



Delivery Plan 2019



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# Foreword



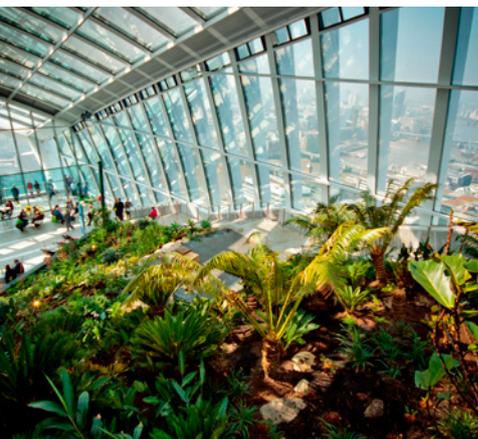
**Professor Jennifer Rubin,  
Executive Chair, ESRC**

The UK faces major opportunities and challenges, from climate change, low productivity and the increasing prevalence of obesity, to the need to unlock the potential and mitigate the risks of new technologies such as artificial intelligence (AI) and automation. These opportunities and challenges arise from people and behaviour, and how well we grasp and meet them depends on individuals, families, communities, firms and public institutions responding effectively. Social science is vital to understanding how we can equip people with the capabilities and resilience to adapt to the pace and frequency of change and manage new technologies, with all their potential benefits and harms.

ESRC will answer questions on how to support workplaces to deliver improvements in productivity and health, and will contribute to national and regional economic success and improved, more sustainable quality of life. As the frontiers of science and technology are extended ever further, social science can help inform these advances to enhance our economy, generate benefits that are shared widely and strengthen our communities.

These are questions to address now, but at the same time we must prepare to understand discoveries and developments that will have ramifications difficult for us to imagine today. These are fundamentally questions for social science – psychology, economics, anthropology, sociology, management, geography and more.

As a graduate student in the social sciences decades ago, I was surprised by the lack of systematic connection between the excellent research I found in my studies and the work done by policymakers, teachers, clinicians and others making decisions about the economy, health and education. Today I remain committed to the pursuit of discovery research that helps us better understand people, communities and the world around us. I am also committed to ensuring that, where possible, the deep knowledge we accumulate is harnessed to address the social and economic questions of our time, serving the wider public who stand to benefit from well-informed policies and decisions.

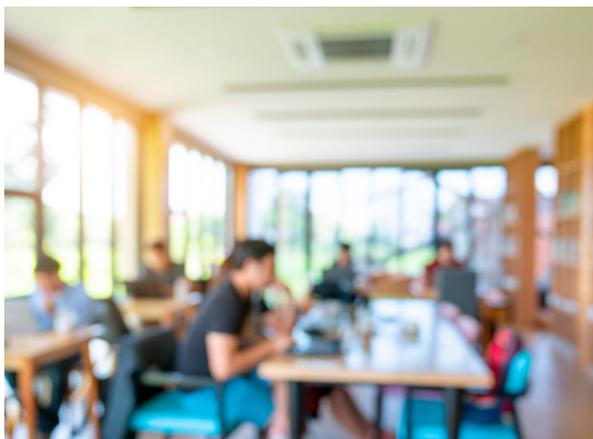


My vision as Executive Chair is to help world-leading social science make its contribution to improving outcomes. To do so, we need the training, methods and data and research infrastructure that ensure we have the people and tools needed to generate outstanding social science.

It is not possible to predict what we will need to know and when, and independent discovery and strong, well-supported disciplines remain the foundations of excellence. To bring deep knowledge to bear on the challenges and opportunities ahead, we will need a diverse research base in terms of people, institutions, disciplines and collaborators. This is because knowledge, like many of today's societal challenges, crosses borders. We will also need to balance discovery and delivery, building relationships, systems and processes that bring people with pressing questions closer together with research, informing both the questions and the research needed to answer them.

I am extremely grateful to be working with an excellent team to deliver on this vision: to our staff for working determinedly to join our sister councils as UK Research and Innovation (UKRI); to the research community navigating this time of growth and change in the research landscape and whose work continues to inspire; and to our Council that has taken up the reins with exceptional rigour and dedication. All our colleagues across UKRI and in the wider policy and practice communities will be pivotal to the collaborations we are building for the years to come.

The need for excellent social science, and for the resources to support it, is clear. We look forward to working with you all to bring brilliant minds together to address the challenges and opportunities that are so in need of attention.



## 2. Vision and objectives

All the key opportunities and challenges for the UK have people and behaviour at their core. Raising productivity, realising the full potential of medical and technological advances, coping with an ageing population, addressing climate change and improving public services will all require a rich understanding of how individuals, firms, markets, communities and governments behave and interact.

ESRC supports social science that generates this rich understanding. As prioritised in the Industrial Strategy we support world-class research designed to advance the frontiers of social science and contribute to a more prosperous economy, more effective public services and a more sustainable, healthy, secure society. The social science ESRC supports in the UK is internationally excellent and, according to the Organisation for Economic Co-operation and Development (OECD), second only to the US in international evaluations. Our vision is to build on this and significantly increase our ability to contribute to improved economic and social outcomes.

There is growing demand for social science that can help achieve such outcomes: over 60% of government departments' Areas of Research Interest questions are core social science issues; a further 20% require significant social science input. Demand from industry is also rising. The UK economy is now over 80% services and this requires understanding of people and behaviour just as much as of materials and processes. Calls for social science will also increase as newly linked data and innovative methods transform what can be known about the economy and society.

Over the longer term, we will play a leading role within UKRI by continuing to maintain the health of the 19 social science disciplines, supporting responsive-mode funding and interdisciplinary UKRI collaborations, working with government, industry and the third sector to support research addressing important societal opportunities and challenges, and investing to improve connections between world-leading discovery research, training, data and investments to improve outcomes. Our overall approach to achieving our goals is set out below:

ESRC: Delivering Economic, Social and Cultural Impact			
<b>Advancing the Frontiers of Social Science</b>			
Discovery research			
<b>Focused Research and Innovation Priority Areas</b>			
Productivity, prosperity and growth	Transforming productivity		
	Transforming working lives		
Next-generation public services	The future of public services		
	Education: improving outcomes		
	Innovation in health and social care		
Living with technology			
<b>Wider Research and Innovation Priority Areas (Opportunities and Challenges)</b>			
Changing populations	Connecting generations		
	Inclusive ageing		
The UK in a changing world	The UK in Europe		
	Changing politics		
Global development, environment and society	Raising learning outcomes		
	Responding to climate change		
<b>Foundational pillars</b>			
Talent, methods and leadership	Mobilising knowledge, impact and engagement	Data and infrastructure	Enabling international collaboration

