



Department
of Health &
Social Care

Research and development work relating to assistive technology

2018–19

January 2020

Department of Health and Social Care

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Presented to Parliament pursuant to Section 22 of
the Chronically Sick and Disabled Persons Act 1970



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Introduction

About this report

Section 22 of the Chronically Sick and Disabled Persons Act 1970 requires a report to be placed before Parliament each year on progress made in Government-funded research relating to equipment that might increase the range of activities and independence or well-being of disabled people, known as assistive technology.

Working with stakeholders, in 2001 the Foundation for Assistive Technology developed the following definition for assistive technology:

Assistive technology is any product or service designed to enable independence for disabled and older people.

This broad definition means that a wide range of products and services are eligible for inclusion in this report. As technology advances, the breadth of work covered is constantly expanding. The research covers not only specific products, but also systems, combinations of technologies, and interfaces to mainstream technology such as the internet. Research focused on the wider neighbourhood is also eligible for inclusion in this report; this might include clinical and public health researchers working with engineering, housing, architects and urban-planning experts to make improvements for disabled or older people. In addition to addressing issues associated with physical health, developments in various types of assistive technology can help people with mental health difficulties live more independent lives; these can often involve online and behavioural approaches rather than devices. Developments with a focus on mental health are also eligible for inclusion in this report.

For the purpose of this report, products and systems are further classified as assistive technology if their adoption and use is under some measure of control by the disabled or older end-user and there is a level of meaningful interaction by the end-user with the product or system. This therefore excludes telemedicine services such as videoconferencing between a general practitioner and a hospital consultant, and the use of equipment in the hospital and GP surgery, as these technologies are primarily used by, and operated under the control of, healthcare professionals. Neither does the report feature research on implanted technologies over which the user has no control or interaction, such as hip replacements.

This report aims to reflect research relating to a wide range of impairments and conditions, and to cover research on service provision and patterns of use as well as development and evaluation of technologies. It highlights developments in priority setting and funding for assistive technology research and innovation, some particular areas of research activity, and any developments in supporting uptake and spread of assistive technology. The Annex provides a listing of government-funded assistive technology research and development projects current in 2018–19.

Glossary of organisation acronyms

AHRC	Arts and Humanities Research Council
BBSRC	Biotechnology and Biological Sciences Research Council
CSO	Chief Scientist Office of the Scottish Government Health and Social Care directorates
DfT	Department for Transport
EC	European Commission
EPSRC	Engineering and Physical Sciences Research Council
ESRC	Economic and Social Research Council
HCRW	Health and Care Research Wales
HEE	Health Education England
JLA	James Lind Alliance
MRC	Medical Research Council
NIHR	National Institute for Health Research
HSC PHA	Health and Social Care Northern Ireland R&D Division Public Health Agency
STFC	Science and Technology Facilities Council

Developments in priority setting and funding

This section highlights developments in priority setting and funding for assistive technology research and innovation. It provides a few examples of government funding related to assistive technology and any current or planned funding rounds/calls, developments of research networks that will shape the direction of new assistive technology research and any other planned work as a result of funding.

JLA Priority Setting Partnerships

The James Lind Alliance (JLA) is a non-profit-making initiative established in 2004. It brings patients, carers and clinicians together in Priority Setting Partnerships (PSP) to identify and prioritise the top 10 unanswered questions or evidence uncertainties in a particular health condition or setting. The aim of this is to ensure that health research funders are aware of the issues that matter most to patients and clinicians. The National Institute for Health Research (NIHR) funds the infrastructure of the JLA.

More than 80 PSPs have now been completed. During 2018–19, research priorities were agreed for a range of health conditions and settings, including adult social work, mental health in children and young people, safe care for adults with complex health needs, paediatric lower limb surgery, physiotherapy and coeliac disease.

In 2018, the Digital Technology for Mental Health PSP published a number of research priorities relevant to assistive technology, including:

- Priority 3: How can treatment outcomes be maximised by combining existing treatment options (e.g. medication, psychological therapies) with digital mental health interventions?
- Priority 9: Do digital health interventions increase reach and access to groups and people less well served by traditional mental health services (e.g. Black and ethnic minorities, men with depression, people living in rural areas)?
- Priority 10: How can social media be used more effectively to bring people with mental health problems together and help them connect (e.g. in their communities), rather than isolating them in their homes?

The research priorities agreed by the Learning Difficulties (Scotland) PSP in 2018 included:

- Which information and communication technologies (ICT) (e.g. augmentative and alternative communication devices, ICT-based communication aids, assistive technology, iPads/writing aids/tablets/phones) are effective and how can these best be accessed by children and young people with learning difficulties?

As a result of the Scoliosis PSP that published its priorities in 2017, the NIHR has asked researchers to submit their proposals for evaluating night-time-only bracing for scoliosis compared with standard care, which often involves bracing both during the day and at night. NIHR-funded research continues to estimate the costs and benefits of providing very young disabled children (aged under 5 years) with powered mobility aids (e.g. mini wheelchairs, ride-on cars), a priority identified by the Childhood Disability PSP.

EPSRC Centre for Doctoral Training in Prosthetics and Orthotics

The Disabled Living Foundation estimates that 6.5 million people in the UK live with mobility disablement, with many of those people reliant on prosthetic or orthotic (P&O) services. The Engineering and Physical Sciences Research Council (EPSRC) aims to establish a Centre for Doctoral Training in P&O. The Centre will support a minimum of 58 doctoral students, whose studies will enable them to become leaders of the future. The Centre will bring together the only two P&O undergraduate education facilities in the UK (University of Salford, Manchester, and University of Strathclyde, Glasgow) and P&O research centres of excellence at Imperial College London and the University of Southampton.

The Centre aims to:

- Develop a new model of P&O research training and translation of research into innovation. In addition to the doctoral training, this will result in master's programmes that operate across institutions.
- Produce ambitious PhD research projects that will be grounded in real-world challenges while at the cutting-edge of new biomedical science and technologies.
- Have a significant impact on the UK P&O industry sector by leading innovation.
- Have an international impact by attracting an increasing number of Centres for Doctoral Training students from overseas.
- Establish a P&O student society that will mature into a lasting doctoral community with international reach.
- Have a significant impact on the training of doctoral candidates from lower- and middle-income countries.
- Attract additional external funding for P&O research.

EPSRC studentships

EPSRC currently funds several studentships that are focused on developing different forms of assistive technology. Two examples are:

- Perceptual aspects of broadcast audio mixing for people with hearing impairment. This project aims to investigate, implement and validate new strategies for mixing broadcast content so that it can be delivered with improved perceptual quality for people with hearing impairment.
- Integrating computer vision with neural interfacing for semi-autonomous control of robotic limbs. This project will explore the potential of shared control for grasping objects using prostheses. Cameras, and potentially other sensors, such as accelerometers, will be placed on the prosthetic itself, and the system will receive information both from these sensors and from the user (e.g. myoelectric control). The end goal is for the full system to be a complete, embedded solution.

ISCF (Innovate UK)

The Industrial Strategy Challenge Fund (ISCF) will provide new opportunities for UK businesses and researchers to apply for funding to develop new products and services that support people to live more healthy, active lives as they get older. Up to £98 million will be invested in research and innovation that supports people as they age, as well as their carers. The fund will also support businesses working on ideas that would allow people to live better and independently for longer, building on the research from academic institutions, research and technology organisations and hospitals.

Current NIHR calls

The NIHR has commissioned a number of calls that may attract applications for studies evaluating assistive technology. For instance, the NIHR Health Technology Assessment programme is advertising call 19/77, 'Monitoring and follow-up for adults with hearing loss' (closing date 4 December 2019). The Public Health Research programme is advertising call 19/90, 'Continuing priority research topics' (closing date 19 November 2019), which encompasses two topics, promoting independence in older people and enabling people to live well with dementia, both of which could result in applications for studies of interventions that include assistive technology. An advertised researcher-led open call may also attract relevant applications.

Research current in 2018–19

This report details a wide range of research activity, supported by a variety of funders and host institutions. This section describes just some of the studies looking to solve the particular challenges affecting the independence of elderly and disabled people.

Wearable technologies

Section 22 of the Chronically Sick and Disabled Persons Act (1970) makes specific reference to equipment that might increase the range of activities and independence or well-being of older people or people with disabilities. It is evident from a number of projects in this year's report that wearable technologies are a particular focus. For example, in a project funded by the EPSRC, researchers are developing soft robotic clothing, 'The Right Trousers', to enable those with mobility impairments, disabilities or age-related weakness to move easily and unaided and to live independently and with dignity. Unlike conventional robotics, soft robotics are new, compliant, active materials and structures that work in harmony with the human body. Instead of motors, metals and plastics, soft robotics are made of smart materials that bend, twist or contract when electrically stimulated. These 'artificial muscles' can replace motors and can be used to restore mobility and physical function.

Building on discoveries from 'The Right Trousers', the FREEHAB Healthcare Impact Partnership will develop soft, wearable devices to assist rehabilitation in age-related musculoskeletal and neurological conditions. To do this, the researchers will work in partnership with physiotherapists in NHS services and in private practice, with people who have experienced physiotherapy for mobility problems and with business partners who are experienced in bringing rehabilitation and assistive technology devices through from concept to market. The researchers aim to plan how FREEHAB technologies will progress from research and development through translation into clinical trials, and to bring the devices into the supply chain after the project is complete.

