UKPRP Consortium Awards, Call 2 – Successful outline applicants

The table below lists the eight applicants who were invited to submit full proposals for the UKPRP consortium award under the current call. Additional information on each outline proposal can be found by clicking on the name of the Research Director. Details of a Co-Director, where applicable, have not been provided. The information provided is taken from the outline applications and provided with the permission of the Research Director (and the consortium).

Consortium

Research Director	Institute	Title of proposal
Professor Ashley Adamson	Newcastle University	ENABLE UK: ENABling Local authority Evidence-based decision-making across the UK.
Professor Brian Castellani	Durham University	InSPIRE: Innovating UK clean air policies to prevent cognitive disorders across the lifespan, particularly for vulnerable urban populations
Professor Peter Fonagy	University College London	Systemic prevention of poor adolescent mental health and promotion of social connection and wellbeing
Dr Ruth Hunter	Queen's University of Belfast	GroundsWell: Community and Data Led Systems Transformation of Urban Green and Blue Space for Population Health - Consortium Development Grant (CDG)
Professor Christopher Rogers	University of Birmingham	REPLENISH - REimagining PLaces and ENgineering Infrastructure Systems for Health
Dr Peter Scarborough	University of Oxford	i3food: Information, Interventions and Inequalities in the UK food system
Professor Arpana Verma	The University of Manchester	Poverty Reduction's Influence On Risk factors for non-communicable diseases: A systems approach (PRIOR)
Professor Sylvia Walby	City, University of London	Violence, Health and Society

Grant reference	Research Director	Institution	Title of Proposal
MR/T045264/1	Professor Ashley Adamson	Newcastle University	ENABLE UK: ENABling Local authority Evidence-based decision-making across the UK.

Summary

UK ENABLE Consortium vision, aims and objectives:

Local government is uniquely placed to shape the environmental and social factors which fundamentally influence non communicable diseases (NCDs) and thus our health and wellbeing. Our vision is for local government to consider the health of local populations in all policy and practice decisions and to have the best possible scientific evidence to support those decisions. We will test our vision by working with five different local authority (LA) based public health systems across the UK, learning what works best, and what can be useful for all LAs across the UK.

Our consortium brings together academics, practitioners, policy makers and other stakeholders from across the UK in five centres in NE and SW England, Scotland, Northern Ireland and Wales; each with different models of public health delivery.

We will develop and test a process that embeds research capacity and expertise in LAs. Working closely with our partners in each LA, we will identify a current priority for improving the health and wellbeing and reducing inequalities of people living in that area. By building relationships between academics, practitioners and policy makers we will enable the LA to access and create new evidence that is relevant for decision making about the priority issue.

Scientific rationale for the proposed research:

Evidence-informed policy-making aims to improve decision making by using the best available research. Organisational and cultural barriers within the current system have made this approach difficult to achieve. New methods and approaches are needed which bring together researchers, practitioners and policy makers in local government, where evidence is only one contributing factor to decision-making. Embedded researchers and knowledge brokers can help to ensure evidence is used by building understanding of the context, accessing existing, and co-producing new evidence.

Intervention(s) of interest and the potential applications and anticipated benefits of the work:

By the end of the project we will:

1. Increase research capacity and 'no how' in each LA, focusing on a local NCD priority issue, enabling access to evidence to inform local decision-making. We will develop and share learning which is generalisable across the UK

2. Build and support new partnerships for active and effective research use with practitioners, policy makers, and academia

3. Build knowledge and skills in local government and universities to maximise use of different kinds of evidence for policy, practice and public decision-making

4. Co-create evidence that addresses local government priorities, with a focus on prevention, by working across sectors and disciplines, utilising novel methodological approaches, including complex systems models

5. Develop a range of health and system interventions that have been co-produced and tested across LA areas

6. Create sustained change in research culture in LAs and academia so that evidence use is embedded across local government

7. Evaluate this new approach and methods to see if we made a difference to the health of people living in each area, related to their priority topic, and whether/how this approach could be rolled out across the UK

We anticipate that this work will improve population health and wellbeing and increase the use of scientific research. It aims to improve quality, efficiency and effectiveness of public health interventions and services, reduce waste, and improve staff morale and retention.

