health Research. Working Paper. University of Sheffield and The Wellcome Trust. Available from: <https://wellcome.ac.uk/sites/default/files/review-of-diversity-and-inclusion-literature.pdf>
- Chapman, C. et al. (2016). How Public Service Leadership is Studied. *Public Administration*, 94(1), pp. 111-128
- Chartered Institute of Personnel and Development (CIPD) (2015). *Developing the Next Generation: Today's Young People, Tomorrow's Workforce*. London: Chartered Institute of Personnel and Development (CIPD)
- Chia, R. and Holt, R. (2006). Strategy as Practical Coping: A Heideggerian Perspective. *Organization Studies*, 27, pp. 635-655
- Chrislip, D. and Larson, C. (1994). *Collaborative Leadership: How Citizens and Civic Leaders Can Make a Difference*. San Francisco: Jossey-Bass
- Civil Service Leadership Academy (2017). *Empowering, Confident and Inspiring*. London: Civil Service Leadership Academy. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/648194/CSLA_Brochure.PDF
- Coleman, S. and MacNicol, D. (2015). *Project Leadership*. Aldershot: Gower
- Concordat [The] (2018). *The Independent Review of the Concordat to Support the Career Development of Researchers*. Available from: <https://www.ukri.org/files/skills/concordatreviewreport-jun2018-pdf/>
- Concordat Strategy Group [The] and Vitae (2008). *The Concordat to Support the Career Development of Researchers*. Cambridge: The Concordat Strategy Group and Vitae
- Concordat [The] (2018). *Concordat Strategy Group Response to the Independent Review of the Concordat to Support the Career Development of Researchers*. Available from: <https://www.ukri.org/files/skills/csg-concordat-review-response-september-2018-pdf/>

- Cooke, N. et al. (2015). *Enhancing the Effectiveness of Team Science*. Washington DC: National Academies Press
- Cooperrider, D.L. and Whitney, D. (2005). *A Positive Revolution in Change: Appreciative Inquiry*. Oakland, California: Berrett-Koehler Publishers.
- Covey, S.J. (2017). *The 7 Habits of Highly Effective People*. New York: Free Press
- Dannels, S. et al. (2008). Evaluating a Leadership Program: A Comparative, Longitudinal Study to Assess the Impact of the Executive Leadership in Academic Medicine (ELAM) Program for Women. *Acad. Med.* 83(5), pp. 488-495
- Davis, H. and Jones, S. (2014). The Work of Leadership in Higher Education Management. *Journal of Higher Education Policy and Management*, 36(4), pp. 367-370. Available from: <http://www.tandfonline.com/doi/full/10.1080/1360080X.2014.916463#abstract>
- Deem, R. (1996). Border Territories: A Journey through Sociology, Education and Women's Studies. *British Journal of Sociology of Education*, 17(1), pp. 5-19
- Deem, R. (2010). Herding the Academic Cats. *Perspectives: Policy and Practice in Higher Education*, 14(2), pp. 37-43
- Deem, R. and Brehony, K. J. (2000). Doctoral Students' Access to Research Cultures - Are Some More Unequal Than Others? *Studies in Higher Education*, 25(2), 149-165
- Denis, J.L., Langley, A. and Sergi, V. (2012). Leadership in the Plural. *The Academy of Management Annals*, 6, pp. 211-283
- De Smet, A., Lurie, M. and St. George, A. (2018). *Leading Agile Transformation: The New Capabilities Leaders Need to Build 21st-Century Organizations*. New York: McKinsey and Company
- Devlin, G., Carty, H. and Turner, N. (2008). *Meeting the Challenge: Leadership Development in the Cultural and Creative Industries*. London: Cultural Leadership Programme
- Dike, D. (2017). Leadership, Innovation and the Future [online]. *Management Issues*, 3 August 2017. Available from: <https://www.management-issues.com/opinion/6533/leadership-innovation-and-the-future/>
- Dingwall, R., Hewitt, M. and Turkmendag, I. (2014). *Evaluation of Learned Societies Project 2014*. London: Academy of Social Sciences. Available from: <https://www.acss.org.uk/wp-content/uploads/2014/10/Evaluation-of-Learned-Societies-Project-2014.pdf>
- Dinwall, R. (2018). *The SAGE Handbook of Research Management*. London: SAGE Publications
- Doyle, M., Pederson, A. and Meltzer-Brody, S. (2016). Demographic and Personal Characteristics of Male and Female Chairs in Academic Psychiatry. *Acad Psychiatry*, 40(3), pp. 402-409
- Drowley, M. and Ford, K. [Forthcoming]. *Leadership Development for Early Career Quality Professionals in Higher Education: A Critical Review of Literature*. Cardiff, Newport and Pontypridd: University of South Wales
- Eagly, A.H., Johannesen-Schmidt, M.C. and van Engen, M.L. (2003). Transformational, Transactional, and Laissez-Faire Leadership Styles: A Meta-Analysis Comparing Women and Men. *Psychol. Bull.* 129, pp. 569-591

Eddy, P.L. (2006). Emerging Definitions of Leadership in Higher Education: New Visions of Leadership or Same Old 'Hero' Leader? *Community Coll. Rev*, 34, pp. 5-26

Edgar, F. and Geare, A. (2011). Factors Influencing University Research Performance. *Studies in Higher Education*, 38(5), pp. 774-792

Elkins, T. and Keller, R.T. (2003). Leadership in Research and Development Organizations: A Literature Review and Conceptual Framework. *Leadership Q*, 14, pp. 587-606

ESRC (2015). ESRC Postgraduate Training and Development Guidelines Second Edition 2015. Swindon: ESRC. Available from: <https://esrc.ukri.org/files/skills-and-careers/doctoral-training/postgraduate-training-and-development-guidelines-2015/>

Equality Challenges Unit (2013). Unconscious Bias and Higher Education. London: Equality Challenges Unit. Available from: <http://www.ecu.ac.uk/wp-content/uploads/2014/07/unconscious-bias-and-higher-education.pdf>

European Commission (2005). European Charter and Code of Conduct for the Recruitment of Researchers 2005. Brussels; Luxembourg: European Commission. Available from: <https://www.vitae.ac.uk/policy/european-charter-and-code-of-conduct-2005-vitae.pdf>

European Commission (2011). Towards a European Framework for Research Careers. Brussels; Luxembourg: European Commission. Available from: https://cdn5.euraxess.org/sites/default/files/policy_library/towards_a_european_framework_for_research_careers_final.pdf