Innovate UK has funded several projects that focus on the development of wearable technologies. Examples include a robotic prosthetic foot that will emulate lost muscles by the integration of technologies such as additive manufacturing, hydraulic actuation, advanced sensing and microprocessor control. Innovate UK has also funded the development of a robotic exoskeleton prototype, which will be used to further research and develop assistive and enhance robotic exoskeletons.

Tracking and movement systems

Tracking devices are increasingly common, and both their number and their use are likely to expand further. Researchers funded by the Arts and Humanities Research Council (AHRC) aim to explore the controversies and challenges of tracking systems. They plan to foster debate and collaboration between academics, policy-makers, designers and practitioners about the ethical, legal, social and technical issues arising from the current and future use of non-removable wearable devices that enable location monitoring or the tracking of wearers by a third party. This international cross-disciplinary network will explore the use of tracking devices in a number of areas, including with offenders, people with a mental health condition, young people in care and patients with dementia.

Several other projects in this report focus on location monitoring and movement systems. For instance, research funded by Innovate UK aims to enable people who are vulnerable or older to be monitored using low-power radio tags and precise location accuracy. The primary target market for this TaCT (tracking and communication technology) programme is the care home sector, and the aim is to enable patient location, personal communications, and well-being and health monitoring. SPHERE, funded by the EPSRC, is an interdisciplinary research collaboration that aims to develop a number of different sensors that will combine to build a picture of how we live in our homes. This information can then be used to identify issues that might indicate a medical or well-being problem, for example by detecting falls. Similarly, research funded by Innovate UK aims to develop a sensing product using existing large-scale printed capacitive proximity sensor technologies to create a falls-detecting product for elderly individuals and their carers, particularly in crowded, hazardous or isolated spaces.

Independence in the community

A large number of projects in this report focus on assistive technology in health and social care settings or in the home. However, several projects also focus on adapting the wider neighbourhood or the design of assistive technologies to support people to travel independently. An example is a review funded by the Department for Transport (DfT) that aims to explore older drivers' experiences of advanced driver assistance systems (ADAS). ADAS are technologies designed to increase the ease and safety of driving. Examples include blind-spot detection systems and rear-view cameras. The review assesses the role ADAS could play in maintaining and enhancing the mobility of older people in the UK, and meeting their transport needs, over the next 5–10 years.

A number of awards also focus on hearing loss and communications in public environments. For instance, research funded by Innovate UK aims to develop the fundamental technologies, devices and infrastructure for a new audio distribution system for public hearing assistance. It will use new technologies for direct-to-hearing aid communication, also allowing simultaneous participation on future smart devices. The new platform will dramatically improve adoption of hearing assistance and widen access to its benefits. Similarly, a project funded by EPSRC aims to improve access to rail disruption information for d/Deaf passengers who cannot hear or might miss station announcements.

Supporting people with autism spectrum disorder

Several projects in this report focus on new developments in assistive technology that aim to support people with autism spectrum disorder (ASD). Researchers funded by NIHR have developed Point OutWords, an iPad app-based communication training system, in partnership with clients with ASD and their therapists. A feasibility study will evaluate if it is possible to recruit and retain families in sufficient numbers and whether families would accept Point OutWords and use it as recommended. The study will also explore how practical the system is for families and use a controlled trial approach to assess several tests that could measure improvements resulting from Point OutWords.

In another NIHR-funded project, researchers will conduct a feasibility study of a randomised controlled trial to investigate the effectiveness of a humanoid robot to support the social skills development of children with ASD. Similarly, research funded by EPSRC aims to develop a socially competent robot training buddy that will help adults with ASD to perform social tasks that they may find difficult as a result of social cognition impairments.

Supporting uptake and spread of assistive technology

This section provides information on issues related to the implementation of assistive technology, as well as information about projects and networks that support the uptake and spread of assistive technology.

NIHR Dissemination Centre

In December 2018 the NIHR Dissemination Centre published a themed review highlighting recent research that focused on assistive technology for older people and was funded by the NIHR and other government funders. The review showcases projects on the remote monitoring of frail older people and adaptations to the home, and details ways in which technologies are used and delivered in everyday life. The research in the review was selected with the help of an expert steering group.

The review highlights that research into assistive technology remains an emerging area, and that more evidence is needed to understand how older people use technology in the home, as well as on the potential challenges of implementation and uptake. A number of studies have explored a wide range of integrated monitoring and response systems to check the health, well-being and safety of older people living at home. However, the review also notes that few real-life evaluations have been made of the impact that these systems have on falls, hospital admissions or quality of life. Some research on the design of the home environment is focused on critical spaces, such as bathrooms and kitchens. Other projects focus on wider neighbourhood infrastructure and involve clinical and public health researchers working with architects and engineering, housing and urban-planning experts. More basic research is looking at the navigation issues experienced by people with dementia so that these can inform the design of homes and care homes in the future.

In January 2019, the NIHR Dissemination Centre launch event for 'Help at home: Use of assistive technology for older people' hosted 55 occupational therapists, local authority commissioners, adult social care services, researchers, industry representatives, carers and service users. At this event there was enthusiasm about the potential benefits of assistive technology, but frustration that these are not always well understood by those who could benefit as users or consumers. Interesting debates also focused on the emerging knowledge base for assistive technology, the challenges of technology assessment and prescription, and personal and professional experiences of the use of assistive technology. See these links for information about the review and blogs about the launch event.

In the months since the themed review launched, it has been downloaded over 4000 times and its pages on the Dissemination Centre website have been visited just over 14,000 times. The NIHR's most popular tweet about the review reached more than 31,000 people and received 205 engagements.

As part of the steering group's work for the assistive technology themed review, the Dissemination Centre established a strong working relationship with the Royal College of Occupational Therapists. This has led to the re-publishing, in alternate months, of Signals that are of particular interest to occupational therapists and also to the publication of a collection of Signals curated by seven occupational therapists working in different specialties.

SBRI Healthcare

The Small Business Research Initiative for Healthcare (SBRI Healthcare) is an NHS England initiative delivered by the Academic Health Science Networks (AHSN). The initiative focuses on accelerating the development of new technologies to meet the needs of the NHS. According to an independent report produced by PA Consulting, interventions supported by SBRI Healthcare are estimated to have saved the NHS £30 million to date.

Some of the initiatives SBRI Healthcare supports develop and promote assistive technology. For instance, 'Just Checking' was originally developed to monitor the activities of daily living of frail older people living in their own homes. This simple-to-install system can also be used to understand the natural living patterns of a person requiring care. As part of the Right Care Competition, Just Checking Ltd received funding for a phase 3 project to assess whether this system could be used to manage the care of adults with learning disabilities in supported living or residential care.

The deployment of the system has necessitated some bespoke modifications, particularly for monitoring multiple service users in residential care settings. The core proposition supported by the Just Checking technology is to reduce 'over-care', that is, identifying where service users are able to manage on their own, for instance by understanding whether there is a real need for an overnight carer on site. In the last 12 months, 350 new Just Checking systems have been sold, around 200 of which are for use with adults with learning disabilities. SBRI Healthcare estimates that the Just Checking intervention has saved the NHS £11 million to date.

NIHR Knowledge Mobilisation Research Fellowship

The NIHR has funded a fellowship award that aims to mobilise knowledge to improve assistive technology commissioning, service provision and sustained implementation. Specifically, the award will help professionals in health and social care to identify what they need to understand about people's lives, about new and current technology and about the different priorities of people involved in designing and delivering services. This will help commissioners to choose assistive technology that fits the needs of the individual service user and the available services supporting them. The project will look at current local practice and knowledge, talking to people about their experience of using services and their knowledge of assistive technology, in addition to identifying older people to work with as they start using new assistive technology. This will involve collaborative work with several stakeholders, including Hertfordshire County Council, NIHR CLAHRC (Collaboration for Leadership in Applied Health Research and Care) East of England and the Eastern Academic Health Science Network.

Annex. Listing of assistive technology research and development projects 2018–19

Note: When compiling the data for the 2018–19 report, each funding organisation was provided with a definition of assistive technology and a set of inclusion and exclusion criteria building on work previously undertaken by the Foundation for Assistive Technology (see Appendix). Each funding organisation that contributed to the report was responsible for the identification and submission of projects to be included. The report was co-ordinated and produced by the NIHR.