Consortium management:

Our across-UK academic leadership brings together experience of applied translational research in prevention from four of the UKCRC funded Centres of Excellence in Public Health. Senior leaders in local government public health, bring practical experience of putting evidence into action. Other members have expertise in systems thinking, embedded research, knowledge brokerage and other skills essential to our success.

Grant reference	Research Director	Institution	Title of Proposal
MR/T045221/1	Professor Brian Castellani	Durham University	InSPIRE: Innovating UK clean air policies to prevent cognitive disorders across the lifespan, particularly for vulnerable urban populations

Summary

THE PROBLEM

Public health prevention today faces a serious challenge: new research suggests that breathing high levels of air pollutants at critical points in our lives, particularly in early life, can lead to significant cognitive disorders, including dementia. This causal link, however, from a public health standpoint, is not the primary challenge. Instead, the challenge is in figuring out how best to prevent it. What new research tentatively suggests, and here is the real public health challenge, is that the factors that account for which populations are most likely to develop air-pollution-based cognitive disorders has less to do with 'how' they live and more to do with 'where' they live. In other words, it appears that, from a revention standpoint, the complex social and environmental systems in which certain populations live makes air pollution a health vulnerability for them. Air pollution is a form of cognitive health inequality.

What is not clear, however, is specifically 'how' these complex systems make air pollution a cognitive health vulnerability? From policies for traffic management and urban congestion to the un-equitable sharing of benefits derived from clean air strategies, we do not entirely understand the pathways by which the social and environmental determinants of air pollution lead to cognitive disorders. In turn, therefore, we do not entirely know how to effectively intervene into these complex systems. In other words, from a primary prevention standpoint it is not clear which air policies or interventions best mitigate against the negative impact these determinants have on cognitive health, particularly for the most socioeconomically vulnerable populations in the UK's major conurbations. Hence the purpose of InSPIRE.

OUR COMPLEXITY APPROACH

InSPIRE will develop innovative primary prevention strategies for improving air quality, so that where one lives in the UK is no longer a cognitive health vulnerability. InSPIRE (which is comprised of 22 academics working across 9 universities with a network of partnerships) will engage in a highly ambitious research programme using the latest developments in systems science methods for public health to do the following:

1.Develop a cutting-edge UK air pollution model (1970-2020) of what is known as PM2.5. These air pollutants are hazardous because they enter the bloodstream and travel to the brain to cause cognitive impairment.

2.Work with the Dementias Platform to link our air pollution model to the cognitive health outcomes of three different highly regard UK cohorts.

3.Work with regional and national partners to evaluate previous and current clean air strategies (1970 - 2020) to identify the most successful (for our cohorts) at mitigating the negative impact place has on cognitive health.

4.Create a catalogue of these policy strategies and evaluate them further for 4 conurbations: London, Birmingham, Tyne Wear and greater Manchester.

5.Use these results to produce high quality policy information and strategies to inform end-users on preventing air-pollution based cognitive disorders and health inequalities.

OUR TOOLKIT/SIMULATION PLATFORM

InSPIRE will also launch an online evaluation toolkit and scenario simulation platform similar to the UK Multiple Deprivation Index and 2050 DECC Energy Calculator. With impact at the forefront of our partnership with the public and stakeholders, our simulation platform and toolkit will be immediately fit for purpose. Additionally, central and local end-users will be able to fine tune their platform as the world changes around them. Linking with national or local data and regional services, they will also be empowered to determine what will work and what is cost effective in the short and long term. Together, InSPIRE will help mitigate the effect of air pollution on cognitive health, both opening prospects and closing pathways to this cognitive barrier for the good of our population

Grant reference	Research Director	Institution	Title of Proposal
MR/T045337/1	Professor Peter Fonagy	University College London	Systemic prevention of poor adolescent mental health and promotion of social connection and wellbeing

Summary

Our proposal represents an ambitious and radical approach to improving the mental health of adolescents. Young people face numerous and increasing challenges, including rapidly changing technology, environmental concerns and uncertainty about economic and employment prospects. All of this can affect their mental health. This is particularly true for Black/African/Caribbean young people growing up disadvantaged in urban communities, exposed to high levels of discrimination, violence and trauma, as well as young people growing up in isolated, remote and rural communities.