European Commission (2017). ERA-SGHRM Working Group on Innovative Transnational Research Mobility and Welcoming Researchers to Europe. Brussels; Luxembourg: European Commission. Available from: https://cdn3.euraxess.org/sites/default/files/policy_library/final_era-sghrm_innovative_transnational_research_mobility_and_welcoming.pdf

European Commission (2018). Integration of Social Sciences and Humanities in Horizon 2020: Participants, Budgets and Disciplines. Brussels; Luxembourg: European Commission. Available from: https://ec.europa.eu/research/social-sciences/pdf/other_pubs/ki-02-18-463-en-n.pdf

European Commission (2018). Study on Fostering Industrial Talents in Research at European Level. Brussels; Luxembourg: European Commission

European Commission (2018). New! Research Profiles Descriptors. Brussels; Luxembourg: European Commission. Available from: <https://euraxess.ec.europa.eu/europe/career-development/training-researchers/research-profiles-descriptors>

European Science Foundation (2009). Research Careers in Europe Landscape and Horizons. Strasbourg, France: European Science Foundation

Evans, L. (2007). Developing Research Cultures and Researchers in HE: The Role of Leadership. Annual Conference of the Society for Research into Higher Education. Leeds: Education-line, University of Leeds. Available from: <http://www.leeds.ac.uk/educol/documents/175679.pdf>

Evans, L. (2011). The Scholarship of Researcher Development: Mapping the Terrain and Pushing Back Boundaries. *International Journal for Researcher Development*, 2(2), pp. 75-98

Evans, L. (2012). Leadership for Researcher Development: What Research Leaders Need to Know and Understand. *Educational Management Administration and Leadership*, 40(4), pp. 423-435

- Evans, L. (2014). What is Effective Research Leadership? A Research-Informed Perspective. *Higher Education Research and Development*, 33(1), pp. 46-58. Available from: <http://www.tandfonline.com/doi/abs/10.1080/07294360.2013.864617>
- Evans, L. (2017). University Professors as Academic Leaders? Professorial Leadership Development Needs and Provision in the UK. *Educational Management Administration and Leadership*, 45, pp. 1-18. Available from: [http://eprints.whiterose.ac.uk/83429/3/Evansrevised version.pdf](http://eprints.whiterose.ac.uk/83429/3/Evansrevised%20version.pdf).
- Evans, L. (2018). Professors as Academic Leaders: Expectations, Enacted Professionalism and Evolving Roles. London: Bloomsbury Publishing
- Evans, L., Homer, M. and Rayner, S. (2013). Professors as Academic Leaders: The Perspectives of ‘the Led’. *Educational Management Administration and Leadership*, 41(5), pp. 674-689. Available from: <http://ema.SAGEpub.com/cgi/doi/10.1177/1741143213488589>
- Falk-Krzesinski, H. et al. (2010). Advancing the Science of Team Science. *Clinical and Translational Science*, 3(5), pp. 263-266
- Feser, C., Nielsen, N. and Rennie, M. (2017). What’s Missing in Leadership Development? *McKinsey Quarterly*, 3, pp. 20-24
- Fiedler, F.E. (1978). The Contingency Model and the Dynamics of the Leadership Process. *Advances in Experimental Social Psychology*, 11, pp. 59-112
- Flinders, M. et al. (2016). Pursuing the Diversity and Inclusion Agenda. *European Political Science*, 15(4), pp. 508-18
- Frodeman, R. ed. (2017). The Oxford Handbook of Interdisciplinarity (2 ed.). Oxford: Oxford University Press
- Gardner, E. and Jubb, M. (2016). Strategies for Learned Societies in the Humanities and Social Sciences: A Report for the Economic and Social Research Council and the Arts and Humanities Research Council. London: Royal Geographical Society with IBG
- Gentle, P. and Foreman, D. (2014). Engaging Leaders: The Challenge of Inspiring Collective Commitment in Universities. Abingdon: Routledge
- George, B. (2004). Authentic Leadership: Rediscovering the Secrets to Creating Lasting Value. San Francisco: Jossey-Bass
- Glaser, B. and Strauss, A.L. (1999). Discovery of Grounded Theory: Strategies for Qualitative Research. New Jersey: Aldine Transaction
- Global Research Council (2014). Statement of Principles and Actions for Shaping the Future: Supporting the Next Generation of Researchers. Global Research Council. Available from: http://www.nsf.gov.cn/Portals/0/fj/english/20140529_01.pdf
- Goffee, R. and Jones, G. (2007). Leading Clever People. *Harvard Business Review*, 85(3), pp. 72-79
- Gough, D., Maidment, C. and Sharples, J. (2018). UK What Works Centres: Aims, Methods and Contexts. London: EPPI-Centre, Social Science Research Unit, UCL Institute of Education, University College London
- Goleman, D., Boyatzis, R. and McKee, A. (2002). The New Leaders. London: Sphere

Guccione, K. (2016). *More than Lucky? Exploring Self-Leadership in the Development and Articulation of Research Independence*. London: Leadership Foundation for Higher Education

Gosling, J., Bolden, R. and Petrov, G. (2009). Distributed Leadership in Higher Education: What Does It Accomplish? *Leadership*, 5(3), pp. 299-310

Guthrie, S. et al (2017). *Understanding Mental Health in the Research Environment: A Rapid Evidence Assessment*. Santa Monica, CA: RAND Corporation. Available from: https://www.rand.org/pubs/research_reports/RR2022.html

Gray, B. (2008). Enhancing Transdisciplinary Research Through Collaborative Leadership. *American Journal of Preventive Medicine*, 35, pp. 124-132

Great Britain. Centre for Public Services Leadership (2017). *Public Services Leadership Taskforce Terms of Reference*. London: Centre for Public Services Leadership. Available from: <https://www.gov.uk/government/publications/public-service-leadership-academy/public-service-leadership-academy-taskforce-terms-of-reference>

Great Britain. Centre for Public Services Leadership (2018). *Better Public Services Report by the Public Services Leadership Taskforce*. London: Centre for Public Services Leadership

Great Britain. Department for Business, Innovation and Skills (2015). *Business Population Estimates for the UK and Regions 2015*. London: Department for Business, Innovation & Skills. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/467443/bpe_2015_statistical_release.pdf.

Great Britain. HM Treasury (2002). *SET for Success: The Supply of People with Science, Technology, Engineering and Mathematics Skills. The report of Sir Gareth Roberts' Review*. London: HM Treasury

Great Britain. HM Treasury (2015). *National Infrastructure Plan for Skills*. London: HM Treasury. Available from: www.gov.uk/government/publications/national-infrastructure-plan-for-skills. Accessed 20 July 2018.