Pushing the Frontiers of Human Knowledge and Understanding



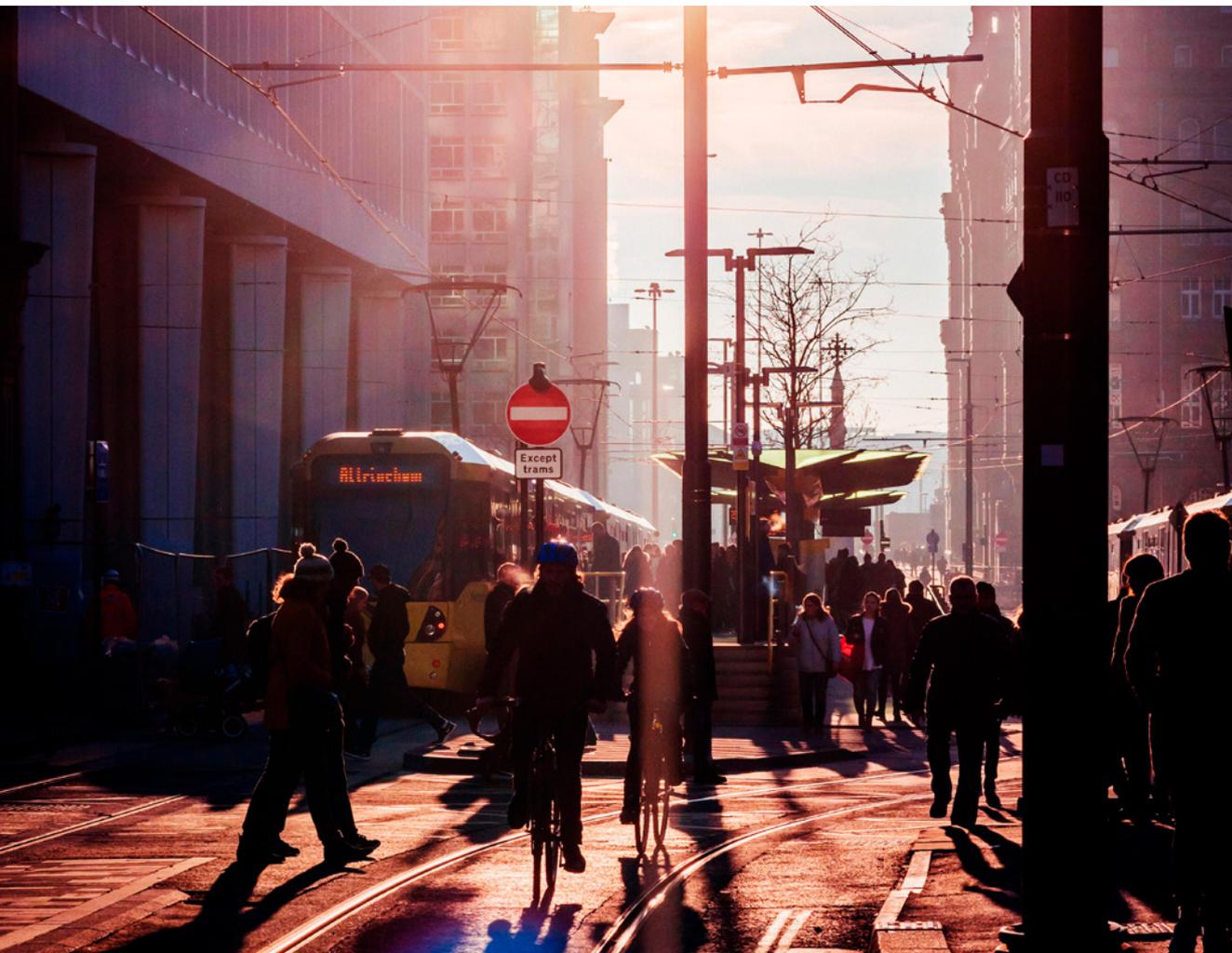
Our focus on these research and innovation priority areas will allow us to build new capacity and support them at greater scale. We will also work with government, business and the third sector to develop effective mechanisms for connecting the research we fund in these areas to their pressing questions and coordinate research to drive improved outcomes. Overall, our approach is designed to deliver the twin objectives which underpin our vision:

- **Create a world-leading portfolio of research, data and training that builds fundamental understanding of our social and economic world** and achieve this by:
  - advancing the UK's international position in social science research through investment in excellent fundamental and applied research and centres of excellence
  - equipping researchers to undertake world-leading research and lead major cross-sector, interdisciplinary collaborations, by extending skills development throughout their careers
  - developing, attracting and retaining global research talent by strengthening training and data infrastructure, expanding world-leading institutes and centres, improving career paths and creating a more inclusive, diverse, flexible research environment
  - strengthening development and use of our data infrastructure investments by upgrading skills and funding the development, testing and diffusion of innovative approaches
  - strengthening national standards for fair, safe, equitable data-sharing and robust use of new and existing data in partnership with other national and international data-infrastructure providers.
- **Improve how we align our research with pressing societal challenges so it delivers significant benefits to the economy and society** and achieve this by:
  - contributing to UKRI and the UK's Industrial Strategy by supporting cross-disciplinary behavioural, organisational, economic and social research on complex technological, scientific, medical and societal challenges
  - increasing the global influence of social science by supporting international collaborations
  - improving how research informs policy and practice by co-designing research with stakeholders, increasing safe access to data, building capacity to respond to pressing questions and supporting cross-sector career mobility
  - strengthening the use of cutting-edge research methods to address complex policy and practice challenges through the funding of cross-sector research and methods training
  - increasing public understanding of social science and its responsiveness to societal concerns by investing in effective public engagement and funding the highest-quality research so it is trusted, replicable and recognised for the contribution it makes.

### **ESRC and the UK's R&D investment target**

Social science research has demonstrated the public and private benefits of increased investment in R&D. This understanding has driven the commitment, set out in the Industrial Strategy, to grow UK R&D spending to 2.4% of GDP by 2027 and 3% in the longer term. We will continue to fund research on how to increase R&D's effectiveness. For example, research in economics and geography can support regional growth, while education research helps enhance skills in the economy. Research on public policy can improve the regulatory and institutional environment in which firms operate. Social and behavioural research can increase the effectiveness of public and private services and improve innovation and diffusion. Overall, social science helps to better understand and improve the education, skills, health, productivity and innovation of people, organisations and regions.

We will prioritise the expansion of research capacity in areas of social science that can help achieve the 2.4% commitment. For instance, we will fund research on managerial and workforce skills within firms, effective regulation, funding/finance, market structure and industry dynamics. We will work with partners in industry and government to address bottlenecks in commercialisation and improve the UK's innovation environment. By doing so, we will help ensure the UK has a more competitive, better regulated, better financed, higher-skills economy. This will increase demand for R&D and help make the UK the best place in the world to undertake research.





## 3. Research and innovation priorities

### 3.1 ADVANCING THE FRONTIERS OF SOCIAL SCIENCE

We will support fundamental discovery research, advances in methods and new interdisciplinary skills for world-leading research that extends the frontiers of social science.

#### Context

In many areas of social science, new data and improved statistical methods are enabling much richer understanding of social and economic phenomena. For example, researchers can now better identify the effectiveness of interventions to improve education, international development, welfare and economic performance. Alongside rigorous qualitative research, they make possible a deeper understanding of the ‘what’, ‘why’ and ‘how’ of people’s behaviour and their social, economic and environmental outcomes. Given the importance of groundbreaking social science research, we plan to spend approximately £39m (17% of our total budget) on responsive research (2018-2019).

#### Long-term ambitions

- Enhance the excellence of UK social science by championing fundamental, curiosity-driven and applied research, building on and driving a significant increase in the quantity and quality of social science capability in this country. Our vision of improving the economic and societal impact of social science research requires a deep, diverse and extensive portfolio of world-leading fundamental social science.
- Enhance the UK’s position in core social science areas, create and exploit new opportunities to improve economic and social outcomes, and ensure our investments in talent, world-class data, impact and international collaborations are effectively integrated with our research portfolio to drive superior performance.

#### Near-term actions

- Support research excellence, innovation and methodological development outside our priority areas by:
  - running open calls for proposals from any area of social science
  - investing in and consolidating centres of excellence in areas of significant research strength that emerge through open competition
  - investing in fundamental research that pushes the boundaries of understanding irrespective of its immediate application.
- Build the rigour, robustness and replicability of research by:
  - investing in new methods and techniques and ensure they are widely diffused and can be applied to important research topics
  - supporting research at the scale needed to ensure findings are robust and replicable
  - funding new kinds of data, training and collaboration and working with the public sector to build robust evaluation methods and high-quality data collection into policy experiments.



### **Boosting economic growth by 0.2% year on year**

ESRC-funded research has been fundamental in developing a new approach to macroeconomic policy, called 'inflation targeting', that has reduced the UK's inflation rate from 5% (1991-1997) to around 2.5% since its introduction in 2000. The National Institute for Economic and Social Research has estimated that this new approach has added around 0.2% to GDP per year. The economic benefits of this research are unusually high because the 0.2% additional output has continued to accumulate year on year ever since. Moreover, the benefits now extend beyond the UK, New Zealand and Canada, where inflation targeting was pioneered in the 1990s, generating significant economic benefits for many developing, industrialising and developed nations.

### **Doubling lifetime incomes by intervening in early childhood**

Some of the most robust and socially significant findings in social science relate to research on early childhood development and particularly to interventions to improve lifetime outcomes. Economists such as Professor Jim Heckman (University of Chicago) and Professor Orazio Attanasio (University College London) have shown that even very cheap, small-scale interventions to support childhood development can have very significant positive impacts. Past studies show a benefit-to-cost ratio of between 2.7 and 7.1, while a recent survey of all such interventions revealed that the discounted and fully costed net benefits per person taking part in the experiments is 0.92 times per capita GDP (equivalent to approximately doubling lifetime income).



### **Boosting public safety through crowd psychology**

Research on crowd psychology has enhanced the crowd management practices used by over 700 local emergency specialists, improved safety for 125,000 festival-goers and changed stadium safety procedures in the UK and other countries. Work by Dr John Drury of the University of Sussex has shown that, rather than being chaotic, emergency behaviour is often ordered and cooperative and does not necessarily require top-down management and control. Public Health England, the Civil Contingencies Secretariat, the Department of Health and Social Care (DHSC), NATO and the United Nations Office for Disaster Risk Reduction have all taken up this research. Over 2,000 safety stewards employed at events such as the 2018 Commonwealth Games and the Glastonbury Festival have received training based on Dr Drury's work.