Typical approaches to supporting the mental health of vulnerable young people, whilst well-intentioned, often fall short of providing the help that young people need. Too often formal support is absent - most young people experiencing mental health difficulties do not receive help from services. If support is made available, it often comes too late once problems have taken hold. The support that is provided is often removed from the realities in which young people live, and can inadvertently foster a reliance on help from outside their communities.

We want to flip models of mental health support from 'top-down' service models of help that can never realistically meet the needs of young people, to community-led approaches in which young people develop in rich, supportive social ties and networks of support. There is strong evidence to support our view that social support, connection and strengths that already reside within communities may be the best source from which to prevent the debilitating and serious effects of poor mental health that is gripping many communities.

Our approach brings together leading scientists, designers and community champions to explore the local influences upon young people's mental health in two areas: Black/African/Caribbean young people in disadvantaged urban London communities, and young people living in rural, remote areas in Devon. These are two often neglected populations.

Our partnership is led by Professor Peter Fonagy at University College London - a world leading expert on adolescent mental health, and his teams at both UCL and Anna Freud National Centre for Children and Families (AFNCCF). Our partnership also includes experts in systems and data science (PenARC and Dartington Service Design Lab), service design (Hilary Cottam and Shift) and youth work embedded within communities (Redthread).

We know that each community is different, with their own challenges but also their own strengths. We will work with young people to deeply understand the realities of growing up in dense urban or remote/rural communities and to chart the opportunities and strengths that reside within these communities. We want to tackle the underlying causes of poor mental health, not just the visible symptoms. Together, we will design a series of innovative interventions that build social ties within and across communities so that the positive promotion of mental health is everyone's business, and that the whole community is well equipped to support young people to thrive.

We will also make sure that the interventions and support systems that are designed stand the test of time. We do not want our work to be a one-off, time-limited effort that fizzles away in a few years. Approaches will be embedded within communities over the long-term. We will also design interventions and approaches that can be picked up, adopted and replicated elsewhere. We think every community should have the tools and approaches to capitalise on the strengths that exist in their area to promote young people's mental health.

As such, we'll be working with leading entrepreneurs and business-minded partners to ensure that our approaches can be widely adopted, yet still reflect the local nuance and needs of specific communities.

Grant reference	Research Director	Institution	Title of Proposal
MR/T045043/1	Dr Ruth Hunter	Queen's University of Belfast	GroundsWell: Community and Data Led Systems Transformation of Urban Green and Blue Space for Population Health - Consortium Development Grant (CDG)

Summary

Those living in low-income areas have a much higher risk of long-term conditions such as diabetes, heart disease, depression, and frailty. Our lifestyle, such as how active we are, what we eat and if we smoke or drink alcohol in excess can greatly increase our chance of having one of these diseases. The environment that we live in, such as if we live close
to or visit parks, canals, and forests, can help us live a healthier life. However, communities living in low-income areas can have poorer access to such spaces or use them less. They also have less voice in decisions affecting their local spaces, at either local or national level.

We propose a new partnership: researchers, clinicians, practitioners (such as urban designers) and policymakers all working with local citizens who have the most to benefit from better access to and use of quality spaces. We will work collaboratively to identify poor quality and underused spaces through citizen-led approaches. We will then work with them to develop and/or modify outdoor spaces so that they are high quality and fit for purpose. These actions can be as small as window boxes in schools, or as large as the development of new greenways or reshaping policies regarding land use to protect our green spaces. We will also work to identify ways in which we can promote such spaces for everyone, ensuring that no community is excluded form benefit. The important aspect is that local communities are fully involved in decisions about what they want, and what they will use, thus becoming central to the decision-making process. They will also be involved in the evaluation of these actions, enabling them to directly see how the process has benefited their communities.

An important part of putting actions and solutions in place is understanding if they work (or not). Data plays an important part in measuring success, particularly if the same data can be collected consistently across the different actions. Another part of the partnership will be establishing a way of bringing multiple sources of data together so we can effectively
determine what works across multiple projects and settings. So, whilst citizens can be involved in collecting data about whether the space has improved their health and wellbeing (through a bespoke app), we can also use other data on health, wellbeing and the environment that is routinely collected by local councils and governments.