Great Britain. House of Commons (2001). *Joining-Up to Improve Public Services*. HC383, Session 2001-2002. London: House of Commons. Available from: https://www.accenture.com/us-en/~media/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Indurties_17/Accenture-Joining-Up-to-Improve-Public-Services.pdf

Great Britain. Infrastructure and Projects Authority and Cabinet Office (2015). *The MPLA Course Handbook*. London: Infrastructure and Projects Authority and Cabinet Office. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/405600/MPLA_Handbook_for_gov_uk.pdf

Greenleaf, R. (1977). *The Servant as Leader: A Journey into the Nature of Legitimate Power and Greatness*. Mahwah, NJ: Paulist Press

Gronn, P. (2002). Distributed Leadership as a Unit of Analysis. *The Leadership Quarterly*, 13(4), pp. 423-451

Gronn, P. (2008). The Future of Distributed Leadership. *Journal of Educational Administration*, 46(2), pp. 141-158

Gurdjian, P., Halbeisen, T. and Lane, K. (2014). Why Leadership-Development Programs Fail [online]. *McKinsey Quarterly*, January 2014. Available from: <https://www.mckinsey.com/featured-insights/leadership/why-leadership-development-programs-fail>

Hall, K.L. et al (2018). The Science of Team Science: A Review of the Empirical Evidence and Research Gaps on Collaboration in Science. *American Psychologist*, 73(4), pp. 532-548

Hamel, G. (2007). *The Future of Management*. Cambridge, Massachusetts: Harvard Business School Press

Hamel, G. (2012). *What Matters Now: How to Win in a World of Relentless Change, Ferocious Competition, and Unstoppable Innovation*. New Jersey: John Wiley and Sons

Helitzer, D.L. et al. (2016). Narratives of Participants in National Career Development Programs for Women in Academic Medicine: Identifying the Opportunities for Strategic Investment. *Womens Health*, 25, pp. 360-370

Hempsall, K. (2014). Developing Leadership in Higher Education: Perspectives from the USA. *The UK and Australia Journal of Higher Education Policy and Management*, 36(4), pp. 383-394

Herriot Watt University (2018). Celebrating a Decade of Scottish Crucible [online]. *Herriot Watt University News*, 10 December 2018. Available from: <https://www.hw.ac.uk/about/news/internal/2018/celebrating-a-decade-of-scottish-crucible.htm>

Hersey, P. and Blanchard, K. (1982). *Management of Organizational Behaviour: Utilizing Human Resources*. Upper Saddle River, New Jersey: Prentice Hall

Hewison, R. and Holden, J. (2002). *Clore Leadership Programme: Task Force Final Report*, December 2002. London: Clore Duffield Foundation

Hewison, R. and Holden, J. (2013). *Creative Leadership: A Future Vision for the Clore Leadership Programme*. London: Clore Leadership Foundation. Available from: <https://www.cloreleadership.org/resources/creative-leadership-future-vision-clore-leadership>

Hicks, M.D. and Petersen, D. (1996). *Leader as Coach: Strategies for Coaching and Developing Others*. Minneapolis: Personnel Decisions International

Higher Education Funding Council for England (HEFCE) (2010). *The Higher Education Workforce Framework 2010: Overview Report*. Bristol: Higher Education Funding Council for England (HEFCE)

Hirsh, W. and Tyler, E. (2017). *Talent Management: Learning Across Sectors*. London: Leadership Foundation for Higher Education

Hirschman, A. (1981). *Essays in Trespassing: Economics to Politics and Beyond*. Cambridge and New York: Cambridge University Press

Hill-Smith, L. (2013). The Golden Heart of Soft Skills [online]. *Training Journal*, 1 September 2013. Available from: <https://www.trainingjournal.com/articles/feature/golden-heart-soft-skills>

Holland, G. (1998). *Review of Management Training and Development in the Museums, Galleries and Heritage Sector: The Final Report, December 1997 (The Holland Report)*. Bradford: Museum Training Institute

Horne, M. and Stedman Jones, D. (2001). *Leadership, the Challenge for All?* London: Institute of Management

Ibarra, H. and Hansen, M.T. (2011). Are You a Collaborative Leader? [online] *Harvard Business Review*, July-August 2011. Available from: <https://hbr.org/2011/07/are-you-a-collaborative-leader>

- Inman, M. (2011). The Journey to Leadership for Academics in Higher Education. *Educational Management Administration and Leadership*, 39(2), pp. 228-241
- Inman, M. (2014). Bringing Life to Leadership: The Significance of Life History in Reviewing Leadership Learning Within Higher Education. *International Journal of Leadership in Education: Theory and Practice*, 17(2), pp. 237-256
- International Centre for Complex Project Management (2018). Project Leadership: The Game Changer in Large Scale Complex Projects, Roundtable Series. Deacon West, Australia: International Centre for Complex Project Management
- Institute of Leadership and Management [the] (2018). What Can Leaders Do to Promote Cultures of Agility? [online]. Available from: <https://www.institutelm.com/resourceLibrary/what-can-leaders-do-to-promote-cultures-of-agility.html>
- Jessop, B. (2017). Varieties of Academic Capitalism and Entrepreneurial Universities: On Past Research and Three Thought Experiments. *Higher Education*, 73(6), pp. 853-870
- Jessop, B. (2018). On Academic Capitalism. *Critical Policy Studies*, 12(1), pp. 104-109
- Jones, M.M. et al (2012). The National Institute for Health Research Leadership Programme: An Evaluation of Programme Progress and Delivery. Santa Monica, CA: RAND Corporation. Available from: https://www.rand.org/pubs/technical_reports/TR1162.html
- Jones, R. and Wilsdon, J. (2018). The Biomedical Bubble: Why UK Research and Innovation Needs A Greater Diversity of Priorities, Politics, Places and People. London: NESTA
- Jones, S. et al. (2014). Evidence-Based Benchmarking Framework for a Distributed Leadership Approach to Capacity Building in Learning and Teaching. Final Report. Strawberry Hills, Australia: Office for Learning and Teaching
- Juntrasook, A. et al. (2013). Unpacking the Narrative of Non-Positional Leadership in Academia: Hero and/or Victim? *Higher Education Research and Development*, 32(2), pp. 201-213
- Juntrasook, A. (2014). 'You Do Not Have to Be the Boss to Be a Leader': Contested Meanings of Leadership in Higher Education. *Higher Education Research and Development*, 33(1), pp.19-31
- Kandiko, C.B. (2013). Why Work in Academia? A Comparative Analysis of Motivation and Prestige Factors of Academics in Different National Contexts. Final Report for SRHE Newer Researcher's Prize 2011. London: Society for Research into Higher Education
- Kandiko, C.B. and Blackmore, P. (2008). Institutionalising Interdisciplinary Work in Australia and the UK. *Journal of Institutional Research*, 14(1), pp. 87-95
- Kekale, J. (1999). 'Preferred' Patterns of Academic Leadership in Different Disciplinary (Sub) Cultures. *Higher Education*, 37(3), pp. 217-238
- Keohane, N. O. (2010). Thinking About Leadership. Princeton: Princeton University Press
- Kezar, A.J., Carducci, R. and Contreras-McGavin, M. (2006). Rethinking the 'L' Word in Higher Education: The Revolution of Research on Leadership. ASHE Higher Education Report. New Jersey: John Wiley and Sons
- Khan, M. et al. (2019). More Talk than Action: Gender and Ethnic Diversity in Leading Public Health Universities. *The Lancet*, 393, pp. 594-600