## 3.2 PRIORITY AREAS

### 3.2.1 Productivity, prosperity and growth

To address one of the major economic and social challenges and opportunities of our time, we will focus a proportion of our investment on productivity, prosperity and growth.

#### Context

Productivity growth drives overall economic performance, wage growth and living standards. Before 2007 productivity growth in the UK was comparatively strong but it has since stagnated, leaving GDP per hour around 20% lower than if pre-financial crisis trends had continued. Understanding and addressing the causes of this slowdown and its geographic variations is arguably the UK's biggest economic challenge. The UK's Industrial Strategy recognises that productivity has lagged behind competitors, and sets out the Government's commitment and a wide range of actions to improve the UK's overall productivity and earning power.

In the past, the UK economy was more heavily manufacturing-based with growth largely driven by improvements in materials and production processes. Today, the UK has a modern service-based and knowledge-based economy in which people and their interactions are much more important to growth.

To improve productivity, we need to better understand how the development of new products and processes, management practices, industrial organisation and regulations influence company-level, local and national economic performance. To comprehend how people innovate and how innovations are taken up, meanwhile, we need to understand psychology and motivation, physical and mental health, skills and education, the wider macroeconomic and financial context, policy and regulatory environments, labour markets and international trading relationships and obligations such as the UN Sustainable Development Goals. Research across the social sciences, from geography and economics to sociology and psychology, can contribute to this research agenda.

We already have a number of significant investments to build on. The world-leading research of the Centre for the Microeconomic Analysis of Public Policy at the Institute for Fiscal Studies (IFS) and the Centre for Economic Performance (CEP) at the London School of Economics and Political Studies (LSE) have recently been recognised through the awarding of ESRC Institute status. We also fund translational activities, for example through the What Works Centre for Local Economic Growth, which will be recommissioned in 2019-20.

#### Long-term ambitions

- Create an impartial, integrated evidence base and a growing cohort of researchers able to support the private and public sectors as they address their productivity and growth challenges. This research will cover both immediate concerns about what drives productivity growth and how it can be enhanced, as well as more fundamental questions about the nature of productivity and its measurement. Interdisciplinary research will help understand productivity and the distribution of its benefits across regions, communities and groups.
- Facilitate stronger links with business and policymakers by supporting research in which government, businesses and workplaces are research sites.
- Use research and knowledge exchange (KE) fellowships to support co-delivery of research with other national and international funders, stakeholders in government, the third sector, business, chartered professionals, trade organisations and regional policy bodies.

## Near-term actions

- **Transforming productivity:** The significant national investment and other measures, set out in the Industrial Strategy, to tackle poor productivity requires research support so that interventions are well-designed, effective and scalable. Our work in this area aims to significantly extend understanding of productivity, inform interventions to improve it and ensure the benefits are widely realised. This will include:
  - major investments in productivity research, including a new Research Centre on Digital Futures at Work
  - catalysing productivity research: interdisciplinary projects to improve productivity
  - management practices and employee engagement: researching the connections between productivity, management practices, employee engagement, health and wellbeing, where we have committed £2m to support research (2019-2020)
  - improving the measurement of productivity: researching new ways of measuring productivity that better reflect the sectoral composition and needs of the UK economy and the increasingly digital nature of economic activity, where we are planning to spend £3m (2019-2020)
  - transitions towards a more productive society: researching new skills, the diffusion of innovations and the capabilities needed to increase the productivity of organisations and economic systems, including research on low-pay, high-employment sectors and potentially randomised control trials of policy and management interventions
  - understanding and addressing environmental and social transitions: researching sustainable and inclusive productivity transformations and links to health, wellbeing and environmental quality.
- **Transforming working lives:** How, where and how long we work is changing, with wide-reaching social, economic, political and legislative implications. In the UK, recent reviews<sup>1</sup> have revealed important links between job quality, productivity and societal wellbeing. But much remains poorly understood, such as the impact of new technology on working lives and of changing occupational tasks, skills and labour markets, and what is required at national, regional and individual levels to generate secure livelihoods. Working with UKRI partners, we will fund innovative life-course research on how working lives are being transformed that utilises existing and new sources of data to generate richer, more robust evidence. In 2019-20, we will focus on:
  - the future of the workplace: researching the changing nature and location of employment
  - business and employee decision-making: exploring how decisions are made, adopted and absorbed, alongside changing attitudes and motivations
  - understanding the dynamics of work relations: researching changes in labour rights and employee voice, inequalities and inclusion, and value and identity in work
  - working transitions: exploring how demographic groups transition into and out of work
  - job quality and healthy work: researching the quality of work and linking to Transforming Productivity (see above).

<sup>1</sup> <https://www.gov.uk/government/publications/good-work-the-taylor-review-of-modern-working-practices>, <https://www.gov.uk/government/publications/thriving-at-work-a-review-of-mental-health-and-employers>

### **‘Biggest auction ever’ raises £22.5 billion**

Professors Paul Klemperer and Kenneth Binmore from the ESRC-funded Centre for Economic Learning and Social Evolution (ELSE) proposed an innovative auction process for 3G licences in the year 2000 drawing on fundamental social science research on game theory and risk evaluation. The estimated value of the licences had been £5 billion, but as a result of following their suggestions to use multiple rounds of simultaneous bids the auction ended up raising £22.5 billion.



### **Pinpointing what works to deliver economic growth**

Since 2013 we have funded the What Works Centre for Local Economic Growth based at the LSE. The centre informs UK industrial policy by synthesising evidence on ‘what works better’ in policy and programme design in areas such as local industrial strategy, including employment training and business support, and local procurement policy. It has developed resources, training and collaborative demonstrator projects evaluating programmes on, for instance, employment training and the effectiveness of incubators and accelerators.

### 3.2.2 Next-generation public services

We will extend our longstanding mission of providing research and data to the UK government and devolved administrations to contribute towards the design and implementation of the next generation of public services.

#### Context

How can public services be delivered in an increasingly challenging environment? An ageing population, budgetary pressures, new technologies, rationalisation of service provision and changing responsibilities between Whitehall, devolved governments and regional/local authorities: all have created new demands on those services. As a result, their development, delivery, funding and evaluation are undergoing significant changes, with private, public and voluntary sectors now delivering many services and users having an increasing say in delivery. Meanwhile, new linked datasets and innovative research methods are allowing researchers to improve policy design/targeting, enhance benefits and reduce costs.

#### Long-term ambitions

- Develop a portfolio of research, talent and data on public services that is closely integrated with government departments and supported by knowledge mobilisation activities which help drive major improvements in outcomes. Historically, we have been a major supplier of research and data for the government but we need to rebuild this part of our portfolio in view of the significant new demand for research.
- In close collaboration with our new investments in data infrastructure, build a portfolio of world-class datasets that facilitate methodologically robust, highly innovative research on public services. A key part of this involves greater use of co-designed, co-produced research in collaboration with civil servants and the voluntary sector, including more collaborative work on data and evaluations and more secondments and transfers of personnel between institutions.

#### Near-term actions

**The future of public services:** Use core funds to invest in a major programme of high-impact interdisciplinary research around the design, delivery and performance of public services:

- enhance the deployment of new innovations that deliver more affordable, easier-to-access and more user-centred services by investing in a significant body of research on public services that incorporates a wide range of academic and stakeholder expertise
- support research and experimentation by commissioning demonstrator projects to design, test and scale-up state-of-the-art solutions to public services challenges
- maximise the value of research by basing it on engagement with government, the voluntary sector and other stakeholders to co-design demonstrator projects and studies, and by facilitating access to the vast amounts of data held by service providers
- support a new £1m programme of comparative research working with Nordic research funder Nordforsk, on the digitisation of the public sector. This will deliver a strategic, systematic, consistent body of world-leading comparative research on how to achieve sustained improvements in public sector productivity and effectiveness.

**Education: improving outcomes:** Invest core funding in a programme of research to build new, interdisciplinary research capacity around two interrelated strands:

- teaching and learning, focusing on teacher training, supply and retention; what constitutes effective training in the science of learning, for who and in what contexts; initial teacher education and ongoing professional education; the impact of different routes into teaching; and how to build research literacy and engagement with teachers
- technology for teaching and learning, focusing on how students, teachers and carers can improve learning with technology and how teachers' professional development can support it.

Initially, activity will develop new capacity, such as in early-years research, building networks across disciplines to ensure practitioners can co-design and implement research. These networks would then develop to support larger collaborative research grants.