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Disability and Community: Dis/engagement, dis/enfranchisement, dis/parity and dissent – aka The D4D project</p> <p>Bath Spa University</p> <p>https://gtr.ukri.org/projects?ref=AH%2FN004108%2F2</p>	<p>This project is exploring the ways in which disabled people are connected to and disconnected from surrounding communities and how they might re-situate themselves in and re-shape the communities around them. The project aims to improve service provision and quality of life for people with disabilities but also to support service providers, policy-makers, and manufacturers and providers of technology.</p>	<p>AHRC</p> <p>Mar 16 – Mar 20</p> <p>£1,296,406</p>
<p>Cyberselves: how immersive technologies will impact our future selves</p> <p>University of Sheffield</p> <p>http://gtr.ukri.org/projects?ref=AH%2FR004811%2F1</p>	<p>Through collaboration with a wide range of partners, this project intends to look in to immersive technologies and have input about (1) the public conversations about what these technologies are for, and what they are doing to our concept of ourselves as ‘humans’ in different ‘societies’, (2) the ethical and legal challenges that such technologies will inevitably force us to confront, and (3) the direction and design of the technologies themselves.</p>	<p>AHRC</p> <p>Oct 17 – Sep 18</p> <p>£78,493</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>'Tracking People': controversies and challenges</p> <p>University of Leeds</p> <p>http://gtr.ukri.org/projects?ref=AH%2FN005929%2F1</p>	<p>The network will foster debate and collaboration between academics, policy-makers, designers and practitioners about the ethical, legal, social and technical issues arising from the current and future use of non-removable wearable devices that enable location monitoring or tracking of wearers by a third party. This international cross-disciplinary network will explore the use of tracking devices in a number of domains, including with offenders, people with a mental health condition, young people in care and patients with dementia.</p>	<p>AHRC</p> <p>Oct 16 – Mar 19</p> <p>£35,994</p>
<p>The hills are alive: combining the benefits of natural environments and group singing through immersive experiences</p> <p>University of York</p> <p>http://gtr.ukri.org/projects?ref=AH%2FR009139%2F1</p>	<p>The main outcome of the research is an immersive and interactive virtual reality installation where individuals can participate in a group singing event on a Lake District mountain summit in virtual reality. It provides opportunities not just for able-bodied participants to enjoy the multiple well-being benefits of singing on mountain summits, but also, uniquely, for those otherwise unable to access such activities to do so through an immersive virtual reality experience.</p>	<p>AHRC</p> <p>Mar 18 – Oct 18</p> <p>£59,501</p>
<p>Human echolocation: basic mechanisms and neuroplasticity</p> <p>Durham University</p> <p>https://gtr.ukri.org/projects?ref=BB%2FM007847%2F1</p>	<p>The aims of the work are to (1) investigate which areas in the human brain are associated with echolocation, (2) measure how the ageing human brain learns to echolocate and (3) measure how echolocation is related to people's 'regular' spatial hearing. The proposed work will achieve these objectives using behavioural training, psychophysical testing and magnetic resonance imaging (MRI).</p>	<p>Biotechnology and Biological Sciences Research Council (BBSRC)</p> <p>May 16 – Apr 19</p> <p>£409,942</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Pain management and patient Education for Physical Activity in Intermittent claudication (PrEPaid): feasibility randomised controlled trial</p> <p>Glasgow Caledonian University</p>	<p>The research team has shown that transcutaneous electrical nerve stimulation (TENS) can help to reduce pain and increase walking distance in patients with peripheral arterial disease (PAD). They have also shown in previous research that educating patients about their condition and helping them to set goals has the potential to increase physical activity and quality of life. This study will examine the feasibility of designing a definitive trial that investigates whether or not TENS can improve the physical activity of patients with PAD.</p>	<p>Chief Scientist Office of the Scottish Government Health and Social Care directorates (CSO)</p> <p>Aug 17 – Oct 19</p> <p>£244,085</p>
<p>ApplTree: personalised digital reminding to support memory impairment after brain injury</p> <p>University of Glasgow</p>	<p>ApplTree prompts reminder setting, supports reminder entry to improve accuracy and delivers users with prompts at the appropriate times. In this study the researchers will first examine the features of ApplTree that suit participants with different needs based on cognitive ability. Then a pilot randomised controlled trial will be conducted to provide crucial information to inform a future larger-scale efficacy trial of ApplTree as an intervention to support memory in people with acquired brain injury.</p>	<p>Chief Scientist Office</p> <p>Jan 19 – Dec 20</p>
<p>Ride Side by Side</p> <p>Cycle Training Ltd</p>	<p>The project tests the feasibility of enabling people with limited mobility to make short local trips using specially adapted power-assisted cycles and accompanied by a co-rider. It offers people a service using a power-assisted side-by-side cycle whereby they pedal with a trained co-rider to make trips of their choice of within 2 miles or 30 minutes from where they live. People can book the service online or by telephone. Additional support is offered, such as help to access the clinic/shop.</p>	<p>DfT Innovation Challenge Fund (ICF)</p> <p>£44,050</p> <p>Mar 17 – Jun 18</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>Signly Disruption App Signly Ltd</p>	<p>This project focuses on enabling better access to rail disruption information for d/Deaf (and hearing) passengers who cannot hear or might miss station announcements.</p>	<p>DfT Transport-Technology Innovation Grants (T-TRIG) £28,980 Mar 18 – Aug 18</p>
<p>Universal train access ramp Cecence</p>	<p>Laboratory testing on lightweight composite materials and structural engineering analysis to enable the development of a fully stress-tested pre-production train access ramp.</p>	<p>DfT T-TRIG £30,000 Mar 18 – Aug 18</p>
<p>Experiences of advanced driver assistance systems amongst older drivers</p>	<p>Advanced driver assistance systems (ADAS) are technologies designed to increase the ease and safety of driving. Examples include blind-spot detection systems and rear-view cameras. The review assesses the potential role of ADAS in maintaining and enhancing the mobility of and meeting the transport needs of older people in the UK over the next 5–10 years.</p>	<p>DfT Sep 18 – Aug 19 £45,000</p>
<p>Damibu: dementia-friendly transport app Journey planning and wayfinding platform Zipabout SBRI Healthcare</p>	<p>This project focuses on developing a unique dementia-friendly transport app. The app acts as a companion on a given journey, directing people from their house to the hospital or any other location they are travelling to, and then to the relevant department within the hospital or other building.</p> <p>The Zipabout platform provides personalised routing to the user to help them avoid stressful environments (e.g. crowded locations or unstaffed stations). The platform is being delivered through a prototype app that will trial image recognition technologies that provide ongoing reassurance that a user is in the correct location, which could boost the confidence of unsure travellers.</p>	<p>DfT SBRI £120,000</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Sensorimotor learning for control of prosthetic limbs</p> <p>Newcastle University</p> <p>https://gtr.ukri.org/projects?ref=EP%2FR004242%2F1</p>	<p>The research team seeks to employ in vivo experiments, exploratory studies involving able-bodied volunteers and pre-clinical work with people with limb loss. The insight gained from these studies will inform the design of novel algorithms to enable seamless control of prosthetic hands. The programme will culminate in a unifying theory for learning to control prosthetic hands that will be tested in an NHS-approved pre-clinical trial.</p>	<p>EPSRC</p> <p>Feb 18 – Jan 23</p> <p>£1,028,682</p>
<p>Physiologically inspired simulation of sensorineural hearing loss</p> <p>Cardiff University</p> <p>https://gtr.ukri.org/projects?ref=EP%2FR010722%2F1</p>	<p>This project will construct sounds that simulate the auditory experience associated with different types of hearing impairment and demonstrate that it can reproduce the patterns of problems experienced by hearing-impaired listeners.</p>	<p>EPSRC</p> <p>Mar 18 – Mar 21</p> <p>£298,015</p>
<p>Shape sensing textile for orthotics – SmartSensOtics</p> <p>University of Sussex</p> <p>https://gtr.ukri.org/projects?ref=EP%2FR013837%2F1</p>	<p>This research team aims to develop a smart, portable and stretchable textile sleeve with integrated sensors connected to a smartphone to realise an entirely new versatile and wearable body-shape imaging technique. The digital limb models can then be used for the computer-aided fabrication of customised orthotics without the need for significant infrastructure.</p>	<p>EPSRC</p> <p>Feb 18 – Jan 21</p> <p>£744,204</p>
<p>Fit-for-purpose, affordable body-powered prostheses</p> <p>University of Salford</p> <p>https://gtr.ukri.org/projects?ref=EP%2FR013985%2F1</p>	<p>This project will bring together an experienced team from across the UK, Uganda and Jordan to create a new body-powered prosthesis that is optimised for adoption by prosthetic services in lower- and middle-income countries and acceptable to users in these countries. This will include establishing methods of fabrication, fitting and evaluation of the prosthesis that are appropriate to lower- and middle-income countries.</p>	<p>EPSRC</p> <p>Feb 18 – Jan 21</p> <p>£1,412,730</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>A step change in LMIC prosthetics provision through computer aided design, actimetry and database technologies</p> <p>University of Southampton</p> <p>https://gtr.ukri.org/projects?ref=EP%2FR014213%2F1</p>	<p>Alongside a team of expert clinicians, academics and policy-makers in Cambodia, this research team aims to conduct two data-technology research studies to develop tools to improve prosthetic and orthotic service access, train clinicians and improve the efficiency of service funding use.</p>	<p>EPSRC</p> <p>Feb 18 – Jan 21</p> <p>£909,511</p>
<p>Low cost through knee prostheses. TaKeuP</p> <p>Imperial College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FR014248%2F1</p>	<p>This research team seeks to develop a low-cost through-knee prosthesis, the initial concept for which has been developed by the applicants through previous work with partners in Cambodia. This will be developed further to create a pathway to support the translation of future technology projects and the development of a route to harness the technology development for those in lower- and middle-income countries for the benefit of healthcare in the UK.</p>	<p>EPSRC</p> <p>Feb 18 – Jan 21</p> <p>£888,571</p>
<p>Engineering a next generation physiological wrist simulator for innovation of rehabilitation protocols and surgical interventions</p> <p>Imperial College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FR020809%2F1</p>	<p>The aim of this project is to create a new custom-made joint motion simulator for the wrist that also includes the finger muscles. This work will create a unique and innovative device that is more realistic and functional by enabling the replication of the motions of the fingers as well as those of the wrist.</p>	<p>EPSRC</p> <p>Apr 18 – Mar 19</p> <p>£100,809</p>
<p>Acoustic signal processing and scene analysis for socially assistive robots</p> <p>Imperial College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FP001017%2F1</p>	<p>The aim of this research is to provide robots and machines with the ability to understand and adapt to the surrounding acoustic environment. Equipping machines with an understanding of the acoustic environment allows a robot to engage in verbal interactions with humans and to potentially provide physical aid, which could facilitate low-cost assistance for people who provide unpaid care as well as for patients who cannot rely on relatives.</p>	<p>EPSRC</p> <p>Jan 17 – Dec 19</p> <p>£330,105</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>ColourSpecs: a wearable colour identification system for people with impaired colour vision</p> <p>University of Dundee</p> <p>https://gtr.ukri.org/projects?ref=EP%2FP013694%2F1</p>	<p>Building on earlier work, the research defined a comprehensive colour-to-visual design space using participants with impaired colour vision. The research identified the best candidate mappings and installed them on a transparent head-mounted display to develop ColourSpecs, and compare this with competing techniques.</p>	<p>EPSRC</p> <p>Feb 17 – Jul 18</p> <p>£100,861</p>
<p>CONSULT: Collaborative Mobile Decision Support for Managing Multiple Morbidities</p> <p>King's College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FP010105%2F1</p>	<p>The research will combine wireless 'wellness' sensors with intelligent software running on mobile devices to support patient decision-making, and, thus, actively engage patients in managing their healthcare. The technology will be evaluated across multiple dimensions in a proof-of-concept study, engaging stroke patients, their carers and medical professionals.</p>	<p>EPSRC</p> <p>Mar 17 – Feb 20</p> <p>£1,381,440</p>
<p>Cross-model interactive tools for inclusive learning</p> <p>University of Bristol</p> <p>https://gtr.ukri.org/projects?ref=EP%2FN00616X%2F1</p>	<p>The aim of this fellowship is to research and develop interactive learning tools to make mixed classrooms more inclusive of visually impaired students.</p>	<p>EPSRC</p> <p>Mar 16 – Feb 21</p> <p>£716,108</p>
<p>Empowering next-generation implantable neural interfaces</p> <p>Imperial College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FM020975%2F1</p>	<p>This fellowship is focused on next-generation neural interfaces that can be used with assistive technologies such as prostheses or mobility aids.</p>	<p>EPSRC</p> <p>Aug 15 – Jul 20</p> <p>£1,016,560</p>
<p>Environment-aware listener-optimized binaural enhancement of speech (E-LOBES)</p> <p>Imperial College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FM026698%2F1</p>	<p>The research team extended existing monaural binary masking techniques to provide binaural speech enhancement while preserving the interaural time and level differences that are critical to the spatial separation of sound sources. The researchers also developed a metric able to predict the intelligibility of a speech signal for a binaural listener with normal or impaired hearing in the presence of competing noise sources.</p>	<p>EPSRC</p> <p>Sep 15 – Jan 19</p> <p>£983,624</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>EPSRC-NIHR HTC partnership award plus funds: technology network-plus on devices for surgery and rehabilitation</p> <p>Imperial College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FN027132%2F1</p>	<p>The aim of the project and proposed network is to establish a forum for surgical innovation with seamless integrations of engineering research, clinical translation and industrial development. The network will cover three research areas that have similar challenges for research but need to be examined in different clinical contexts: sensing for improved perioperative care, smart surgical devices, and assistive devices and robots to facilitate rehabilitation in community or home care settings.</p>	<p>EPSRC</p> <p>Sep 16 – Sep 19</p> <p>£507,552</p>
<p>GetAMoveOn: transforming health through enabling mobility</p> <p>University College London Interaction Centre</p> <p>https://ucl.ac.uk/research/health-and-well-being/gamo</p>	<p>In this project, the researchers aim to use movement to improve health through developing innovative technology. They aim to concentrate on three specific groups: school children, office workers and older people.</p>	<p>EPSRC</p> <p>Jun 16 – May 20</p> <p>£923,685</p>
<p>Hub for device personalisation in the treatment of congenital diseases</p> <p>University College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FN02124X%2F1</p>	<p>This project will drive the development of bespoke devices and tailored therapies for children and young adults born with physical defects. Engineering methods and computer virtual reality will be used to study the shape of the patient defects and design new devices that can be easily tailored to individual needs.</p>	<p>EPSRC</p> <p>Apr 16 – Mar 21</p> <p>£1,002,830</p>
<p>I-DRESS</p> <p>University of the West of England</p> <p>https://gtr.ukri.org/projects?ref=EP%2FN021703%2F1</p>	<p>The project aims to develop a robotic system providing disabled users with proactive assistance with getting dressed. The research is being undertaken with partner organisations in Spain and Switzerland.</p>	<p>EPSRC</p> <p>Dec 15 – May 19</p> <p>£305,523</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Inclusive Digital Content for People with Aphasia (INCA)</p> <p>City, University of London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FP025587%2F1</p>	<p>The aim of this project is to investigate, co-design and trial digital content tools for people with aphasia. The research will explore a blended approach to digital content, intertwining the digital and physical worlds, and will have an emphasis on co-creation with users.</p>	<p>EPSRC</p> <p>Jul 17 – Jun 20</p> <p>£496,294</p>
<p>Machine learning for hearing aids: intelligent processing and fitting</p> <p>University of Cambridge</p> <p>https://gtr.ukri.org/projects?ref=EP%2FM026957%2F1</p>	<p>Current hearing aids have two major limitations: hearing-aid audio processing strategies are inflexible and do not adapt sufficiently to the listening environment; and hearing tests and hearing-aid fitting procedures do not allow for a reliable diagnosis of the underlying nature of the hearing loss and frequently lead to poorly fitting devices. This research will use new machine-learning methods to revolutionise both of these aspects of hearing-aid technology.</p>	<p>EPSRC</p> <p>Dec 15 – Nov 18</p> <p>£565,347</p>
<p>New pathways to hearing: a multisensory noise reducing and palate based sensory substitution device for speech perception</p> <p>University College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FM026965%2F1</p>	<p>Commercially available correction for hearing loss is mostly limited to hearing aids and cochlear implants. These devices suffer from signal processing and sensory transduction limitations. This research aims to address these limitations through multisensory remapping.</p>	<p>EPSRC</p> <p>Dec 15 – Dec 18</p> <p>£700,744</p>
<p>Novel bio-inspired ‘smart’ joint for prosthetics and robotics lower limbs</p> <p>University of the West of England</p> <p>https://gtr.ukri.org/projects?ref=EP%2FP022588%2F1</p>	<p>The researchers will investigate the feasibility and development of a novel bio-inspired prosthetic joint that will exploit the important features of the human knee joint. An investigation will be undertaken to compare the ‘smart’ joint’s energy consumption and gait efficiency with that of current prosthetics.</p>	<p>EPSRC</p> <p>Apr 17 – Apr 19</p> <p>£101,090</p>