- King's Fund [The] (2011). The Future of Leadership and Management in the NHS. No More Heroes. Report from The King's Fund Commission on Leadership and Management in the NHS. London: The King's Fund. Available from: <http://www.kingsfund.org.uk/sites/files/kf/future-of-leadership-and-management-nhs-may-2011-kings-fund.pdf>
- Kligyte, G. and Barrie, S. (2014). Collegiality: Leading us into Fantasy - The Paradoxical Resilience of Collegiality in Academic Leadership. *Higher Education Research and Development*, 33(1), pp. 157-169
- Knight, D.A. et al. (2017). A Whole New World: Funding and Commissioning in Complexity. London: Collaborate CIC
- Knights, D. and Richards, W. (2003). Sex Discrimination in UK Academia. *Gender Work Organisation*, 10(2), pp. 213-38
- Kotter, J. (1996). *Leading Change*. Cambridge, Massachusetts: Harvard Business School Press
- Kotter, J.P. (1990). *A Force for Change: How Leadership Differs from Management*. New York: Free Press
- Kouzes, B.Z. and Posner, J.M. (2011). *Credibility: How Leaders Gain and Lose It, Why People Demand It*. San Francisco: Jossey-Bass
- Kouzes, J.M. and Posner, B.Z. (2003). *The Leadership Challenge*, 3rd Edition. San Francisco: Jossey-Bass
- Leadership for Change (2018). *Leadership for Change Programme: Cohort 4: Systems Leadership for STPs. Flyer*. Nottingham: Leadership for Change. Available from: <http://leadershipforchange.org.uk/wp-content/uploads/Leadership-for-Change-Flyer-v1.3.pdf>
- Leadership Foundation for Higher Education (2015). *Strategic Leadership Programme Flyer*. London: Leadership Foundation for Higher Education
- Leadership Foundation for Higher Education (2016). *Onwards and Upwards? Tracking Women's Work Experiences in Higher Education. Year 1 Report*. London: Leadership Foundation for Higher Education
- Leadership Insights (2017). *What Works: The Concept. Exploring the Possibilities of a Platform for Higher Education Leadership, Governance and Management*. London: Leadership Foundation for Higher Education
- League of European Research Universities (2018). *Implicit Bias in Academia: A Challenge to the Meritocratic Principle and to Women's Careers – and What to Do About It*. Leuven, Belgium: League of European Research Universities. Available from: <https://www.leru.org/files/implicit-bias-in-academia-full-paper.pdf>
- Leathwood, C., Maylor, U. and Moreau, M.P. (2009). *Experiences of Black and Minority Ethnic Staff Working in Higher Education: Literature Review*. London: Equality Challenge Unit
- Lechler, R. (2018). *Why the Future Needs a New Kind of Leader* [online]. *Academy of Medical Sciences Blog*, 18 May 2018. Available from: <https://acmedsci.ac.uk/more/news/why-the-future-needs-a-new-kind-of-leader>
- Lechler, T. and Thomas, J. (2007). *Conceptual and Empirical Implications of the Role of Senior Management Support in Project Success*. Proceedings of IRNOP VIII. Conference, University of Sussex
- Lefoe, G. (2010). *Creating the Future: Changing Culture through Leadership Capacity Development*, in Ehlers, U.D. and Schneckenberg, D. (eds). *Changing Cultures in Higher Education*. Berlin: Springer-Verl, pp. 189-204

- Lega, F., Prenestini, A. and Rosso, M. (2017). Leadership Research in Healthcare: A Realist Review. *Health Services Management Research*, 30(2), pp. 94-104
- Leiserson C.E. and McVinney C. (2015). Lifelong Learning: Science Professors Need Leadership Training. *Nature*, 523(7560), pp. 279-281
- Leithwood, K. et al. (2004). Review of Research: How Leadership Influences Student Learning. New York: The Wallace Foundation.
- Levecque, K. et al. (2017). Work Organization and Mental Health Problems in PhD Students. *Research Policy*, 46(4), pp. 868-879
- Lewis, J. (2003). Project Leadership. New York: McGraw-Hill Books
- Light, G. and Cox, R. (2009). Learning and Teaching in Higher Education: The Reflective Professional. London: SAGE Publications
- Lipsett, A. (2018). Interview Margaret Heffernan: 'The More Academics Compete, the Fewer Ideas they Share' [online]. *The Guardian*, 29 November 2018. Available from: <https://www.theguardian.com/education/2018/nov/29/margaret-heffernan-the-more-academics-compete-the-fewer-ideas-they-share>
- Locke, W. (2016). Shifting Landscapes: Meeting the Staff Development Needs of the Changing Academic Workforce. York: The Higher Education Academy
- Lomazzi, M., Jenkins, C. and Borisch, B. (2016). Global Public Health Today: Connecting the Dots. *Global Health Action*, 9(1), pp. 1-11
- Lovasz, K., Dolnicar, S. and Vialle, W. (2014). Succession Planning at Universities: Program for Preparing Early Leaders. *Research Journal of Educational Studies and Review*, 1(1), pp. 1-10. Available from: <http://research.uow.edu.au/propel>
- Lowe, T. and Plimmer, D. (2019). Exploring the New World: Practical Insights for Funding, Commissioning and Managing in Complexity. London: Collaborate CIC
- Lumby, J. (2012). What Do We Know About Leadership in Higher Education? The Leadership Foundation for Higher Education's Research: Review Paper. London: Leadership Foundation for Higher Education
- Lupson, J. (2007). A Phenomenographic Study of British Civil Servants' Conceptions of Accountability. PhD Thesis, Cranfield University
- Maccoby, M. (2004). Narcissistic Leaders: The Incredible Pros, the Inevitable Cons [online]. *Harvard Business Review*, January 2004. Available from: <https://hbr.org/2004/01/narcissistic-leaders-the-incredible-pros-the-inevitable-cons>
- Macfarlane, B. (2011). The Morphing of Academic Practice: Unbundling and the Rise of the Para-Academic. *Higher Education Quarterly*, 65, pp. 59-73
- Macfarlane, B. (2011). Professors as Intellectual Leaders: Formation, Identity and Role. *Studies in Higher Education*, 36(1), pp. 57-73
- Macfarlane, B. (2012). Intellectual Leadership in Higher Education: Reviewing the Role of the University Professor. Abingdon: Routledge