- ESRC-led investment will create cross-UKRI opportunities to engage with AHRC, BBSRC, MRC, EPSRC and the Education Endowment Foundation. These interdisciplinary collaborations are needed to improve performance because early-years outcomes are influenced by health, nutrition, skill development, parenting and home-learning as well as formal education.

**Innovation in health and social care:** Enhance social care's (cost) effectiveness, and support the Industrial Strategy's Ageing Society Grand Challenge, by accelerating the adoption and diffusion of evidence-based innovations, achieving this by:

- scope and prepare a significant investment in adult social care, to provide research support for policy makers. Such an investment

is timely because the social care delivery landscape and the public's needs are changing, with more emphasis on place-based approaches, integrated health and care, sustainability and transformation. Extensive stakeholder engagement will ensure the investment works across sectors, disciplines and regions and its activities are sensitive to social, political and economic contexts and regional variations, financial pressures and diverse care needs.

- improving 'front line' commissioning and practice and developing capacity in the care sector to access evidence, undertake evaluations and generate excellent social science, by investing core funding in embedding knowledge mobilisation expertise in the social care sector.

### The benefits of understanding populations

The 2017 Longitudinal Studies Strategic Review highlighted a wide range of significant economic and societal impacts that have emerged from our investments in data. The Millennium Cohort Study showed that exclusively breastfed babies were 14 times less likely to die in their early months, leading to changes in the advice given by the WHO and UNICEF which has been implemented in 134 countries. Understanding Society and the Millennium Cohort Study revealed the multiple disadvantages that workless families often face, leading the Department for Work and Pensions (DWP) to launch a major policy initiative. Research based on Understanding Society informed DWP's Automatic Enrolment in Workplace Pensions, leading to a total increase in annual savings of £7.1bn since 2012. Longitudinal data has also led to changes in welfare-to-work policy supporting mothers who return to work. Research based on



the National Child Development Study influenced the establishment of the world's first universal children's savings scheme, leading to £4.8 billion in new savings. ESRC data also informs bio-medical research – the 1958 Birth Cohort, for example, is in the top four of all datasets used in Genome-Wide Association Studies discoveries.

### 3.2.3 Living with technology

We will invest in social science to understand the implications of advances in science, technology and medicine for the way people live and work together. This will shape and inform innovation, mitigate risks, and help new innovations deliver their full economic and social potential. By conducting research on the shaping of technology and its social, psychological and cultural impact we will be better placed to detect potentially negative effects early on and develop effective tools and interventions to mitigate harms and maximise positive outcomes.

#### Context

Advances in science, technology and medicine are set to transform the world in the 21st century. New technologies, such as Artificial Intelligence, can generate significant benefits but also have the potential to produce damage and divisions. Online bullying, the proliferation of fake news and increased surveillance can co-exist with improved access to information and services, closer international connections and the development of new social relationships. Greater access to global markets can occur alongside growing threats to democratic mechanisms. For advances in technology to contribute to positive societal outcomes, social scientists need to work with scientists and engineers to identify and mitigate risks, maximise benefits and build new capabilities to understand and inform the direction of change.

This interdisciplinary research is needed because innovation is an inherently uncertain process that cuts across research areas. It extends from initial inventions through processes of commercialisation, application and diffusion, as new products and services are developed that the public takes up. These processes need to be well managed, funded, regulated and governed, so that people understand and can assess innovations, and firms can capture some of the value that innovation can create.

Social science research that informs understanding of how technology influences working and non-working lives and how it shapes the society in which we live, will play an important role in delivering UKRI's aims and improving the effective development and use of new scientific, technical and medical innovations.

#### Long-term ambition

- Build the skills and capacity to undertake excellent social science so we can understand and inform advances in science, technology and medicine.
- Support the design of effective regulations and policies to support the UK's innovation capability, increase the demand for R&D in industry, and help make the UK the best place in the world to undertake innovation.

#### Near-term actions

- To ensure technological change aligns with user needs and is socially acceptable, fund data collection and research on the positive and negative impacts of new innovations and how they differ across social groups.
- To inform public policy about the impact of new technologies, fund research on how these are changing lives inside and outside work, with a focus on new digital technologies.
- To contribute to the overall effectiveness of the UK innovation system, fund research on management practices, business models, financing and regulations, for example.
- To support cross-UKRI research, invest in building much-needed interdisciplinary capability for social scientists to work in cross-sector and cross-UKRI collaborations on scientific, technological and medical innovations.
- Support £6.5m of collaborative international research with Canada and Japan on AI and Society.

## Understanding and tackling bullying

A recent survey found that over half of young people had been bullied in the previous year, with online cyber bullying becoming an increasing problem. Professor Louise Arseneault (King's College London) and her team used the 1958 National Child Development Study to show that the effects of childhood bullying continue decades into the future and have profound negative effects on mental and physical health. Together with a team led by Professor Martin Knapp (LSE) they also showed the damage to socio-economic outcomes such as employment, earnings, housing tenure, teenage pregnancy, criminal convictions and savings. These findings led the LSE team to explore the cost-effectiveness of anti-bullying interventions. Together, this research has shown how an important, very widespread social phenomenon, with very significant long-term negative effects, can be understood using longitudinal data, aiding the development of highly effective, low-cost policy interventions with the potential to transform millions of lives. The importance and value of ESRC data investments for research on the mental health impacts of bullying were highlighted by E. Jane Costello in her editorial in the *American Journal of Psychiatry* (2014) where she noted: "Over time, researchers were able to study the health effects of many events and interventions undreamed of when birth cohort studies began... The productivity of these birth cohort studies has been prodigious and their value beyond calculation."



### 3.2.4 Changing populations

We will invest core funding to understand changes in UK and global populations, and the implications for public services and relationships between generations.

#### Context

Changes in the size, composition and geographic distribution of the UK and global population influence productivity, social cohesion and the demand, design and delivery of public services in areas such as housing, pensions, welfare, and health and social care. Since 2000 the UK population has grown by over 7 million, but understanding of interrelated changes in fertility, relationships, family structure, mortality and migration is underdeveloped.

Migration, for example, accounts for over half of UK population growth and research is needed on issues such as how it shapes local communities, how long migrants come for and how and where they work, settle and retire. Similarly, it is important to understand rising life expectancy, one of the 20th century's most remarkable achievements, because it has recently stalled and differences between social groups and across regions have widened. As a result, many people risk spending their later years in poor health, creating pressures on public services. Moreover, the relationship between generations is changing as the relative prospects for young adults decline.

Meeting the needs of all citizens in an ageing society is one of the UK's most significant challenges. The Prime Minister recently announced our Ageing Grand Challenge's mission to "ensure that people can enjoy at least five extra healthy, independent years of life by 2035, while narrowing the gap between...the richest and poorest", emphasising healthy ageing and new health and social risks (specifically obesity and loneliness). There is now a House of Lords Select Committee on Intergenerational Fairness and Provision and demand is growing for research in this area among government departments.

#### Long-term ambitions

- Invest in targeted research, data and training on key policy priorities relating to the UK population's health, wellbeing and prosperity. New research will cover generational issues, inequalities and new social risks.
- Continue to invest in the data infrastructure that will underpin the research community's ability to understand individuals, households, groups and organisations in the UK. Key proposed investments include new collections of survey data and linked administrative datasets that allow researchers to understand how health, education, housing, work and transport interact in more detail than previously possible.
- Support training in the data-science skills needed to link and work with large datasets, unpick causal relationships, lead cross-disciplinary projects, particularly using health/ (epi)genetic data, and use data responsibly.
- Increase opportunities for researchers to work with research users outside academia.
- Improve how data infrastructure can connect to and be used with external data, for example on social networking and consumer behaviour.

### Near-term actions

- Launch a Connecting Generations programme that expands research on demographic change and its consequences for transfers between generations. This will provide deeper analysis of social mobility, job security, family formation and reproductive strategies, social coherence and resilience, caring responsibilities and work-life balance. It will focus explicitly on how life trajectories are influenced and vary within and across cohorts. For example, the UK has experienced a surge in complex family relationships and shifts in intergenerational solidarity; research will therefore explore how precarious labour markets, economic recessions/fluctuations and difficulties faced by the youngest generations entering the housing market impact individuals and families.
- Launch an Inclusive Ageing initiative that takes a life-course approach to understanding the impact of early-life-course factors on later life, key transition points and the wide range of social and economic factors affecting health, social risks and outcomes. Inequality in later life is a major issue facing society as it can influence health and social risks such as obesity, loneliness and mental health. Overall, we have a strengthening portfolio around social care and extended working lives, and the Industrial Strategy Challenge Fund's Healthy Ageing call, which we are leading, will address technology and care and help support the successful delivery of the Ageing Society Grand Challenge.