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<p>Novel directional microphone design for speech enhancement in complex environments</p> <p>University of Strathclyde</p> <p>https://gtr.ukri.org/projects?ref=EP%2FM026701%2F1</p>	<p>The primary objective of the project was to create a hearing aid system involving microphones that can reduce or control unwanted noises, and focus the hearing aid on only the sound arriving from in front of the user. 3D printing was used to create new ways of mounting the microphones in hearing aids.</p>	<p>EPSRC</p> <p>Jul 15 – Jun 18</p> <p>£432,134</p>
<p>Osteoarthritis Technology NetworkPlus (OATech+): a multidisciplinary approach to the prevention and treatment of osteoarthritis</p> <p>Cardiff University</p> <p>https://gtr.ukri.org/projects?ref=EP%2FN027264%2F1</p>	<p>A network of academics, clinicians and industry representatives is looking to provide high-level evidence of the efficacy and safety of medical devices relating to musculoskeletal disorders and osteoarthritis through clinical studies and with a high degree of user involvement. The studies will involve biology, engineering and biomechanics. The aim is to identify the challenges to technology development, which will help to ensure that future studies are conducted with the latest scientific advances incorporated.</p>	<p>EPSRC</p> <p>Oct 16 – Sep 20</p> <p>£968,486</p>
<p>Personalised fitting and evaluation of hearing aids with EEG responses</p> <p>University of Southampton</p> <p>https://gtr.ukri.org/projects?ref=EP%2FM026728%2F1</p>	<p>The project aimed to improve the personalised fitting of hearing aids. The research sought to achieve an assessment of hearing function and speech processing in the brain by the computer analysis of electroencephalographic (EEG) responses to complex real-world signals.</p>	<p>EPSRC</p> <p>Jul 15 – Jun 18</p> <p>£908,086</p>
<p>Piezoelectric nano-fibre based acoustic sensors for artificial cochlear</p> <p>University College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FM026884%2F1</p>	<p>This research sought to enable a potential new generation of cochlear implants based on piezoelectric nano-fibre with high performance and prolonged implantation. This could improve the listening abilities offered by cochlear implants.</p>	<p>EPSRC</p> <p>Sep 15 – Aug 18</p> <p>£870,392</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Robot House 2.0 – infrastructure for the study of smart home and autonomous robotic systems</p> <p>University of Hertfordshire</p> <p>https://gtr.ukri.org/projects?ref=EP%2FP020577%2F1</p>	<p>The funding extends the functionalities of the robotics hardware in the existing Robot House, creating the Robot House 2.0 and making it accessible to other research groups.</p>	<p>EPSRC</p> <p>Mar 17 – Mar 19</p> <p>£578,051</p>
<p>A robot training buddy for adults with autism spectrum disorder (ASD)</p> <p>Heriot-Watt University; University of Glasgow</p> <p>https://gtr.ukri.org/projects?ref=EP%2FN035305%2F1</p> <p>https://gtr.ukri.org/projects?ref=EP%2FN034546%2F1</p>	<p>The project will develop a socially competent robot training buddy that will help adults with ASD to better deal with social signals in work-related scenarios.</p>	<p>EPSRC</p> <p>Nov 16 – Apr 20</p> <p>£1,067,328</p>
<p>SCAMPI: Self-Care Advice, Monitoring, Planning and Intervention</p> <p>City, University of London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FP010024%2F1</p>	<p>The consortium is developing a new form of computerised toolkit that will allow someone living in their own home with a chronic condition, together with their relatives, carers and healthcare professionals, to self-manage both their care of the condition and life with it. People will interact with the new toolkit through a new form of intelligent visual care plan, called VIZ-CARE.</p>	<p>EPSRC</p> <p>Mar 17 – Feb 20</p> <p>£1,006,000</p>
<p>Sensor Platform for Healthcare in a Residential Environment (SPHERE)</p> <p>University of Bristol</p> <p>https://gtr.ukri.org/projects?ref=EP%2FK031910%2F1</p>	<p>This interdisciplinary research collaboration will develop a number of different sensors that will combine to build a picture of how we live in our homes. This information can then be used to identify issues that might indicate a medical or well-being problem.</p>	<p>EPSRC</p> <p>Oct 13 – Sep 18</p> <p>£11,683,500</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>Towards bespoke bio-hybrid prosthesis: manufacturing bio-inductive interfaces in 3D</p> <p>University of Leeds</p> <p>https://gtr.ukri.org/projects?ref=EP%2FL02067X%2F2</p>	<p>The researchers envisage a prosthesis that will respond to biological feedback via a tissue engineered abiotic/biotic conduit between the artificial prosthetic and remaining biological muscle and nerves.</p>	<p>EPSRC</p> <p>Apr 16 – Jun 18</p> <p>£525,896</p>
<p>Towards visually-driven speech enhancement for cognitively-inspired multi-modal hearing-aid devices (AV-COGHEAR)</p> <p>University of Stirling</p> <p>https://gtr.ukri.org/projects?ref=EP%2FM026981%2F1</p>	<p>This project aims to develop a new generation of hearing aid technology that extracts speech from noise by using a camera to see what the talker is saying. The wearer of the device will be able to focus their hearing on the target talker and the device will filter out competing sound.</p>	<p>EPSRC</p> <p>Oct 15 – Sep 18</p> <p>£418,262</p>
<p>Enabling Technologies for Sensory Feedback in Next-Generation Assistive Devices (SenseBack)</p> <p>Newcastle University and Össur</p> <p>https://gtr.ukri.org/projects?ref=EP%2FN023080%2F1</p>	<p>Researchers are developing a number of important technologies to restore sensation to individuals who use prosthetic legs. The translational alliance will work together to translate the technologies developed in the SenseBack project to lower limb prostheses.</p>	<p>EPSRC</p> <p>Jun 16 – May 19</p> <p>£240,010</p>
<p>Wearable soft robotics for independent living</p> <p>University of Bristol</p> <p>https://gtr.ukri.org/projects?ref=EP%2FM026388%2F1</p>	<p>The research team developed soft robotic clothing to enable those with mobility impairments, disabilities and age-related weakness to move easily and unaided and to live independently and with dignity. Focus groups have been held in Bristol Robotics Laboratory.</p>	<p>EPSRC</p> <p>Jul 15 – Jun 18</p> <p>£2,026,740</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Environment and Listener Optimised Speech Processing for Hearing Enhancement in Real Situations (ELO-SPHERES)</p> <p>Imperial College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FS035842%2F1</p>	<p>This project aims to better understand the problems hearing impaired listeners experience in noisy, multiple-talker conversations, particularly (1) their ability to attend to and recognise speech coming from different directions while listening through binaural aids and (2) their use of audio-visual cues.</p>	<p>EPSRC</p> <p>Jul 19 – Jun 22</p> <p>£587,008</p>
<p>EPSRC Centre for Doctoral Training in Prosthetics and Orthotics</p> <p>University of Salford</p> <p>https://gtr.ukri.org/projects?ref=EP%2FS02249X%2F1</p>	<p>The EPSRC Centre for Doctoral Training in Prosthetics and Orthotics has been established. This will address the national, and global, shortage of suitably skilled engineers and scientists to become future innovators in P&O technologies. The Centre will support a minimum of 58 doctoral students, whose studies will enable them to become leaders of the future.</p>	<p>EPSRC</p> <p>Apr 19 – Sep 27</p> <p>£5,526,315</p>
<p>FREEHAB: accessible, comfortable and adaptable wearable rehabilitation and assist devices</p> <p>University of Bristol</p> <p>https://gtr.ukri.org/projects?ref=EP%2FS026096%2F1</p>	<p>The FREEHAB Healthcare Impact Partnership will develop soft wearable rehabilitative devices to assist rehabilitation in age-related musculoskeletal and neurological conditions.</p>	<p>EPSRC</p> <p>May 19 – Apr 22</p> <p>£1,181,154</p>
<p>Personalised approach to restoration of arm function in people with high-level tetraplegia</p> <p>Keele University</p> <p>https://gtr.ukri.org/projects?ref=EP%2FR035091%2F1</p>	<p>This project aims to develop efficient methods to personalise assistive technology for restoring arm function in people with high-level spinal cord injury. Using a combination of electrical stimulation and mobile arm supports, the project will use computational models specific to the individual's functional limitations to produce patient-specific interventions.</p>	<p>EPSRC</p> <p>Nov 18 – Oct 21</p> <p>£386,807</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>Using artificial intelligence to share control of a powered-wheelchair between a wheelchair user and an intelligent sensor system</p> <p>University of Portsmouth</p> <p>https://gtr.ukri.org/projects?ref=EP%2FS005927%2F1</p>	<p>Research will focus on the novel use of sensors and inventing new shared control systems and artificial intelligence (AI) to have a significant and positive impact on the lives of both current and potential powered-wheelchair users.</p>	<p>EPSRC</p> <p>Dec 18 – Apr 22</p> <p>£465,562</p>
<p>Towards a multisensory hearing aid: engineering synthetic audiovisual and audiotactile signals to aid hearing in noisy backgrounds</p> <p>Imperial College London</p> <p>https://gtr.ukri.org/projects?ref=EP%2FR032602%2F1</p>	<p>The research vision of this fellowship is to develop a radically different technology for assisting people with hearing impairments to understand speech in noisy environments, namely through simplified visual and tactile signals that are engineered from a speech signal and that can be presented congruently to the sound.</p>	<p>EPSRC</p> <p>Jan 19 – Dec 23</p> <p>£1,029,424</p>
<p>Studentships</p>	<p>EPSRC has funded several studentships with relevance to the area of assistive technologies.</p>	<p>EPSRC</p> <p>2018–19</p>
<p>Seeing what they see: compensating for cortical visual dysfunction in Alzheimer’s disease</p> <p>University College London</p> <p>www.ucl.ac.uk/dementia-vision</p>	<p>This project’s objective is to demonstrate that helping people with Alzheimer’s disease to interact more successfully with their visual environment at home can lead to a significant improvement in the well-being and quality of life of both patients and carers. The project will measure the effect of visual aids and strategies on a person’s ability to move around the environment and on their quality of life. The design of the visual aids and compensatory strategies themselves will be based on a combination of patient/ carer interviews and cutting-edge scientific understanding of the nature of visual impairments.</p>	<p>Economic and Social Research Council (ESRC)/NIHR</p> <p>Apr 14 – Mar 18</p> <p>£2,115,953</p>