- Macfarlane, B. (2014). Challenging Leaderism. *Higher Education Research and Development*, 33(1), pp. 1-4
- Madsen, S. (2015). *The Power of Project Leadership: 7 Keys to Help You Transform from Project Manager to Project Leader*. London: Kogan Page
- Marjanovic, S. et al (2015). Leadership as a Health Research Policy Intervention: An Evaluation of the NIHR Leadership Programme (Phase 2). Santa Monica, CA: RAND Corporation. Available from: https://www.rand.org/pubs/research_reports/RR934.html
- Marton, F. (1981). Phenomenography: Describing Conceptions of the World Around Us. *Instructional Science*, 10, pp. 177-200
- Maylor, H.R., Turner, N.W. and Murray-Webster, R. (2013). How Hard Can It Be? Actively Managing Complexity in Technology Projects. *Research-Technology Management*, 56(4), pp. 45-51
- McAlpine, L., Horn, J. and Rath, J. (2011). Beyond Teaching and Research: Inclusive Understanding of Academic Practice. *Studies in Continuing Education*, 33(1), pp. 1-4
- McKinsey and Company (2017). *The Art of Project Leadership: Delivering the World's Largest Projects*. New York: McKinsey and Company. Available from: www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/the-art-of-project-leadership-delivering-the-worlds-largest-projects
- McLeish, T. and Strang, V. (2014). *Leading Interdisciplinary Research: Transforming the Academic Landscape*. Stimulus paper. London: Leadership Foundation for Higher Education
- Menges, R.J. and Exum, W.H. (1983). Barriers to the Progress of Women and Minority Faculty. *J High Edu*, 54, pp. 123-44
- Menzel, M. (2015). *Transformational and Shared Leadership in Self-Organising Teams: An Action Research Study*. PhD Thesis, University of Liverpool. Available from: <http://repository.liv.ac.uk/2023679/>
- Metier (2000). *The Leadership Challenge: A Review Management and Leadership in Subsidised Arts Organisations in England*. Liverpool: Metier
- Middlehurst, R. (1993). *Leading Academics*. Buckingham: SRHE and Open University Press
- Middlehurst, R. (2012). *Leadership and Management in Higher Education: A Research Perspective*. Working Papers 2012/47. Maastricht: Maastricht School of Management
- Middlehurst, R. (2013). Changing Internal Governance: Are Leadership Roles and Management Structures in United Kingdom Universities Fit for the Future? *Higher Education Quarterly*, 67(3), pp. 275-294
- Middlehurst, R., Goreham, H. and Woodfield, S. (2009). Why Research Leadership in Higher Education? Exploring Contributions from the UK's Leadership Foundation for Higher Education. *Leadership*, 5(3), pp. 311-329
- Monroe, K. et al. (2008). Gender Equality in Academia: Bad News from the Trenches, and Some Possible Solutions. *Perspect Polit*, 6(2), pp. 215-33
- Monroe, K. et al. (2015). Through a Gender Lens: A View of Gender and Leadership Positions in a Department of Medicine. *Womens Health*, 24, pp. 837-842
- Moore, B. (1927). The May Conference on Leadership. *Personnel*, 6, pp. 50-74

- Morley, L. (2013). The Rules of the Game: Women and the Leaderist Turn in Higher Education. *Gender and Education*, 25(1), pp. 116-131
- Moss-Racusin, C.A. et al. (2012). Science Faculty's Subtle Gender Biases Favor Male Students. *PNAS*, 109, pp. 16474-16479
- Mumford, M.D. et al. (2002). Leading Creative People: Orchestrating Expertise and Relationships. *Leadership Quarterly*, 13(6), pp. 705-750
- Nature (2015). Interdisciplinarity: A Special Report [online]. *Nature*, 17 Sept. 2015. Available from: <https://www.nature.com/news/1.18295>
- NESTA (2006). Annual Report and Accounts 2005/2006. London: NESTA. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/231547/1584.pdf
- NHS Leadership Academy (2013). Healthcare Leadership Model: The Nine Dimensions of Leadership Behaviour. Leeds: NHS Leadership Academy
- Northouse, P.G. (2012). Leadership: Theory and Practice. London: SAGE Publications
- Nurse, P. (2015). Ensuring A Successful UK Research Endeavor. A Review of the UK Research Councils. London: Department for Business, Energy and Industrial Strategy. Available from: <https://www.gov.uk/government/publications/nurse-review-of-research-councils-recommendations>
- Nye, J. (2010). The Powers to Lead. Oxford: Oxford University Press
- O'Donnell, J.M. et al (2019). Report of the 2018-2019 Research and Graduate Affairs Committee. Arlington, VA: AACP Reports
- Oleksiyenko, A. and Ruan, N. (2019). Intellectual Leadership and Academic Communities: Issues for Discussion and Research. *Higher Educ Q*, pp. 1-13
- Ong, V. (2014). Complexities of Multiple Paradigms in Higher Education Leadership Today. *Journal of Global Management*, 4(1), pp. 91-102
- O'Reilly, D. and Reed, M. (2010). 'Leaderism': An Evolution of Managerialism in UK Public Service Reform. *Public Administration*, 88(4), pp. 960-978
- Ostrom, E. (2000). The Danger of Self-Evident Truths. *PS: Political Science and Politics*, 33(1), pp. 33-44
- Parker, J. (2008). University Rewards for Teaching: Comparing Research and Teaching in University Promotion Criteria. York: Higher Education Academy. Available from: https://www.heacademy.ac.uk/sites/default/files/jonathan_parker.pdf.
- Parker, P. et al. (2018). Frank and Fearless: Supporting Academic Career Progression for Women in an Australian Program. *Administrative Sciences*, 8(1), 5
- Pearce, C.L. (2004). The Future of Leadership: Combining Vertical and Shared Leadership to Transform Knowledge Work. *Acad. Manag. Exec*, 18(1), pp. 47-57
- Petersen, E.B. (2011). Staying or Going? Australian Early Career Researchers' Narratives of Academic Work, Exit Options and Coping Strategies. *Australian Universities' Review*, 53(2), pp. 34-42