### Improving quality of life for older people

New Dynamics of Ageing (NDA) was a 10-year multidisciplinary cross-council research initiative to improve older peoples' quality of life. It had a major impact on policy and practice, creating new nutritional assessment devices for hospitals and cognitive behavioural therapy for insomnia, and enabled industrial designers to ensure their products better match older people's needs.



## A more robust basis for statistical data

Research by our Centre for Population Change (CPC) has changed the way the Office for National Statistics (ONS) collects and analyses data on fertility, how it reports migration data to Eurostat and how international student migration is measured. CPC has also worked with ONS to improve calculation of the English Life Tables used across the insurance and pensions industry to calculate premiums and annuities, affecting millions of lives. It has also worked with the National Records of Scotland (NRS) on the Census and collaborated with the UN to improve methods of population forecasting. More broadly, we have supported a wide range of substantive empirical research on the consequences of demographic change, most notably through recent work by the IFS and CPC's work on carers and intergenerational flows of resources.



## Strengthening mental health research

Since 2016 we have invested to build social science research capacity on mental health, to help understand the factors that influence it, effective prevention, therapeutic and social interventions, and policies to improve mental health. We have been working collaboratively across UKRI to develop this multidisciplinary agenda and to stimulate a cross-disciplinary Mental Health Network Plus. We have also reached out to work with the National Society for the Prevention of Cruelty to Children (NSPCC) and the UK Prevention Research Partnership, stimulating international research collaborations by funding work around mental health and substance misuse in developing countries and South Africa.

### 3.2.5 The UK in a Changing World

We will invest to understand the UK's changing position in the world to ensure the UK is informed about, engaged with and prepared for longer-term, intergenerational, international and global shocks and stresses to society.

#### Context

Long-established forms of democratic politics and governance are being disrupted. Changes can be seen in the UK's relationship with Europe, the declining legitimacy of established political parties and of some mass media, the shifting impact of educational background and regional, ethnic and cultural identities on political allegiances, increased capacity to mobilise protest through social media, the rise of populism and challenges posed by security threats such as terrorism and cybercrime.

The changing relationships between citizens and institutions are a feature of international politics that has significant consequences for democratic engagement, domestic policymaking and international relations. Research that helps make sense of this evolving political and socio-economic context is important across the social sciences and represents a vital part of the research support that UKRI provides for the UK state, devolved administrations and civil society.

#### Long-term ambitions

- Build a larger, deeper, more diverse portfolio of research and research expertise that can provide the UK state, devolved administrations and civil society with the ability to make sense of this country's changing international position. The breadth and depth of this portfolio should reflect the needs of a major global economy that is a member of the UN Security Council and is building new relationships as it repositions itself in a changing international order.
- Improve research collaborations and ensure research is aligned with users' needs, while also finding answers to more fundamental long-term research questions that will inform future engagement and improve our ability to detect and rapidly respond, with our national and international research partners, to newly emerging issues.

- Invest in additional research capacity and develop new cohorts of social scientists with new skills, data and support to engage with the public and with national and international policymakers.

#### Near-term actions

- Launch the first wave of the Governance after Brexit programme to explore the long-term implications of the UK's changing relationship with Europe, and roll-out the second phase once the shape of that relationship has crystallised.
- Recommission our flagship UK in a Changing Europe initiative with £3m (2019-2020) to continue to provide robust, independent evidence from across our portfolio.
- Continue funding key data collections, including the British Election Survey (BES) and European Social Survey that enable social scientists to describe and understand changing political attitudes and behaviour, often within the context of global patterns.
- In collaboration with European partners through the New Opportunities for Research Funding Agency Cooperation in Europe (NORFACE) consortium of 19 funding agencies, support £4m of research on the nature of current challenges and how the UK and other European states can negotiate them and develop strategies to enhance democratic politics.
- At a global level, invest in research to explore the changing nature of trust and governance. Grants will explore the social and psychological foundations of trust and how trust is related to inequalities, the future of democracy, identity, community, ethics and international security.

## Improving poorer students' social mobility

ESRC-funded research at the IFS, UCL and the University of Cambridge has had a major impact on measures to improve the social mobility of high-achieving poorer students. The research revealed that differences in education achievement between poor and rich students emerge early, so that even high-achieving poor students fall behind their richer counterparts by early secondary school. As a result, many miss out on university participation or do not attend high-status institutions. Poorer students who make it to university are more likely to drop out. Moreover, even if they graduate with the same degree as their richer counterparts, they are far less likely to secure a high-paying 'top job'. This research influenced government decisions on investments in education and the 2014 Social Mobility strategy, and more recently guided Office for Students advice on how universities should widen participation and work to improve labour-market outcomes for poor students.





### More reliable polling for elections

In the 2015 General Election, the opinion polls incorrectly predicted a Labour victory. British Election Survey (BES) data and analysis showed that population samples used in polling were unrepresentative and failed to capture ‘hard to reach’ voters; moreover, pollsters’ weighting adjustments did not correct properly for the skewed distributions of respondents. BES research underpinned the findings of the independent inquiry into the 2015 election polls, while a major vote-validation exercise carried out with the Electoral Commission provided a benchmark of the voting population for scholars and non-academic data users, including the polling industry. The BES team’s analysis gained extensive media coverage and they were recognised as the first to forecast the Leave vote during ITN’s EU referendum coverage in 2016. Their close working partnership with the media has improved public understanding of election results, including the EU referendum and President Trump’s victory, and BES data, graphics and analysis now inform millions of viewers on election nights. As Nick Moon, of the British Polling Council, noted:

“At a time when the whole concept of sample surveys was called into doubt, the ability of the British Election Study to show that well-designed and well-conducted surveys can still represent the population with a high degree of accuracy helped polling organisations... understand what might have gone wrong and how to avoid similar problems in future.”

### 3.2.6 Global development, environment and society

We will invest in research on major global challenges with an emphasis on international development and responding to climate change.

#### Context

Climate change and unequal access to health, wealth, education and resources are two of the most pressing long-term global challenges. Moreover, as they interact their negative impacts intensify. The costs of climate change increase rapidly over time, so there is an urgent need to address climate change without imposing excessive costs on the poorest communities. This urgency has generated coordinated international activity mobilised through the UN Agenda 2030, the Paris Agreement, the Sendai Framework and the New Urban Agenda. The UK government has taken a leading role in responding to climate change through its Clean Growth Strategy, the Clean Growth Grand Challenge as set out in the Industrial Strategy, and the Department for Environment, Food and Rural Affairs (Defra) 25-year plan for the environment.

Social science research at the individual, cultural, political and corporate level is central to successful implementation of these strategies and is needed to drive the social, structural and systemic changes that will change attitudes and behaviours. We will fund world-leading research to better understand these issues, find, evaluate and implement solutions, inform better choices and increase societal resilience. This is a significant area of ESRC research, where we expect to fund approximately £70m of research, including £65m through seven Global Challenge Research Fund (GCRF) programmes we are engaged with.

#### Long-term ambitions

- Building on the UK's world-leading social science in all areas of international development, we aim to upgrade our capability as research priorities shift from understanding problems to finding and implementing solutions. The range and breadth of this portfolio of research should be large enough to support the government's leading international position in international development and climate change policy.
- Work across UKRI and with stakeholders from industry, policy and civil society to build collective UK research capability.
- Invest core funds to build the skills and connections researchers need to work across national, organisational and disciplinary boundaries to improve outcomes and ensure research has a tangible impact on policy and practice.
- Support research into the role of governments and political structures in managing and mitigating the impacts of climate change on communities across the globe.
- Support research into energy supply and demand, energy transitions and ways of reducing emissions, sustainable resource management, enhancing natural capital and the societal and economic potential of a circular economy.
- Work with our global partners to generate new insights into the root causes of poverty and inequality and how they can be addressed to achieve better outcomes. The challenges facing people in developing countries will continue to be a high priority.
- Significantly improve the quality and use of data for research and policy development by working across UKRI and with our international partners to create, integrate, share and exploit new, innovative data sources, including those that integrate social science, health and natural environment data.