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<p>Comprehensive approach to modelling outcome and cost impacts of interventions for dementia (MODEM)</p> <p>London School of Economics</p> <p>www.modem-dementia.org.uk</p>	<p>This project will develop a comprehensive set of models to estimate current and future needs, outcomes and costs in dementia care, drawing on methods from a range of disciplines, with the involvement of people with dementia and their carers. An important outcome will be a publicly available legacy model to enable individuals and stakeholders to make their own projections of needs for care and support.</p>	<p>ESRC/NIHR</p> <p>Mar 14 – Nov 18</p> <p>£2,613,207</p>
<p>Understanding and alleviating reading difficulties in older adults</p> <p>University of Leicester</p> <p>https://gtr.ukri.org/projects?ref=ES%2FL010836%2F1</p>	<p>This project will explore issues with reading and eye movement control, with the intention of more fully revealing the basis of differences in reading ability and to inform efforts to ameliorate the difficulties that older readers experience.</p>	<p>ESRC</p> <p>Nov 14 – Nov 18</p> <p>£158,162</p>
<p>The MARQUE project: Managing Agitation and Raising QUality of Life. A project to improve quality of life in people with moderate or severe dementia</p> <p>University College London</p> <p>www.ucl.ac.uk/psychiatry/marque/about-the-project</p>	<p>This programme aims to reduce agitation and increase quality of life in people with dementia, increasing knowledge, including how to implement findings, to improve the quality of life of those living with dementia. The research will involve observing and interviewing a wide range of people with dementia and those who care for them at home, in care homes and at the end of life to better understand how agitation is currently managed, the barriers to good practice and how to improve care, and then to devise and test interventions.</p>	<p>ESRC/NIHR</p> <p>Mar 14 – Feb 19</p> <p>£3,269,382</p>
<p>Neighbourhoods and dementia: a mixed methods study</p> <p>University of Manchester</p> <p>www.neighbourhoodsanddementia.org</p>	<p>This project developed a set of core outcome measures that will involve people with dementia and their carers in deciding what measures and priorities are important for them, including what makes a dementia-friendly neighbourhood. Technology was used to help couples, where one person is living with dementia, to better self-manage the condition and, more importantly, their relationship; and to pilot a digitalised life story intervention for Deaf people (British Sign Language users) who live with dementia.</p>	<p>ESRC/NIHR</p> <p>May 14 – Apr 19</p> <p>£4,022,446</p>