- Pettigrew, A.M., Woodman, R.W., and Cameron, K.S. (2001). Studying Organizational Change and Development: Challenges for Future Research. *Academy of Management Journal*, 44, pp. 697-713
- Pingleton, S.K. et al. (2016). Silent Bias: Challenges, Obstacles, and Strategies for Leadership Development in Academic Medicine-Lessons from Oral Histories of Women Professors at the University of Kansas. *Academic Medicine*, 91(8), pp. 1151-1157
- Project Management Institute (2017). Project Management Job Growth and Talent Gap 2017-2027. Newtown Square, Pennsylvania: Project Management Institute. Available from: www.pmi.org/-/media/pmi/documents/public/pdf/learning/job-growth-report.pdf
- Porstmouth, B. (2017). Think Ahead: Thinking Back and Looking Forward [online]. *Think Ahead Blog*, 5 June 2017. Available from: <https://thinkaheadsheffield.wordpress.com/2017/06/05/think-ahead-thinking-back-looking-forward/>
- Pradarelli, J.C. et al. (2016). A Leadership Development Program for Surgeons: First-Year Participant Evaluation. *Surgery*, 160, pp. 255-263
- National Audit Office (2016). Delivering Major Projects in Government: A Briefing for the Public Accounts Committee. London: The National Audit Office. Available from: www.nao.org.uk/wp-content/uploads/2016/01/Delivering-major-projects-in-government-a-briefing-for-the-Committee-of-Public-Accounts.pdf
- PwC (2017). Workforce of the Future: The Competing Forces Shaping 2030. London: PwC. Available from: <https://www.pwc.com/gx/en/services/people-organisation/workforce-of-the-future/workforce-of-the-future-the-competing-forces-shaping-2030-pwc.pdf>
- Raddon, A.E. (2011). A Changing Environment: Narratives of Learning About Research. *International Journal for Researcher Development*, 2(1), pp. 26-45
- Ramsden, P. (1998). Learning to Lead in Higher Education. Abingdon: Routledge
- Reddy, C.M. and Srinivasan, V. (2015). Dialogue on Leadership Development. *Management Review*, 27(1), pp. 44-55
- Reilly, P., Miller, L. and Hirsh, W. (2014). Workforce Planning in Academic Institutions. Brighton: Institute for Employment Studies
- Remington, K. (2011). Leading Complex Projects. Abingdon: Taylor and Francis
- Research Councils UK (2013). RCUK Policy and Guidelines on Governance of Good Research Conduct. Swindon: Research Councils UK. Available from: <https://www.ed.ac.uk/files/imports/fileManager/RCUKPolicyandGuidelinesonGovernanceofGoodResearchPracticeFebruary2013.pdf>
- Resource (2001). Renaissance in the Regions: A New Vision for England's Museums. London: Resource; The Council for Museums, Archives and Libraries. Available from: <https://www.museumsassociation.org/download?id=12190>
- Rock, D. and Ringleb, A.H. (2013). Handbook of Neuro Leadership. Scotts Valley, California: CreateSpace Independent Publishing
- Rogers, J. and Schofield, E. (2013). Cooperation and Leadership in Academia: The Roles of Non-Academics, in Sugden, R., Valania, M. and Wilson, J.R. (eds). *Leadership and Cooperation in Academia: Reflecting on the Roles and Responsibilities of University Faculty and Management*. Cheltenham, UK: Edward Elgar Publishing

- Rollock, N. (2019). *Staying Power: The Career Experiences and Strategies of UK Black Female Professors*. London: Universities & College Union. Available from: https://www.ucu.org.uk/media/10075/Staying-Power/pdf/UCU_Rollock_February_2019.pdf
- Royal Society [The] (2010). *The Scientific Century: Securing our Future Prosperity*. RS policy document 02/10. London: The Royal Society. Available from: https://royalsociety.org/~media/royal_society_content/policy/publications/2010/4294970126.pdf
- Royal Society [The] (2017). *Research Culture Embedding Inclusive Excellence Insights on the Future Culture of Research*. London: The Royal Society
- Rowley, D.J. and Sherman, H. (2003). The Special Challenges of Academic Leadership. *Management Decision*, 41(10), pp. 1058-1063.
- Saltmarsh, S., Sutherland-Smith, W. and Randell-Moon, H. (2011). 'Inspired and Assisted', or 'Berated and Destroyed'? Research Leadership, Management and Performativity in Troubled Times. *Ethics and Education*, 6(3), pp. 293-306
- Sandberg, J. (2000). Understanding Human Competence at Work: An Interpretative Approach. *Academy of Management Journal*, 43(1), pp. 9-25
- Sasse, T. and Haddon, C. (2018). *How Government Can Work with Academia*. London: Institute for Government. Available from: https://www.instituteforgovernment.org.uk/sites/default/files/publications/IfG_government_academia_June_2018.pdf
- Sasse, T. and Haddon, C. (2019). *How Government Can Work with Academia*. London: Institute for Government. Available from: https://www.instituteforgovernment.org.uk/sites/default/files/publications/IfG_Academic_and_gov_2019_WEB_FINAL.pdf
- Savigny, H. (2014). Women, Know Your Limits: Cultural Sexism in Academia. *Gen Edu*, 26, pp. 794-809. Available from: <https://www.ukri.org/about-us/equality-diversity-and-inclusion/>
- Schmitz, P. (2011). *Everyone Leads: Building Leadership from the Community Up*. San Francisco: Jossey-Bass
- Scottish Crucible [the] (2018). 'About' [online]. Edinburgh: The Scottish Crucible. Available from: <https://scottishcrucible.org.uk/about/>
- Seemann, N.M. et al. (2016). Women in Academic Surgery: Why is the Playing Field Still Not Level? *The American Journal of Surgery*, 211(2), pp. 343-349
- Serow, R.C. (2000). Research and Teaching at a Research University. *Higher Education*, 40(4), pp. 449-463.
- Sharp, C. (2018). *Collective Leadership: Where Nothing is Clear and Everything Keeps Changing. Exploring New Territories for Evaluation*. Edinburgh: Workforce Scotland. Available from: <https://workforcotland.files.wordpress.com/2018/11/collectiveleadershipreport1.pdf>
- Shattock, M. (2008). The Change from Private to Public Governance of British Higher Education: Its Consequences for Higher Education Policy Making 1980-2006. *Higher Education Quarterly*, 62(3), pp. 181-203
- Shepherd, S. (2017). Why Are There So Few Female Leaders in Higher Education: A Case of Structure or Agency? *Management in Education*, 31(2), pp. 82-87