### Near-term actions

- Support research on education systems in developing countries, from early childhood development to appropriate skills acquisition by young people entering work.
- In partnership with the Department for International Development (DFID), develop the second phase of the Raising Learning Outcomes programme to research education systems in developing countries, influences on learning outcomes and how education policies can be improved.
- Provide £5m funding for a new Climate Change Centre to address governance, choice and behaviours from the individual to the intergovernmental level.
- Support research in our Place-based Climate Action Network which will focus on local decision-making on climate policy and support social scientists working with business on innovative climate solutions.
- Collaborate across UKRI to invest in an interdisciplinary programme on climate resilience, producing evidence for the 3rd UK Climate Change Risk Assessment (CCRA), and initiatives on implementing the UN Sustainable Development Goals.
- Explore additional investments in marine resource management and the coastal economy, as well as expanding our portfolio on innovative energy systems.
- Under the Global Challenges Research Fund (GCRF), lead delivery of a range of interdisciplinary activities, addressing issues ranging from gender through to energy use and distribution in cities, and develop initiatives to generate more impact from research through engagement with policy.
- Continue to support the UK Energy Research Centre (UKERC) and provide substantial coordinated investment addressing global food security.
- Support our strategic partnership with DFID which has invested over £109 million in research for poverty alleviation, growth and education.

### Propelling energy research forward

The UK Energy Research Centre (UKERC) coordinates research to inform UK energy policy, the implementation of the Industrial Strategy and policy on innovation and clean growth. It has been working with UKRI and the Department for Business, Energy and Industrial Strategy (BEIS) to develop a new Industrial Strategy Challenge Fund programme, Prospering from the Energy Revolution, and policies to move towards low-carbon energy systems.



## Forward steps to sustainability

The Social, Technological and Environmental Pathways to Sustainability (STEPS) Centre carries out interdisciplinary research to reduce poverty and enhance social justice. It has had significant impact and its Director Ian Scoones won an ESRC Outstanding International Impact Award in 2015 for his work on rural livelihoods in Zimbabwe. In 2016, Melissa Leach and her team were shortlisted for their work on an online portal that delivers advice to policymakers and practitioners on engaging with local communities when identifying and diagnosing cases of Ebola, managing death and funerals, and caring for the sick. Over 16,000 users have accessed the portal, which shaped responses in Sierra Leone around community care centres, safe burials and vaccine trials. The team's members work within the social science sub-group of the UK Government Scientific Advisory Group for Emergencies and on three core World Health Organization committees. They are currently working with UNICEF and the Wellcome Trust to develop new models for emergency preparedness and response.



## 3.3 FOUNDATIONAL PILLARS

### 3.3.1 Talent, methods and leadership

We will continue to invest in building research talent and plan to extend provision across researchers' entire careers to build the skills needed to lead large inter-disciplinary and international projects and exploit our data resources. Investment to generate major improvement in research talent, methods and leadership is a core aspect of our strategic vision and of this delivery plan.

#### Context

We invest in talent to ensure UK social science remains world-leading. Through our training and research funding, we nurture cohorts of social scientists across a large number of disciplines and interdisciplinary areas. Social scientists receive funding from a variety of national and international organisations, but we are the largest single UK-based funder of social and economic research, methods and training. As a result, we can take a longer-term, more strategic view of the overall health of the social sciences. Our investment in social science research talent strengthens UKRI's interdisciplinary, cross-sectoral research partnerships, and supports the development of world-leading science, research and innovation which sits at the heart of the Industrial Strategy. As cross-UKRI research increases, we will also need to invest in building new interdisciplinary research capacity to undertake excellent research in a range of new areas.

#### Long-term ambitions

- Extend training support along researchers' career paths beyond PhD and early-career stages, to allow them to develop appropriate leadership and project-delivery skills as the size and complexity of their research activities increase.
- Extend our previous investment to ensure researchers have the skills and tools to conduct world-class research. We aim to achieve a major improvement in the data-science skills and methods needed to exploit our data resources, skills for collaborative, cross-disciplinary research and skills needed to co-produce research with users from the public, business and voluntary sectors.
- Foster equality, diversity and inclusion (EDI) in the research base, and attract and retain talent from the widest possible pool so the UK is the location of choice for global talent. This requires a flexible approach to training/support and more collaboration with research organisations to maintain and enhance the talent pipeline.
- Expand our portfolio of opportunities through targeted investment in doctoral training, fellowships, New Investigator awards and general grant funding.
- Increase opportunities for placements, secondments and co-produced research with the public, voluntary and business sectors, to help researchers work outside academia.
- Work with other funders and stakeholders to pump-prime emerging areas, to identify and address skills gaps. We will utilise Centres for Doctoral Training (CDTs) to build new interdisciplinary capacity, in partnership with other research councils, and improve researchers' continuing professional development.
- Review leadership needs and enhance project-delivery training with our research partners in government, business and the voluntary sector, in response to the growing scale and complexity of projects.
- Develop a new horizon-scanning function, including around interdisciplinary approaches, and invest in research methods training to identify future methodological needs.

## Near-term actions

- Ensure the UK PhD remains internationally competitive and provides effective preparation for academic and non-academic careers by conducting a major review of PhD training and support. This may lead to fundamental changes in the length, structure, content and quality of the doctoral training experience.
- Build capacity in advanced quantitative methods and data science by: extending our partnership with the Nuffield Foundation and providing transition funding for the Q-Step initiative; funding up to four Centres for Doctoral Training (CDTs), extending our investment in the Biosocial and New Forms of Data CDTs and seeking to fund a further two in data science; and building on our fellowship scheme with the Alan Turing Institute to invest in upskilling mid-career and senior researchers so they can exploit our world-class data infrastructure.
- Develop, deliver and coordinate training in cutting-edge quantitative and qualitative methods for academic and non-academic researchers by commissioning a new research methods training centre.
- Promote EDI through our funding and reflect the diversity of career trajectories for early-career researchers by removing time-bound eligibility criteria from our New Investigator scheme.
- Improve how we work with research organisations and other stakeholders by producing an ambitious new research leadership and talent management strategy offering flexible approaches to support researchers throughout their careers.

## Bringing change to training

Q-Step is a £19.5 million programme delivering a step change in quantitative social science training in the UK. Funded by the Nuffield Foundation, ESRC and Research England, it was developed as a strategic response to the shortage of quantitatively skilled social science graduates. Eighteen universities are funded to establish centres and affiliates that will develop and deliver specialist undergraduate programmes, courses, work placements and pathways to postgraduate study. The resulting expertise and resources will be shared across the higher education sector through a support programme connecting with schools and employers.



### **Doctoral training opens new possibilities in biosocial research**

The Soc-B Centre for Doctoral Training in Biosocial Research is a unique PhD training programme that we fund with BBSRC to build new interdisciplinary capacity. Evidence increasingly shows strong links between the social environment and health, but the biological processes linking the two are less clear. Collection of new biomarker data, such as neuroimaging, genomics, metabolomics, cognitive and physical functioning data, across a number of well-characterised longitudinal social surveys, has created the need for innovative analysis methods. These need to handle multidimensional datasets and find the causal mechanisms underlying the reciprocal relationships between the social environment and biology. Graduates of this innovative programme will have cutting-edge research skills and the theoretical knowledge, analytic capabilities and communication skills needed to make major advances in biosocial research.



### 3.3.2 Mobilising knowledge, impact and engagement

To increase the ability of social science research to deliver improved outcomes, we will invest in deepening our partnerships with research users.

#### Context

We are committed to driving innovation and maximising the impact of the work we support, and have taken an international lead in progressing the impact agenda. From these strong foundations, we are now moving forward to achieve a step-change improvement in the impact of social science research. This involves moving the impact agenda on from influencing policy and practice to working more closely with research users so that research helps improve outcomes.

#### Long-term ambitions

- Create a closer connection between research and practice and ensure social science research fulfils its potential and fully contributes to addressing the challenges the UK faces. The move from influencing practice to collaborating to improve outcomes will require researchers to engage further upstream and downstream, which will require us to increase our public engagement, extend our partnerships with research users in government, industry and charities and work more closely across UKRI.
- Continue to build new strategic capacity to understand effective approaches to increase the use of research and how they can be fostered across the social sciences and beyond.
- Improve the ability of research users to access and exploit research through shared training and increases in co-design, co-production and co-delivery of research.
- Expand our Impact Acceleration Account infrastructure and other large investments to support the mobilisation of knowledge in a flexible, speedy, responsive way.
- Invest to evaluate, analyse and improve the support needed to improve outcomes.

- Use our understanding of the multiple ways in which social science has impact to inform our strategic planning and our engagement with the public, members of parliament, policymakers and wider stakeholders.
- To achieve our ambitious target to increase collaborations between social science and business across our activities by 30% over the next five years, we will build on the investment made through the Industrial Strategy Challenge Fund and continue developing a new business engagement strategy that will be implemented in collaboration with the British Academy, the Academy of Social Sciences and the Chartered Association of Business Schools.