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<p>PRIDE – Promoting Independence in Dementia</p> <p>University of Nottingham</p> <p>www.institutemh.org.uk/research/projects-and-studies/current-studies/protect/246-the-pride-study</p>	<p>This study aims to identify how social and lifestyle changes may help to reduce the risk of developing dementia and disability, to better understand the social consequences of dementia and to develop and evaluate an effective social intervention to support the independence and quality of life of people living with early-stage dementia and their carers.</p>	<p>ESRC/NIHR</p> <p>Mar 15 – Feb 20</p> <p>£2,931,365</p>
<p>Sustainable care: connecting people and systems</p> <p>University of Sheffield</p> <p>http://circle.group.shef.ac.uk/sustainable-care/</p>	<p>This programme concentrates on the care needs of adults living at home with chronic health problems or disabilities, and seeks sustainable solutions to the UK's contemporary 'crisis of care'. This includes assessing the potential of emerging technologies to enhance care system sustainability; developing case studies of emerging home care models; and exploring how care technologies can be integrated to support working carers, ensuring well-being outcomes across caring networks.</p>	<p>ESRC</p> <p>Oct 17 – Mar 21</p> <p>£2,055,243</p>
<p>Sustainable Care Innovation Fellowship: accelerating implementation and uptake of new technologies to support ageing in place</p> <p>University of Sheffield</p> <p>http://circle.group.shef.ac.uk/sustainable-care/</p>	<p>This research project will involve collaborating with industry partners to help them address challenges in the implementation and uptake of new technologies to support sustainable arrangements for ageing in places capable of delivering well-being outcomes for older people.</p>	<p>ESRC</p> <p>Jan 18 – Jan 21</p> <p>£248,697</p>
<p>Studentships</p> <p>Information on specific awards is not in the public domain</p>	<p>Studentships have been funded that are relevant to assistive technology research in the areas of speech impairment in children, healthy independent ageing, and dementia.</p>	<p>ESRC</p> <p>Oct 16 – Sep 22</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>EVOTION – Evidenced-based management of hearing impairments: public health policy making based on fusing big data analytics and simulation</p>	<p>Currently, the evidential base for forming hearing loss policies is limited. The EVOTION project proposes to address this by collecting and analysing a big set of heterogeneous data, including hearing-aid usage, audiological, physiological, cognitive, clinical and medication, personal, behavioural, lifestyle, occupational and environmental data.</p>	<p>European Commission (EC) Feb 18 – Nov 18</p>
<p>An assistive powered wheelchair: stage 1 – evaluating users’ driving characteristics. A non-interventional study</p>	<p>The aim of this project is to assist the powered-wheelchair user to drive more safely and confidently, thereby enhancing their independence and quality of life. The stages are (1) monitor user well-being and effect of medication by recording and analysing joystick movements, (2) provide the powered-wheelchair user with information about obstacles and (3) provide driving assistance to help the user avoid collisions.</p>	<p>EC Jan 18 – Dec 20</p>
<p>A Delphi study to seek consensus regarding research priorities in social care technologies Bangor University</p>	<p>The aim of this research is to seek consensus on future research priorities relating to assistive technologies and social care using a Delphi technique.</p>	<p>Health and Care Research Wales (HCRW) Jan 19 – Dec 19 £60,000</p>
<p>Mobility and quality of life: improving methods of economic evaluation of assistive technology for adults and children with impaired mobility Bangor University http://cheme.bangor.ac.uk/mobqol</p>	<p>The project will use qualitative and quantitative research methods to develop a new preference-based instrument to measure the quality of life of people who use wheelchairs and mobility aids.</p>	<p>HCRW Sep 16 – Aug 19 £302,810</p>