The main research will take place in three different cities - Edinburgh, Belfast and Liverpool - all with some similar features (such as large urban areas with lower income communities) and distinct features (such as geography and culture). Each city already has policies and programmes in place to improve green and blue space, but there is much room for improvement. Working with the local citizens we will test a range of different methods and approaches, and be able to collect a large amount of data. This data can then be used to understand what works for whom and why across the cities. We can then use this knowledge to predict what could be effective over a much wider area, and also what does not work. We can also make some decisions around what is good value for money, and what is not.

We also understand that individual small actions within local communities (or even within cities) are not going to solve the problem, which is why we are also going to focus on how our research can help inform future policies and programmes.

Our programme of work will take a whole life course approach which will ensure inclusive environments for all; working with our youngest citizens in particular will ensure early cultural change levers are activated, empowering a new generation with lifelong health and wellbeing.

Grant reference	Research Director	Institution	Title of Proposal
MR/T045353/1	Professor Christopher Rogers	University of Birmingham	REPLENISH - REimagining PLaces and ENgineering Infrastructure Systems for Health

Summary

The infrastructure systems that support our urban systems and serve citizens, society and cities, have developed over centuries. They have been variously superseded, extended and supplemented as populations have grown, technology has developed and contexts have changed. This presents challenges of maintenance (keeping the older parts going) and integration (of the new with the old) as expectations of ever better service inexorably rise.

REPLENISH is focusing on the 'urban metabolism' - the flows of resources, goods and people into, around and out of cities. When the infrastructure systems underpinning this 'urban metabolism' work uninterrupted and unencumbered by excessive demand or lack of affordability, they work well and citizens are happy. This is the expectation. However there several factors combine to compromise the efficacy of these systems and materially damage citizen mental and physical health and wellbeing (H&WB):

- Many infrastructure systems are not run primarily for the benefit of the citizenry they serve. Where (e.g. many utility) services are provided by private companies, their primary responsibility is to their shareholders and profit is an overriding imperative. Regulation is a mechanism for acting for the common good, but can only be invoked using incontrovertible evidence.
- Our infrastructure systems are highly interdependent - a failure or need for major intervention in one will often have significant adverse consequences on many others.
- Rapidly-growing demand often outstrips supply, with effects most keenly felt in mobility systems. Congestion, delays, uncertainty of travel times and plotting of routes to 'beat the competition' lead to angst and stress ('commuter rage', cf. 'road rage', in the extreme) and compromised mental health.
- Infrastructure systems deteriorate with age, repeated use and due to environmental factors. Maintenance, refurbishment and replacement fails to keep pace with system-wide deterioration, causing failures and emergency repairs, and often major disruption. Disruption to the urban metabolism due to streetworks, arising from the physical interdependency of multiple buried pipes and cables beneath roads, is a prime example.
- Serious side effects of current mobility systems include engine exhaust emission and airborne particulates from vehicle breaks and tyres.
- Wealthier citizens can sometimes avoid such problems by using some of their wealth, whereas poorer citizens cannot.

This results in H&WB inequalities.

Moreover, the solution to some of these 'urban metabolism' problems offer potential for physical exercise. Non communicable diseases (NCDs), including heart disease, stroke, cancer, diabetes and chronic lung disease, are collectively responsible for almost 70% of all deaths worldwide. Radical changes to the quality of the urban environment and the way we move around cities would manifestly improve this situation.

Our infrastructure systems, as currently constituted, are therefore one of the major upstream determinants of NCDs and compromised mental H&WB, and contribute hugely to direct costs (e.g. to the NHS) and indirect costs (e.g. loss of productivity) to the UK's economy.

REPLENISH contends that if our infrastructure systems and their associated cityscapes were designed with positive H&WB outcomes as the primary design criterion, huge social and economic benefits would result. REPLENISH therefore proposes, by adopting systems thinking and systems engineering (or 'doing'), to:

- create the evidence base to prove the extent of the damage to citizen H&WB and the benefits of change,
- rethink and redesign our engineered infrastructure systems and cityscapes,
- create alternative business models that would prove the value of investment in making such change, and amended forms of governance that control their efficacy,
- prove the concepts via demonstrator projects in association with the Design Council, Sustrans and other user partners.