#### Near-term actions

- Increase our activities within UKRI to enhance our engagement and communication, our partnership working and our activity to maximise impact.
- Provide leadership, advice and support to the academic community and build a culture of dialogue, trust, collaborative working and advocacy, to help social scientists respond to the new opportunities presented by UKRI initiatives.
- Continue our annual Festival of Social Science and impact prizes to encourage the public and researchers to engage with each other.
- Better understand our role in enabling, supporting and rewarding world-class collaborations that improve outcomes.
- Explore what leadership is needed to drive impact and use those findings to shape our future investment portfolio and our work with Innovate UK to capture and measure impact around productivity and innovation.
- Expand the What Works Network across UKRI and embed evaluation into our portfolio, to improve our understanding of effective approaches to improve outcomes.
- Continue our successful engagement with Parliament, including through our engagement with, and support of the Parliamentary Office for Science and Technology (POST).

- Create new opportunities for the social sciences to engage with industry, with a focus on entrepreneurship and social enterprises within our impact toolkit.
- Continue to engage across UKRI with the Industrial Strategy Challenge Fund to embed social science perspectives in new funding areas and support our community to develop high-quality multidisciplinary and industry/business partnerships through our Impact Acceleration Accounts and other investments.
- Continue to fund Knowledge Transfer Partnerships (KTPs), supporting collaborations between businesses and social scientists across the UK.
- Working with Innovate UK, continue to support an innovation network that provides social science insights to support innovation across UKRI.

### Helping to inform Parliament

Supported through our funding since 2013, the Parliamentary Office for Science and Technology's (POST's) Social Science Section has provided parliamentarians with high-quality social science analysis to inform their decision-making. Knowledge exchange and capacity-building work has now been embedded in POST through creation of a new Knowledge Exchange Unit that provides support across Parliament and facilitates two-way communication with academia, industry and learned societies, ensuring Parliament can call on the best possible expertise. As a result, Parliament is now informed about research to a far greater extent and our model has been replicated around the world.





### **Partners in knowledge**

We have an ongoing commitment to work alongside Innovate UK in supporting social science engagement with businesses through KTPs. For instance, Innovate UK, the Welsh Government, Cardiff University and Welsh charity Lamau (Welsh for leap) hosted a KTP to support homeless and vulnerable young people and women. This resulted in the charity's growth to cover the whole of Wales.



### **Supporting inward investment**

Professor Nigel Driffield of Warwick Business School has helped Greater Birmingham become one of the most successful areas in Europe at attracting business investment. Working through the Greater Birmingham & Solihull Local Enterprise Partnership and with Marketing Birmingham, Professor Driffield helped develop an inwards investment strategy that has attracted £150 million over recent years. His work with the Department for International Trade and business investment agencies to identify foreign firms with a high probability of expanding internationally helped attract six firms to the UK, generating jobs for almost 10,000 people to date.

### 3.3.3 Data and infrastructure

Data has always underpinned our research. As social science becomes more data-intensive, and new forms of data become available, we will ensure the UK's data infrastructure remains world-leading.

#### Context

Our data infrastructure has underpinned some of the most important findings and breakthroughs in social science, such as the impact of smoking in pregnancy, the long-term effects of bullying, the value of early-years cognitive support, multi-level modelling and inflation targeting. Addressing future challenges similarly requires collecting and curating world-class data and ensuring its widespread reuse. A key part of ESRC's strategy involves building and exploiting new linked datasets to generate world-leading research. This research and data is central to the delivery of the AI & Data Grand Challenge in the Industrial Strategy.

We support two main types of data infrastructure. Firstly, survey data that is either longitudinal (Understanding Society: the UK Household Longitudinal Study and birth cohort data) or cross-sectional (the British Election Survey). Survey data is collected specifically for research and provides detailed information on nationally representative samples of individuals, households or organisations. These datasets are freely accessed through the UK Data Service which ESRC has supported for over 50 years. It enables over 100,000 downloads a year, with 20% of these from outside the social sciences and 10% from industry.

Secondly, 'big data' (social media and transactional and administrative records), whilst not typically collected for research purposes and often narrower in focus, offers larger sample sizes or more granular information. It can also require considerable investment in its collation, curation and distribution. Key ESRC-funded infrastructure includes the Administrative Data Research Partnership, our three Big Data Network Centres and the Census Research Support Units.

These forms of data have complementary strengths and are often used together to develop the nuanced understanding of public behaviour required for policy intervention. The value of many of our data investments grows as they are updated with each round of new data, allowing more nuanced understanding of changes

over time. Moreover, our unique international collaborations allow many surveys to replicate question sets included in comparable studies in other countries, allowing national comparisons that shed light on social, demographic and policy variations. As these various datasets are increasingly linked they are transforming our understanding of society and the effectiveness of public services. For example, linked data will allow social scientists to follow high-frequency users of public services through the various systems they engage with and detect new ways to support the most marginal people in society.

#### Long-term ambition

- Build on our international reputation for high-quality data infrastructure and create a world-leading UK data infrastructure of linked datasets, enabling ground-breaking research to provide new insights into how behavioural, environmental and biosocial factors interact to produce different outcomes for individuals and society. This integrated, interoperable, flexible data infrastructure portfolio will be able to support excellent research and the UK's policy, business and research needs. Data, and its safe, ethical and efficient use at scale, underpins the exploitation of the opportunity that AI offers to all of the Industrial Strategy Grand Challenges.

#### Near-term actions

- Maintain and support innovation in our existing infrastructure by:
  - scoping investment in Archives of the Future, which will build on the strengths of the UK Data Service to meet increasingly complex data storage, curation, access and analysis needs
  - commissioning the next waves of Understanding Society, and developing plans for sustainable long-term investment in longitudinal studies and cohorts
  - supporting public engagement to build involvement, understanding and trust into our data-driven research ambitions to exploit large data for social research for the public benefit.

- Work with partners to enhance the utility of, access to, and social, cultural and economic impact from our investments by:
  - supporting methodological innovation in collection, storage, analysis and use of data and improving access to, use of and impact from our data
  - ensuring that new challenges, across UKRI, make best use of existing data and expertise and that data investments are shaped to meet the research community’s emerging needs
  - supporting development of capacity and capability in quantitative and computational social science through fellowships, placements and specific investment in associated skills and talent.
- Strategically fill gaps in the UK’s national data portfolio by:
  - continuing to develop the new Administrative Data Research Partnership
  - investing in new waves of data collection for existing cohort studies and scoping a new birth cohort to capture the lives of children born into the UK’s rapidly shifting social and economic context, including the 2008 recession and exit from the EU; this will connect to new global birth cohorts and existing UK studies. We will also fund new waves of data collection for existing cohort studies
  - scoping an Administrative Data Spine to provide a robust sampling frame for the new birth cohort and to minimise the burden of data collection by linking existing cohorts to routine administrative data; this will also enable researchers to better assess how representative their samples are of the wider population
  - scoping new investments in new and emerging forms of data, building on existing activities, advancing the quality and availability of, and confidence in, the use of such data for research and as evidence for policy
  - working with key partners in the UK and overseas to enable co-investment in international data and infrastructure and underpin internationally collaborative and comparative research.

### Driving the benefits of data linkage

We have been investing to increase the skills and opportunities to exploit administrative data linkage to better understand and inform policies and business growth. To increase the potential impact of national data, we have worked closely with the Office for National Statistics (ONS) and the devolved administrations to develop the Administrative Data Research Partnership, drawing on the National Productivity Investment Fund (NPIF). We and ONS will also be working alongside the chief statisticians for the devolved administrations and their teams to deliver the new data infrastructure. The success of this project will allow the UK to become a global leader in ‘big data’ research infrastructure.





### Understanding the private rented sector

The Urban Big Data Centre is a national research centre and data service offering expertise, training, data collection and data tools for the benefit of cities across the UK and worldwide. One focus of their research is on understanding the private rented sector, where administrative data is often poor, but which is the most dynamic part of the UK's current housing system. The Centre is linking public and private data to build a picture of the sector's scale, location and quality, and will be exploring new data sources to create a more accurate picture of: property ownership and occupancy; finance, transactions and rental market conditions; stock conditions; landlord registrations; and welfare benefits. We also fund the Centre to provide openly available data on housing through its Open Data Catalogue.

### 3.3.4 Enabling International Collaboration

We will fund international research on global problems, ensuring the UK is informed about and connected to major international developments.