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<p>A connected digital process for reproducible 3D printing mass manufacture</p> <p>Project Andiamo Ltd</p> <p>https://gtr.ukri.org/projects?ref=103465</p>	<p>In this project, the researchers will use existing 3D printed ankle-foot orthoses technology and aim to develop their current integration and specialisations for medical device production capabilities.</p>	<p>Innovate UK</p> <p>Sep 17 – Apr 19</p> <p>£568,365</p>
<p>ACTIPH – Additively Constructed Transtibial Intelligent Prosthetic</p> <p>Blatchford Products Ltd</p> <p>https://gtr.ukri.org/projects?ref=103674</p>	<p>This project aims to develop a robotic prosthetic foot to emulate lost muscles by integrating technologies including additive manufacturing, hydraulic actuation, advanced sensing and microprocessor control.</p>	<p>Innovate UK</p> <p>Dec 17 – May 19</p> <p>£330,784</p>
<p>Aergo: responsive postural support system</p> <p>Aergo Ltd</p> <p>https://gtr.ukri.org/projects?ref=105128</p>	<p>The aim of this project is to create an adaptable postural support system by building on a network of patent-pending air cells. The remote-controlled system provides adjustable pressure-relief for a range of physical conditions and is the first device of its kind to grow with the user through its expandable frame. The aim is to empower users to control their own care.</p>	<p>Innovate UK</p> <p>Mar 19 – Feb 20</p> <p>£49,899</p>
<p>AI (artificial intelligence) based healthcare system for elderly people – iChair</p> <p>Innovative Technology and Science</p> <p>https://gtr.ukri.org/projects?ref=104312</p>	<p>The aim of this research is to develop a telemedicine smart wheelchair that allows patients and caregivers to access patient data in real time. Using patient data collected from sensors attached to the wheelchair, AI algorithms will analyse the data to diagnose any associated conditions. The iChair project aims to develop and demonstrate a cost-effective wheelchair connectivity and remote monitoring technology that significantly increases user independence (mobility) and freedom (quality of living) while providing caregivers with peace of mind and convenience.</p>	<p>Innovate UK</p> <p>Nov 18 – Oct 20</p> <p>£344,543</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Automated data manipulation for streamlined biomechanically optimised manufacture of orthoses</p> <p>Project Andiamo Ltd</p> <p>https://gtr.ukri.org/projects?ref=103538</p>	<p>This project aims to address the current limitations of orthotics services by taking design and manufacture outside the acute setting and changing the current orthosis manufacturing process.</p>	<p>Innovate UK</p> <p>Sep 17 – Sep 19</p> <p>£390,095</p>
<p>e-Porthos</p> <p>KW Special Projects Ltd</p> <p>https://gtr.ukri.org/search/project?term=103456</p>	<p>This project brings together the University of Newcastle and Peacocks Medical Group with KW Special Projects to develop foot orthoses, which are medical devices prescribed to patients who have a foot disorder. The devices are designed to re-align the foot or provide comfort to patients, and they take the form of an insole that fits between the foot and the shoe. The end goal of the project is a functioning printing process using augmented reality to print foot orthoses more quickly than at present.</p>	<p>Innovate UK</p> <p>Aug 17 – Feb 19</p> <p>£520,649</p>
<p>Gameball: a novel platform to provide enjoyable and affordable hand and arm rehabilitation following a stroke</p> <p>Neurofenix Ltd</p> <p>https://gtr.ukri.org/projects?ref=104188</p>	<p>This project aims to address the challenges faced by stroke survivors. It will create an innovative, digital approach to stroke rehabilitation through a solution that offers an easy-to-use hand-controller connected to an innovative software platform, allowing all-in-one upper limb training through uniquely designed rehabilitation games, an analytics platform that tracks patient progress and a supportive online community.</p>	<p>Innovate UK</p> <p>Jan 18 – Mar 19</p> <p>£404,348</p>
<p>Intelligent modular robotic exosuit</p> <p>Mechatech Ltd</p> <p>https://gtr.ukri.org/projects?ref=103684</p>	<p>This project involves the development of a robotic exoskeleton prototype that will be used as a base for further research into and development of assistive and enhance robotic exoskeletons.</p>	<p>Innovate UK</p> <p>Aug 17 – Nov 18</p> <p>£240,876</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>Large-scale printed sensors for security, healthcare and smart home control</p> <p>Bare Conductive Ltd</p> <p>https://gtr.ukri.org/projects?ref=132977</p>	<p>The aim of this project is to develop a sensing product using existing large-scale printed capacitive proximity sensor technologies to create a falls-detecting product for elderly individuals and carers, particularly in crowded, hazardous or isolated spaces. The primary economic impact of the project will be a cost saving from reducing the incidence of falls in the home or in other care situations.</p>	<p>Innovate UK</p> <p>Mar 18 – Feb 19</p> <p>£89,996</p>
<p>Monitoring physical frailty in older adults' homes with a new walking speed sensor; from prototype to proven concept</p> <p>'Johnnie' Johnson Housing Trust Ltd</p> <p>https://gtr.ukri.org/projects?ref=133400</p>	<p>This research will address the problem of physical frailty and the consequences it has by developing of a validated walking-speed sensor that can be placed in someone's home. It measures walking speed every time the person passes the sensor. The sensor will be evaluated in real life with 20 older people living independently in a sheltered housing scheme, and how the sensor behaves over a longer period will be studied.</p>	<p>Innovate UK</p> <p>Jan 18 – Dec 18</p> <p>£56,325</p>
<p>Newton Fund – A-PATH: affordable preventative and assistive technology for healthcare</p> <p>Innovative Technology and Science</p> <p>https://gtr.ukri.org/projects?ref=103708</p>	<p>Based on the research output of a collaboration between UK and Indian organisations, this project aims to develop affordable wearable bio-sensing and human motion monitoring suits and passive and active exoskeletons to assist essential human motions.</p>	<p>Innovate UK</p> <p>Aug 17 – Jul 19</p> <p>£345,606</p>
<p>Newton Fund – YOUBAN: robotic solutions to assist the elderly in daily mobility activities and using robot companionship to offset loneliness and isolation</p> <p>Motion Robotics Ltd</p> <p>https://gtr.ukri.org/projects?ref=102871</p>	<p>The aim of this project is to develop intelligent mobility assistance that can maximise the functional capabilities of elderly people. This will be done by creating three different robots: one to address loneliness by providing companionship and a pet-type presence, one that will be a mobility device for shopping and child-carrying and that is motorised for maximum ease and safety, and a small four-wheel scooter with extra-intelligent driving security.</p>	<p>Innovate UK</p> <p>Mar 17 – Jul 19</p> <p>£667,185</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Non-invasive telemetric sensing for lower leg amputee surface skin management</p> <p>Bio-Flex Yarns Ltd</p> <p>https://gtr.ukri.org/projects?ref=103947</p>	<p>To address the issue of skin complications that lower limb amputees experience when wearing a prosthesis, the research will work to develop a limb monitoring system to alert for skin complications using technologies in passive thermal regulation, non-invasive monitoring of physiological parameters, and an internet of things-based data analysis. The individual amputee will have personal information on their prosthesis, direct involvement in care, and a transformed daily living experience.</p>	<p>Innovate UK</p> <p>Feb 18 – Mar 20</p> <p>£506,680</p>
<p>Next-generation hearing assistance system</p> <p>Ampetronic Ltd</p> <p>https://gtr.ukri.org/projects?ref=103604</p>	<p>This research aims to develop a new audio distribution system for public hearing assistance. The new platform will dramatically increase the adoption of hearing assistance in public environments.</p>	<p>Innovate UK</p> <p>Nov 11 – Mar 19</p> <p>£683,033</p>
<p>Proof-of-concept and technical evaluation of innovative, wearable vision enhancement device</p> <p>Vision Technologies Ltd</p> <p>https://gtr.ukri.org/projects?ref=103865</p>	<p>This project aims to develop a device that has the appearance of regular spectacles but uses cutting-edge technology to project an enhanced rendering of what someone is looking at in front of their eyes.</p>	<p>Innovate UK</p> <p>Feb 17 – Mar 19</p> <p>£414,803</p>
<p>Quick fitting of prosthetic sockets for above knee amputees (QuickFit)</p> <p>LusTech Ltd</p> <p>https://gtr.ukri.org/projects?ref=133657</p>	<p>This project aims to change the current subjective approach of developing prosthetic socket into a science-based prosthetic socket provision technique so that a good-fit socket can be designed and fabricated within one day. It aims to develop a new application of the revolutionary QTSS sensors in healthcare and, using new biomechanical analytical models, the vision is to create a new procedure for prosthetic socket design.</p>	<p>Innovate UK</p> <p>Oct 18 – Sep 20</p> <p>£972,982</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>Smart Open Community Integrated Assisted Living ('SOCIAL')</p> <p>Cartographix Ltd</p> <p>https://gtr.ukri.org/projects?ref=133836</p>	<p>This project aims to create a solution that will provide the UK's elderly population with a means of improved independence and community engagement through a solution that combines big data analytics and smartphone sensors. It hopes to provide benefits such as improved affordability, extended functionality and potential to achieve wider health benefits.</p>	<p>Innovate UK</p> <p>May 19 – Feb 20</p> <p>£35,829</p>
<p>TaCT – Tracking and Communication Technology</p> <p>Entotem Ltd</p> <p>https://gtr.ukri.org/projects?ref=105253</p>	<p>The aim of this 12-month project is to enable personal communications and monitoring for vulnerable and older people using low-power radio tags and precise location information.</p>	<p>Innovate UK</p> <p>Jun 19 – May 20</p> <p>£185,191</p>
<p>Low-cost personalised instrumented clothing with integrated FES electrodes for upper limb rehabilitation</p> <p>University of Southampton</p> <p>https://gtr.ukri.org/projects?ref=MR%2FN027841%2F1</p>	<p>The aim of the research is to develop and evaluate personalised instrumented clothing with integrated functional electrical stimulation electrodes for upper limb rehabilitation for people who have experienced stroke.</p>	<p>Medical Research Council (MRC)</p> <p>Aug 16 – Feb 19</p> <p>£882,746</p>
<p>Non-invasive brain stimulation to suppress pathological tremors</p> <p>University of Birmingham</p> <p>https://gtr.ukri.org/projects?ref=MR%2FN003446%2F2</p>	<p>Tremor is a disabling symptom in many movement disorders, estimated to affect over 3.4 million people in the UK alone. The lack of any clear pathophysiology means that no new interventional tools have been developed for the treatment of tremor in the last 20 years. The objective of this research is to develop a non-invasive form of electrical stimulation as a realisable therapy for those with disabling tremors.</p>	<p>MRC</p> <p>Sep 17 – Mar 19</p> <p>£246,362</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Sensory system abnormalities in childhood dystonia/dystonic cerebral palsy – are sensory networks modulated by deep brain stimulation?</p> <p>King's College London</p> <p>https://gtr.ukri.org/projects?ref=MR%2FP006868%2F1</p>	<p>This study's aim is to compare changes in sensorimotor cortex EEG activity in relation to a sensory or sensorimotor task in children with different types of dystonia and to investigate whether or not such changes are related to deep brain stimulation.</p>	<p>MRC</p> <p>Nov 16 – Aug 20</p> <p>£408,778</p>
<p>Brain machine interfaces based on subcortical LFP signals for neuroprosthetic control and neurofeedback therapy</p> <p>University of Oxford</p> <p>https://gtr.ukri.org/projects?ref=MR%2FP012272%2F1</p>	<p>This work will establish the foundations for novel brain-machine interfaces based on signals recorded from deep brain regions that contain rich information related to movement intention and have been proven to be stable over time. The new framework will be used to control a prosthetic hand with graded gripping force to provide neurofeedback training to reduce symptoms in Parkinson's disease, and to study the role of basal ganglia in the control and learning of movements.</p>	<p>MRC</p> <p>Aug 17 – Aug 20</p> <p>£506,448</p>