Grant reference	Research Director	Institution	Title of Proposal
MR/T045027/1	Dr Peter Scarborough	University of Oxford	i3food: Information, Interventions and Inequalities in the UK food system

Summary

Every day, the UK is fed by a network of retailers, manufacturers, caterers, transporters, farmers, customs officials, environmental health officers, tech companies and many others. This food system is highly complex but does not provide optimal results - diets in the UK are often high in saturated fat, salt and sugar, low in fruit and vegetables, and are associated with unsustainable levels of environmental damage. Access to food is not equal in the UK, with more disadvantaged groups less likely to achieve healthy, sustainable diets. This finely balanced system can be disrupted by novel technologies (e.g. food delivery service apps) which create huge changes in purchasing over a short space of time.

From a distance, the UK food system resembles a calm river threading its way around the country, but viewed closely it is a turbulent, ever-changing maelstrom. This new consortium of researchers will conduct multidisciplinary research aimed at capturing the dynamism of the maelstrom, understanding the turbulence and redirecting the flow of the river so that the food system is channelled towards healthy and sustainable outcomes for every group across Britain. To understand the food system you must understand the motivations of the people who interact with it. We will develop strong links with the food industry, public health policymakers and members of the public from disadvantaged groups. This will ensure that our research is focussed on plausible changes to the food system that have the potential to be implemented at scale.

The modern consumer expects easy access to food services and to the information required to make informed purchasing decisions. This has led to abundance of data about the food system being made freely available online (e.g. supermarket and fast food outlet websites, food delivery service apps). Meanwhile, data on food purchases are collected by retailers to inform their marketing strategies. We will harvest these data to build a constantly updating picture of the food system, including how that food system varies around the country and how food purchasing behaviour differs for different social groups. We will use these data to monitor how changes in the food system affect consumer purchasing decisions in different parts of the country and in different social groups. These changes may be due to 'system shocks', such as the fall in the value of the pound that has accompanied the possibility of a 'no deal' Brexit. Or they may be due to implementation of new policies, such as the regulation of volume-based price promotions (e.g. Buy One Get One Free).

With guidance from representatives of the public we will develop new tools to help consumers make healthy, sustainable food purchasing decisions, such as a smartphone app to allow people to monitor the nutritional quality and the environmental footprint of their shopping basket. After user testing with targeted groups, we will test the effectiveness of the tools using experimental studies. Alongside this, we will work with food industry partners to develop changes in the retail food environment, such as changing the position of healthy and sustainable foods to core selling areas within the shop. We will measure the effect of these changes on food purchasing behaviour using store sales data.

The data we collect and the results of these studies will inform models of the food system which will give us insight into what will have a lasting positive impact on health, inequalities and health care costs, and where are the critical areas of the food system that can trigger large impacts throughout the food system. We will feed our results back to the public, by running public engagement events such as school visits, pub talks, stalls at science conferences and shopping centre engagements. We will also ensure that the novel datasets that we collect are made available to the UK academic community, to strengthen public health research throughout the UK.

Grant reference	Research Director	Institution	Title of Proposal
MR/T04540X/1	Professor Arpana Verma	The University of Manchester	Poverty Reduction's Influence On Risk factors for non-communicable diseases: A systems approach (PRIOR)

Summary

People from poorer backgrounds have higher levels of chronic diseases e.g. heart disease, chest problems and mental health conditions. We also know of the vicious cycle of debt leading to poorer mental and physical health. In some parts of our cities, there is increasing food and fuel poverty leading to terrible consequences, including children having lower life expectancies than their parents and more chance of multiple diseases developing during their working age. To prevent people from becoming poorer, many councils work with employers and other agencies, such as voluntary groups, to develop 'poverty alleviation' activities. Health professionals often measure poverty to find where the most deprived communities live and target health activities in these areas and then measure the impacts on health, taking into account poverty. Many health policies have focused on lifestyle changes for the individual. This relies on high levels of health and

digital literacy and changing behaviour being the individual's responsibility. Financial literacy has also suffered the same problem. People are expected to know how to avoid debt, spend wisely and develop skills to improve their wealth. We also know that poorer people suffer from many mental and physical diseases earlier in life than those from richer backgrounds. We noticed from when we speak to people from these communities they tell us how their finances mean they are not able to make healthy choices for themselves and their families or able to navigate the latest digital technologies. They also describe their frustration with the vicious cycle of being in debt and not being able to provide all that is needed to thrive.