Shillam, R. (2015). Black Academia: The Doors Have Been Opened but the Architecture Remains the Same, in Alexander C. and Arday, J. (eds). *Aiming Higher: Race, Inequality and Diversity in the Academy*. London: Runnymede Trust

Showunmi, V., Atewologun, D. and Bebbington, D. (2016). Ethnic, Gender and Class Intersections in British Women's Leadership Experiences. *Educational Management Administration and Leadership*, 44(6), 917-35

Sinar, E., Wellins, R. and Pacione, C. (2011). *Creating the Conditions for Sustainable Innovation: The Leadership Imperative*. London: Development Dimensions International

Smith, J. (2010). Forging Identities: The Experiences of Probationary Lecturers in the UK. *Studies in Higher Education*, 35(5), pp. 577-591

Solanke, I. (2017). *Black Female Professors in the UK*. London: Runnymede Trust. Available from: <https://www.runnymedetrust.org/uploads/BlackFemaleProfessorsMarch2017.pdf>

Souba, W.W. (2004). New Ways of Understanding and Accomplishing Leadership in Academic Medicine. *Journal of Surgical Research*, 117(2), pp. 177-186

Soubes, S. and Aspinall, S. (2014). *Cultivating Inter-disciplinary Researcher Communities - The Crucible Effect*. London: Vitae

Soubes, S. (2015). *Cultivating Interdisciplinary Researcher Communities: The Crucible Effect*, in Vitae Occasional Papers. Vitae Researcher Development International Conference, 08-09 Sep 2015. Manchester: Careers Research and Advisory Centre (CRAC) Limited, pp. 23-32

Soubes, S. and Meckin, R. [Forthcoming] (2018). *Experimenting with Interdisciplinarity: Researcher Development and the Production of Impact Potentials*. Sheffield: University of Sheffield

Soubes, S. [Forthcoming] (2018). *Crucible Evaluation Report*. Sheffield: University of Sheffield

Stern, N. (2016). *Building on Success and Learning from Experience: An Independent Review of the Research Excellence Framework*. London: Department for Business, Energy and Industrial Strategy. Available from:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/541338/ind-16-9-ref-stern-review.pdf

Stoll, L. et al. (2011). Leadership Development for Junior Doctors: What Can We Learn From 'Darzi' Fellowships in Clinical Leadership? *International Journal of Leadership in Public Services*, 7(4), pp. 273-286

Storey, J. and Holti, R. (2013). *Towards a New Model of Leadership for the NHS*. Leeds: NHS Leadership Academy. Available from: <http://www.leadershipacademy.nhs.uk/wp-content/uploads/2013/05/Towards-a-New-Model-of-Leadership-2013.pdf>

Stuart, R. (2015). *Developing the Next Generation*. Research report. London: Chartered Institute of Personnel and Development (CIPD). Available from: https://www.cipd.co.uk/Images/developing-next-generation_tcm18-10268.pdf

Sum, N. and Jessop, B. (2012). Competitiveness, the Knowledge-Based Economy and Higher Education. *Journal of the Knowledge Economy*, 4(1), pp. 24-44

Sydänmaanlakka, P. (2003). *Intelligent Leadership and Leadership Competencies: Developing a Leadership Framework for Intelligent Organizations*. PhD Thesis, Helsinki University of Technology. Available from: <http://lib.tkk.fi/Diss/2003/isbn9512263602/isbn9512263602.pdf>

- Tal, D. and Gordon, A. (2016). Leadership of the Present, Current Theories of Multiple Involvements: A Bibliometric Analysis. *Scientometrics*, 107, pp. 259-269
- Tamkin, P. et al. (2010). *Exceeding Expectation: The Principles of Outstanding Leadership*. London: The Work Foundation. Available from: http://www.theworkfoundation.com/downloadpublication/report/233_leadershipfinal_reduced.pdf
- Taylor, P.G. (1999). *Making Sense of Academic Life: Academics, Universities and Change*. Buckingham: SHRE and Open University Press
- Tight, M. (2002). What Does It Mean to be a Professor? *Higher Education Review*, 34(2), pp. 15-32
- Tight, M. (2019). The Neoliberal Turn in Higher Education. *Higher Educ Q*, pp. 1-12
- Tucker, R.B. (2017). Six Innovation Leadership Skills Everybody Needs to Master. *Forbes*, 9 February 2017. Available from: <https://www.forbes.com/sites/robertbtucker/2017/02/09/six-innovation-leadership-skills-everybody-needs-to-master/#2a3737de5d46>
- Turner, C.S.V. (2002). Women of Color in Academe: Living with Multiple Marginality. *Journal of Higher Education*, 73, pp. 74-93
- Turner, J.R. and Muller, R. (2003). On the Nature of the Project as a Temporary Organisation. *International Journal of Project Management*, 21(1), pp. 1-8
- Tysome, T. (2014). *Leading Academic Talent to a Successful Future: Interviews with Leaders, Managers and Academics*. Stimulus Paper. London: Leadership Foundation for Higher Education
- Tytherleigh, M.Y. et al. (2005). Occupational Stress in UK Higher Education Institutions: A Comparative Study of all Staff Categories. *Higher Education Research and Development*, 24 (2005), pp. 41-61
- Universities & College Union (2012). *The Position of Women and BME Staff in Professorial Roles in UK HEIs*. London: Universities & College Union. Available from: www.ucu.org.uk/media/5559/Report-The-position-of-women-and-BME-staff-in-professorial-roles-in-UK-HEIs/pdf/
- University and College Union (2017). *The Gender Pay Gap in Higher Education: 2015/16 Data Report*. London: University and College Union. Available from: https://www.ucu.org.uk/media/8620/The-gender-pay-gap-in-higher-education-201516---full-report-May-17/pdf/ucu_2015-16genderpaygapreort_full_may17.pdf
- UNESCO (2010). *World Social Science Report 2010: Knowledge Divides*. Paris: UNESCO
- UNESCO (2013). *World Social Science Report 2013: Changing Global Environments*. Paris: UNESCO
- UNESCO (2016). *World Social Science Report 2016: Challenging Inequalities: Pathways to a Just World*. Paris: UNESCO
- UK Research and Innovation (2018). *Strategic Prospectus: Building the UKRI Strategy*. Swindon: UK Research and Innovation. Available from: <https://www.ukri.org/files/about/ukri-strategy-document-pdf/?pdf=Strategic-Prospectus>
- UK Standing Committee for Quality Assessment (UKSCQA) and QAA (2018). *The UK Quality Code for Higher Education*. London: The UK Standing Committee for Quality Assessment (UKSCQA) and QAA