#### Context

Many of the biggest questions in social science are international and require research with global reach and vision. International collaboration enhances the quality and impact of research that we support and plays a vital role in ensuring the UK maintains a world-class research environment. Just under a third of grants and fellowships that we funded between 2013-14 and 2017-18 supported international collaborations, reaching out to over 100 countries. This extensive research network ensures the UK is informed about and connected to changes in the wider world.

We also play a unique role in facilitating social science collaboration and influencing the research landscape through our relationships with our funding counterparts in other countries, and will play an important role in delivering the ambitions of the International Research and Innovation Strategy. Research capacity, expertise and investment in the social sciences varies dramatically across partner countries and our approach is tailored accordingly, from funder-led partnerships to stimulate co-funded calls, through to researcher-led project-level collaborations.

#### Long-term ambitions

- Embed opportunities for international collaboration across our investments. By promoting such collaboration we aim to increase the quality, impact and volume of the science we fund. We also proactively promote global perspectives to address global societal challenges by leveraging funding for new collaboration opportunities through UKRI central funding and through our relationships with international funders.

- Stimulate more opportunities for internationally excellent research collaborations with social scientists in leading and emerging research-producing countries. Ensure these networks are large enough and sufficiently high-quality to keep UK social science at the centre of global developments and allow government, industry and civil society to be informed about and connected to major international events.

#### Near-term actions

- Continue to invest to promote collaboration with the leading social science nations in Europe and North America, in any topic or discipline, through our flagship collaborative programme the Open Research Area (ORA) where we plan to spend £5m (2019-2020). In this context, our International Co-Investigator Policy enables up to a third of project costs to support collaboration.
- Lower barriers to internationally excellent collaborations with leading social science nations by developing new lead-agency agreements, or co-investigator agreements, allowing international collaborators to apply to either funder for standard grants.
- Enhance connections with leading social science nations through targeted networking opportunities such as the UK-Japan Social Science and Humanities Connections call.
- Continue to support international use of our data and encourage harmonisation and comparability across countries.
- Proactively promote global research perspectives to address societal challenges aligning with our priority areas through engagement with our counterparts in other nations.
- Continue to invest to stimulate activities with leading European nations around Democratic Governance in a Turbulent Age, through the mould-breaking pan-European NORFACE programme where we will be investing £5m in 2019-2020.

- Expand our funded activities with Nordic funders through planned activities around the future of public services, via the Nordforsk forum. AHRC and ESRC will also jointly leverage additional funds from the UKRI Fund for International Collaboration to support collaborative research on social innovation relating to public services, health and social care, through the Trans-Atlantic Platform (T-AP) of American and European social science and humanities funders.
- Explore international collaborations between data infrastructures and resources, particularly with Australia and New Zealand, contributing to international comparability and the scalability of research on demographic change.
- Build on our established relationships with funding partners in India and China to foster global collaboration on the future of work, the future of multilateral trade and novel financial technologies, which will complement our priority areas focusing on productivity, prosperity and growth, and the UK in a changing world.
- Continue to explore, develop and consolidate new partnerships with emerging science powers such as Colombia, Vietnam and Mexico through new collaborative programmes that complement our priority areas and make a significant contribution to the economic development and welfare of these countries.
- Through the Fund for International Collaboration and other UKRI-wide activities, stimulate greater bilateral social science collaboration with Japan, Canada and the US on issues relating to the productivity opportunities and societal implications of AI and automation, which connects with our focus on the future of work.



### **Risk-based regulation for health and education**

ORA collaborative funding supported comparative research on risk-based regulation across France, Germany, the Netherlands and the UK. This has had a significant impact on regulatory practice in healthcare and education. In the UK in particular, analysis of the Care Quality Commission's (CQC's) Intelligent Monitoring statistical surveillance system, used to identify hospitals prioritised for inspection and improvement, was shared with the CQC. This contributed to the decision to change to a new 'Insight' approach to prioritising regulatory inspections.



## Spotlight on Europe

To meet the growing need for international data, we build and provide access to a number of internationally comparable datasets. For instance, we work with European ministries and funding bodies to support the European Social Survey, a UK-coordinated longitudinal cross-national social survey charting the interactions between Europe's changing institutions and the attitudes, beliefs and behavior patterns of its diverse populations. Data from the survey has informed the debate on extending policy aims beyond economic growth, has been instrumental in developing new measures of wellbeing for the ONS UK Annual Population Survey and has put wellbeing inequalities on the wider public policy agenda. The ONS and Cabinet Office also interact closely with the survey team at City University of London and other academic groups.

## 4. Delivering and being accountable as an outstanding organisation

### Efficient and effective operations

As a council within UKRI, we will fully participate in plans to introduce a more effective business model, seeking efficiencies to improve our provision of services to our stakeholders. We have an active change and transformation community and use business improvement tools and techniques to positively challenge our delivery processes. We will also continue to pursue opportunities to leverage funds from other partners, whether government departments or international co-funders, to increase efficiency and deliver more effective social science outcomes.

Our advisory and decision-making structures are subject to ongoing review to ensure they deliver value for money as well as effective advice on our broad portfolio. We practice proactive management of our major investments to maximise their impact and have an active programme of work on public affairs to ensure users are informed about social science research.

We will play a leading role for UK social science through our two-way engagement with the public on the role and importance of social science, the conduct of research, the areas we focus on and how data is collected and used. A key part of our strategy involves being more strategic in the way we deploy our resources to ensure they deliver improved outcomes. To enable this, we will engage more across UKRI and improve alignment between our two-way communications with research users, our internal research capability and the delivery of our strategy.

### Measuring progress against the UKRI success framework and our plan

The social sciences have a unique contribution to make to evidence-informed research and innovation policy. UKRI has committed to using the highest standards of evidence to inform its investment in research and innovation, and the UK is perceived as world-leading in the way its research and innovation system performs. Existing ESRC research has informed the development of the Strength in Places Fund, the Industrial Strategy and Innovate UK's work on business innovation through the jointly funded Innovation Caucus, a network of 66 academics researching innovation. There is great potential to draw on more social science expertise and evidence about how complex research and innovation interventions are evaluated.

We will take the lead in contributing to UKRI's approach to using evidence to inform research and innovation investment and policy, whether this draws from social science evidence, from UKRI's legacy data estate, from expertise on how UKRI's peer review processes can remain innovative and inclusive, or from setting out a contemporary ethics framework.

We will continue to work as part of UKRI to deliver on our strong commitment to EDI and will also continue to attract and nurture talented people from the widest pool to maintain a global lead in research and innovation. We will work alongside our partners within and beyond UKRI to identify barriers to and challenges for EDI, build knowledge of what works to improve outcomes in this area and support development and implementation of effective practices across the sector. We are also at the forefront of efforts to better capture and understand the diversity data we hold on the grant holders we support, undertaking detailed analysis to uncover and address EDI challenges.

UKRI's approach to EDI will be led by our Executive Chair. This includes UKRI's approach to its own workforce as well as leading the UK research and innovation community by setting out policy and guidance for the sector that reflects cutting-edge thinking and approaches to EDI.

All our operations are reported to the UKRI Executive Committee as part of the UKRI Balanced Scorecard. We regularly review delivery of our objectives at individual and project level, ensuring our work is aligned with UKRI's broader mission and objectives.

We deploy structured programme and project management methods for all our major projects and actively participate in the UKRI-wide project and programme management professional network. Our investment management framework provides practical guidance to ensure the impact and performance of our major investments.

### **The Innovation Caucus**

Funded by Innovate UK and ESRC, this initiative supports innovation-led growth and promotes greater engagement between the social sciences and businesses. Comprising 66 academics and under the leadership of Professor Tim Vorley (University of Sheffield), the Innovation Caucus provides research insights on innovation and champions the contribution of social science to the broader innovation landscape. Through briefings, workshops, small-scale research projects and PhD placements, it has mobilised social science knowledge that has helped shape and support the design, development and evaluation of policies and programmes for sustainable innovation-led economic growth. Working collaboratively and flexibly, it has engaged in a range of projects, from diversity and inclusion to sustainable development, and from business model innovation to the Industrial Strategy Challenge Fund.

See <http://innovationcaucus.co.uk>



## 5. Financial allocation

ESRC		2019-20
Research and Innovation Budgets		142.5
Science Infrastructure Capital		26.2
ODA		51.4
o/w	GCRF	45.4
	Newton Fund	6.0
NPIF		23.2
o/w	Skills	3.5
	Other	15.6
	Funds For International Collaboration	0.4
	Strategic Priorities Fund	3.7
ESRC Programme		243.3

# UK Research and Innovation Delivery Plans



UKRI



AHRC



BBSRC



EPSRC



ESRC



Innovate UK



MRC



NERC



Research England



STFC