The importance of place and community on how people make healthy and other life choices is becoming an important area for research, policy and practice. This unique programme called "Poverty Reduction's Influence On Risk factors for non communicable diseases: A systems approach (PRIOR)", aims to combine all the professional disciplines, charities and the voluntary sector in poverty alleviation with the public and business. The aim is to improve health and wellbeing, with a focus on mental wellbeing, through the co-design, co-financing, implementation and evaluation of poverty alleviation strategies

which include education interventions, improving health, financial and digital inclusivity and literacy, a microgrant scheme, and non-communicable disease (NCD) prevention through incentivised schemes to improve wellbeing. We will focus on the most deprived communities in Manchester, Cheshire and Doncaster to demonstrate improved social capital and cohesion, employability and improving public spaces. By changing the various systems that influence poverty and health, we will be able to reduce the burden of NCDs on the most vulnerable in our communities. Health promotion theory is based on developing 'organised efforts of society' to help individuals make "the health choice the easy choice". Financial inclusion interventions, similarly, make sure people have good understanding of their finances. Our project management only has five universities because we will focus on our consortium including the wide range of people who directly work with individuals in communities. We will work together with communities, bringing our own expertise to come up with novel solutions e.g. health, digital and financial literacy training, microgrant schemes, incentivised healthy options. They will decide on what is important and how best to implement it. We will then use robust methodologies to bring about system change to measure whether it is effective both for the individuals and is affordable. We know the system has a huge impact on the choices that an individual will make, so we will change the systems to ensure everyone fairly has the skills they need

whilst comparing this to areas without our way of working. This evidence can be used in other places at little or no additional cost.

Grant reference	Research Director	Institution	Title of Proposal
MR/T045302/1	Professor Sylvia Walby	City, University of London	Violence, Health and Society

Summary

Violence causes harms to health, especially long-lasting harms to mental health. Mental health is significantly impacted by violence. These harms to mental health can be more long-lasting than the immediate harms to physical health. They have consequences that reverberate through a person's life impacting on their functioning in society, with still further consequences. Reducing such 'upstream' determinants of poor mental health would significantly improve the health of the population. Investigating the effectiveness of potential interventions to reduce exposure to violence is central to the proposal.

Within the field of violence, we have special interest in domestic and sexual violence because these are significant causes of inequalities in mental health. We address how to mainstream these issues across multiple sectors rather than seeing them as only of specialised concern. Our Consortium aims to mainstream violence prevention at higher and earlier stages than before. Multiple institutions are relevant to preventing violence. They include not only health services, but also law enforcement (most violence is a crime), social services (especially important for child protection), specialised services (Third Sector organisations that help victim/survivors of violence), and governmental bodies concerned with law, policy and data quality.

The connections between violence and mental ill health are complicated since they are mediated by many social systems (institutions). Identifying these connections (causal pathways) would aid the development of more effective interventions. The data needed to assess the effectiveness of interventions is currently weak. This is partly because each specialised academic discipline and profession has a different way of measuring violence, which makes cooperation across these differences difficult. Not only do we need harmonised core metrics for cross-sector cost-benefit comparisons, we also need to adapt and extend our metrics to capture the new forms of technology-facilitated abuse. The Consortium aims to improve the measurement framework and data availability to aid the cross-sector evaluation of interventions. It seeks to develop cooperation between academics and professionals as to how this is best done. After reaching agreement on how to proceed, we would develop the data needed to assess interventions. This involves developing cooperation between data providers, agreements on common categories, and making data more available. This involves care and attention to issues of data protection and the development of bespoke agreements on data sharing that respect the communities that generate data.

We would unlock the potential in multiple data sources with increased cooperation over a shared measurement framework. These data sets include major national surveys such as the Adult Psychiatric Morbidity Survey (national survey of mental health that includes information on experience of violence), and the Crime Survey for England and Wales (national survey that includes changes over time in violence and their consequences). They include administrative data sets from professions and practices, including the police, health and social services, specialised services and technology companies.

We would locate data analysts of multiple data sets in the same space to facilitate technical cooperation between usually separate disciplines.

With the newly improved data, we would use academic, statistical, and practitioner knowledge and the resources of the Consortium to assess key interventions. These are interventions at the level of institutions and systems. We leave to others the issue of addressing the treatment of trauma in individuals already affected by violence. Our focus is the 'prevention' of violence in the population. The aim is to reduce the harm to health, especially mental health, by identifying the most effective interventions to reduce violence in the population.