- van Ameijde, J. et al. (2009). Improving Leadership in Higher Education Institutions: A Distributed Perspective. *Higher Education*, 58(6), pp. 763-779
- van der Boon, J., Kahmen, S. and Maes, K. (2018). Delivering Talent: Careers of Researchers Inside and Outside Academia. Leuven, Belgium: The League of European Research Universities
- Van Wart, M. (2013). Lessons from Leadership Theory and the Contemporary Challenges of Leaders. *Public Administration Review*, 73(4), pp. 553-565
- Vinkenburg, C.J. et al. (2011). An Exploration of Stereotypical Beliefs About Leadership Styles: Is Transformational Leadership a Route to Women's Promotion? *Leadership Quarterly*, 22(1), pp. 10-21
- Vitae (2015). Developing the Next Generation: Guidance and Good Practice in the Leadership Development of Early Career Researchers and Academics. Cambridge: Vitae. Available from: <https://www.vitae.ac.uk/vitae-publications/guides-briefings-and-information/developing-the-next-generation-vitae-brunel-lfhe-2015.pdf/view>
- Vitae (2015). Vitae Occasional Papers Volume 2: Researcher Careers and Culture. Cambridge: Vitae
- Vitae (2017). Five Steps Forward: Progress in Implementing the Concordat to Support the Career development of Researchers 2008-2017. Cambridge: Vitae. Available from: <https://www.wlv.ac.uk/media/departments/research/documents/VITAE---5-steps-forward.pdf>
- Vongas, J.G. and Al Hajj, R. (2015). The Evolution of Empathy and Women's Precarious Leadership Appointments. *Frontiers in Psychology*, 6(1751)
- Waldman, D.A. et al. (2001). Does Leadership Matter? CEO Leadership Attributes and Profitability Under Conditions of Perceived Environmental Uncertainty. *Academy of Management Journal*, 44(1), pp. 134-143
- Watson, D. (2012). Misunderstanding Modern Higher Education: Eight 'Category Mistakes'. Oxford: Higher Education Policy Institute
- Weese, W.J. and Chelladurai, P. (2017). Leadership Skills in Sport. Oxford Research Encyclopedia of Psychology. Oxford: Oxford University Press
- Wehner, M.R. et al. (2015). Plenty of Moustaches but Not Enough Women: Cross Sectional Study of Medical Leaders. *BMJ*, 351
- Wellcome Trust (2014). Getting Back into Research After a Career Break. London: Wellcome Trust. Available from: <https://wellcome.ac.uk/sites/default/files/guidance-getting-back-into-research-after-career-break.pdf>
- Wellcome Trust (2018). A Career in Research: Tips for Running your own Research Group. London: Wellcome Trust. Available from: <https://wellcome.ac.uk/sites/default/files/research-careers-tips-running-research-group-2018-05-17.pdf>
- Wernli, D. and Darbellay, F. (2016). Inter-Disciplinarity and the 21st Century Research-Intensive University. Leuven: League of European Research Universities (LERU)
- West, M. et al. (2015). Leadership and Leadership Development in Healthcare: The Evidence Base. London: The Faculty of Medical Leadership and Management (FMLM), The King's Fund. Available from: http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/leadership-leadership-development-health-care-feb-2015.pdf

- West, S. (2013). Humanities Research Leadership in Europe. Stimulus Paper. London: Leadership Foundation for Higher Education
- Western, S. (2008). Leadership: A Critical Text. London: SAGE Publications
- Westring, A.F. et al. (2012). A Culture Conducive to Women's Academic Success: Development of a Measure. *Academic Medicine*, 87(11), pp. 1622-1631
- What Works Scotland (2017). Leadership, Collaboration and Public Service Reform – What Works? [online]. Glasgow; Edinburgh: What Works Scotland. Available from: <http://whatworksscotland.ac.uk/events/leadership-collaboration-and-public-service-reform-what-works/>
- Whelton, H. and Wardman, M.J. (2015). The Landscape for Women Leaders in Dental Education, Research, And Practice. *Dental Education*, 79, pp. S7-12
- Whitchurch, C. (2006). Who Do They Think They Are? The Changing Identities of Professional Administrators and Managers in UK Higher Education. *Journal of Higher Education Policy and Management*, 28(2), pp. 159-171
- Whitchurch, C. (2008). Shifting Identities and Blurring Boundaries: The Emergence of Third Space Professionals in UK Higher Education. *Higher Education Quarterly*, 62(4), pp. 377-396
- Whitchurch, C. (2012). Reconstructing Identities in Higher Education: The Rise of Third Space Professionals. Abingdon: Routledge
- Whitchurch, C. (2018). From a Diversifying Workforce to the Rise of the Itinerant Academic. *Higher Education*, pp. 1-11
- Whitchurch, C. and Law, P. (2010). Optimising the Potential of Third Space Professionals in UK Higher Education. London: Leadership Foundation for Higher Education
- Whittemore, S. (2018). Transversal Competencies Essential for Future Proofing the Workforce. White Paper. Macerata: Skilla
- Wilson, J. (2017). ESRC Research Network Plus Directors Final Report. Swindon: ESRC
- Wilson, L. and Blackwell, A.F. (2017). Interdisciplinarity and Innovation, in Carayannis E. (ed). *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship*. New York: Springer International Publishing
- Winn, J. and Hall, R. (2017). Mass Intellectuality and Democratic Leadership in Higher Education. London: Bloomsbury Academic
- Winn, J. and Hall, R. (2018). Time to Move Past the Obsession with Leadership [online]. *WONKHE*, 2 September 2018. Available from: <https://wonkhe.com/blogs/an-obsession-with-leadership/>
- Winter, R. (2009). Academic Manager or Managed Academic? Academic Identity Schisms in Higher Education. *Journal of Higher Education Policy and Management*, 31(2), pp. 121-131
- Wisker, G. (2011). Troublesome Encounters: Strategies for managing the wellbeing of Postgraduate Education students during their learning processes. Bristol: ESCalate
- Workforce Scotland (2018). How Can We Build Capacity for Collective Leadership for Scotland? Edinburgh: Workforce Scotland

Wright, A.L. et al. (2003). Gender Differences in Academic Advancement: Patterns, Causes, and Potential Solutions in one US College of Medicine. *Acad Med*, 78(5), pp. 500-08

Yielder, J. and Codling, A. (2004). Management and Leadership in the Contemporary University. *Journal of Higher Education Policy and Management*, 26(3), pp. 315-328

Yukl, G. (2013). *Leadership in Organizations Global Edition*. London: Pearson Higher Education

Zuber-Skerritt, O. and Louw, I. (2014). Academic Leadership Development Programs: A Model for Sustained Institutional Change. *Journal of Organizational Change Management*, 27(6), pp. 1008-1024