<p>Auditory learning and development</p> <p>University of Nottingham</p> <p>https://gtr.ukri.org/projects?ref=MC_UU_00010%2F3</p>	<p>Findings from this research team highlights the need for an individualised approach to training and rehabilitation. They also provide converging evidence that auditory perceptual abilities in younger and older populations depend on cognitive factors such as attention, working memory and general IQ. Aspects of cognition, and in particular attention, appear to be more important than bottom-up channel sharpening to improve perception through training. These findings inform work to appropriately tailor training programmes to improve speech perception in children with auditory and language-learning disorders, but also in older hearing-impaired individuals and cochlear-implant users.</p>	<p>MRC</p> <p>May 16 – Mar 22</p> <p>£882,450</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>Temporally patterned closed-loop stimulation for therapy of brain disorders</p> <p>University of Oxford</p> <p>https://gtr.ukri.org/projects?ref=MC_UU_12024%2F1</p>	<p>This team will record the rhythmic brain activity and use its features to decide when and how to stimulate in a way that will further increase normal movements and decrease side effects. They will use the strength of rhythmic activity to decide when to turn the stimulation on and off. Second, they will time a pulse of electricity on a specific part of the rhythm to improve movements as efficiently as possible.</p>	<p>MRC</p> <p>Mar 15 – Mar 20</p> <p>£2,292,000</p>
<p>Auditory scene analysis (ASA) in acoustic and electric hearing</p> <p>University of Cambridge</p> <p>https://gtr.ukri.org/projects?ref=MC_UU_00005%2F3</p>	<p>This research team will use a combination of behavioural and electrophysiological techniques to (1) study the neural basis of ASA in normal-hearing listeners, (2) investigate its modulation by cognitive processes such as attention and language processing, (3) investigate why it is impaired in cochlear implant (CI) patients and (4) develop methods of improving auditory scene analysis and other aspects of hearing by CI users.</p>	<p>MRC</p> <p>Jun 17 – Mar 22</p> <p>£321,000</p>
<p>Adaptive processing of spoken language</p> <p>University of Cambridge</p> <p>https://gtr.ukri.org/projects?ref=MC_UU_00005%2F5</p>	<p>The aim of this project is to use behavioural experiments and multimodal functional imaging to understand the brain mechanisms that allow healthy adult listeners to adjust to and learn from encounters with different forms of challenging spoken language. A better understanding of these mechanisms will help us understand the listening abilities of language users and to understand and remediate disorders of spoken language following sensory impairment, brain injury or developmental disorders.</p>	<p>MRC</p> <p>Jun 17 – Mar 22</p> <p>£305,000</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Multi-modal cue integration for auditory spatial location by normal-hearing and hearing-impaired listeners</p> <p>University of Nottingham</p> <p>https://gtr.ukri.org/projects?ref=MR%2FS002898%2F1</p>	<p>This programme will use cutting-edge auditory experiments to answer two key questions. First, how does the auditory system join the multiple cues to location in complex, dynamic, multi-sound, audio-visual listening situations? Second, how does hearing impairment and aided listening affect this? Insights gained in this programme may help us to understand better how spatial hearing works in real, everyday listening, and will help inform how future hearing aids might be designed to improve spatial hearing.</p>	<p>MRC</p> <p>Apr 18 – Mar 22</p> <p>£1,456,854</p>
<p>Understanding and alleviating hearing disability: the contribution of natural behaviours</p> <p>University of Nottingham</p> <p>https://gtr.ukri.org/projects?ref=MR%2FS003576%2F1</p>	<p>For hearing aids to be more helpful, they must adapt to the moment-to-moment changes in situation that are part of people's everyday lives, and the clinical prescribing of hearing aids needs to take more account of each patient's lifestyle and activity patterns. This research will provide new knowledge and insights that can form the basis of future improved hearing-aid technology and prescribing.</p>	<p>MRC</p> <p>Mar 18 – Mar 22</p> <p>£2,883,896</p>
<p>Big CACTUS: clinical and cost effectiveness of aphasia computer therapy compared with usual stimulation or attention control long term post stroke</p> <p>University of Sheffield</p> <p>www.sheffield.ac.uk/scharr/sections/dts/ctru/bigcactus</p>	<p>The study aims to compare outcomes for people with persistent aphasia using computerised speech and language therapy at home with those receiving usual care (standard speech and language therapy provision or general daily communication activity) or attention control (daily completion of puzzle book activities).</p>	<p>NIHR</p> <p>Jan 14 – Jun 18</p> <p>£1,480,713</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>ATTILA trial: assistive technology and telecare to maintain independent living at home for people with dementia</p> <p>South London and Maudsley NHS Foundation Trust</p> <p>www.journalslibrary.nihr.ac.uk/programmes/hta/105002/#/</p>	<p>The study aims to find out if telecare can safely extend the time people with dementia can continue to live independently in their own homes, and whether this is cost-effective. It also aims to find out if it can reduce the number of acute, unplanned admissions to hospital, if it reduces stress in families and unpaid caregivers and if it can increase the quality of life of people living with dementia.</p>	<p>NIHR</p> <p>Jan 13 – Mar 19</p> <p>£1,801,834</p>
<p>RATULS: robot assisted training for the upper limb after stroke</p> <p>Newcastle University</p> <p>https://research.ncl.ac.uk/ratuls/</p>	<p>The aim of the research is to evaluate the impact of robot-assisted training on arm function after stroke.</p>	<p>NIHR</p> <p>Jan 14 – Aug 19</p> <p>£3,094,000</p>
<p>Identifying appropriate symbol communication aids for children who are non-speaking</p> <p>Manchester Metropolitan University</p>	<p>The research aims to determine how to optimise clinicians' decisions about the provision of symbol communication aids.</p>	<p>NIHR</p> <p>Jan 16 – Apr 19</p> <p>£746,650</p>
<p>Individually randomised controlled multi-centre trial to determine the clinical and cost effectiveness of a home-based exercise intervention for older people with frailty as extended rehabilitation following acute illness or injury, including embedded process evaluation</p> <p>Bradford Teaching Hospital</p> <p>www.journalslibrary.nihr.ac.uk/programmes/hta/154307/#/</p>	<p>Frail older people who are admitted to hospital for acute illness are often more frail when they are discharged, which can mean that they are no longer able to perform daily tasks at home or live independently, and may need to move into a care home. The HOPE programme offers older people with frailty a 12-week physiotherapist-delivered exercise programme at home, involving five home visits and seven telephone sessions, as well as a complementary manual.</p>	<p>NIHR</p> <p>Mar 17 – May 21</p> <p>£2,038,930</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Investigating the effectiveness and cost effectiveness of using FITNET to treat paediatric CFS/ME in the UK</p> <p>University of Bristol</p> <p>www.bristol.ac.uk/ccah/research/childdevelopmentdisability/chronic-fatigue/fitnet-nhs/</p>	<p>FITNET is an internet-based treatment for children with chronic fatigue syndrome or ME. It provides cognitive-behavioural therapy through interactive sessions that children receive at home. Children are also required to complete homework relating to the sessions. Children and their parents are supported by cognitive-behavioural therapists.</p>	<p>NIHR</p> <p>May 16 – Apr 22</p> <p>£1,026,403</p>
<p>Does occupational therapist led environmental assessment and modification reduce falls among high-risk older people?</p> <p>University of York</p> <p>www.journalslibrary.nihr.ac.uk/programmes/hta/1449149/#/</p>	<p>The aim of the study is to find out if there is any reduction in falls among older people who are at increased risk of falling and have received an assessment of, and modification to, their home environment by an occupational therapist.</p>	<p>NIHR</p> <p>Jun 16 – Dec 18</p> <p>£718,067</p>
<p>Managing Adolescent first episode Psychosis: a feasibility Study (MAPS)</p> <p>Greater Manchester West Mental Health NHS Foundation Trust</p> <p>www.psychosisresearch.com/research-maps/</p>	<p>The aim of MAPS is to investigate which treatment is best for young people experiencing a first episode of psychosis. The three options are psychological therapy alone (involving cognitive-behavioural therapy and family intervention), antipsychotic medication alone and the two treatments combined. The results will help the researchers decide if a full trial is warranted.</p>	<p>NIHR</p> <p>Mar 17 – June 19</p> <p>£601,481</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>A randomised controlled trial to evaluate the outcomes and mechanisms of a novel digital reasoning intervention for persecutory delusions</p> <p>King's College London</p> <p>www.journalslibrary.nihr.ac.uk/programmes/eme/154821/#/</p>	<p>The aim of the project is to provide therapy to people experiencing paranoia using SlowMo, which helps users to reduce the pace of their thoughts, thereby helping to minimise upsetting or distressing thoughts. The therapy comprises face-to-face sessions supplemented by an interactive website, which provides games and advice, and a mobile phone app.</p>	<p>NIHR</p> <p>Feb 17 – Aug 19</p> <p>£1,324,847</p>
<p>A feasibility study and pilot trial of a modified video-feedback intervention for children and foster carers to improve mental health outcomes of children with reactive attachment disorder.</p> <p>University College London</p> <p>www.journalslibrary.nihr.ac.uk/programmes/hta/1511801/#/</p>	<p>VIPP-Foster-Care is a video feedback intervention to support the carers of those children in foster care who show signs of developing reactive attachment disorder.</p>	<p>NIHR</p> <p>Mar 17 – Aug 19</p> <p>£484,959</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>A tailored, cognitive behavioural approach intervention for mild to moderate anxiety and/ or depression in people with chronic obstructive pulmonary disease (COPD): a randomised controlled trial (TANDEM Tailored intervention for ANxiety and DEpression Management in COPD)</p> <p>Queen Mary University of London</p> <p>www.qmul.ac.uk/blizard/research/centres/centre-for-primary-care-and-public-health/research-projects/tandem/</p>	<p>A new cognitive–behavioural therapy-based intervention, TANDEM, is aimed at reducing anxiety and depression in people with chronic obstructive pulmonary disease, a condition that can lead to repeated admissions to hospital and low quality of life. Many people with this condition experience anxiety and depression but there are currently low uptake rates of pulmonary rehabilitation, which can reduce the symptoms of both. In this project, the effectiveness and cost-effectiveness of TANDEM prior to pulmonary rehabilitation, compared with pulmonary rehabilitation alone, will be assessed.</p>	<p>NIHR</p> <p>Apr 17 – Jun 20</p> <p>£1,677,686</p>
<p>Investigating SOcial Competence and Isolation in children with Autism taking part in LEGO-based therapy clubs In School Environments (I-SOCIALISE)</p> <p>Leeds and York Partnership NHS Foundation Trust</p>	<p>The aim of the project is to use LEGO-based therapy to equip children with ASD with the necessary social skills for day-to-day life. This is done by using LEGO to make social interactions interesting to the children. The researchers want to find out if using LEGO therapy in schools would affect the social competence of children with ASD, as well as reducing their social isolation.</p>	<p>NIHR</p> <p>Jan 17 – Dec 20</p> <p>£971,711</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>A non-inferiority randomised controlled trial comparing the clinical and cost-effectiveness of one-session treatment (OST) with multi-session cognitive behavioural therapy (CBT) in children with specific phobias</p> <p>Leeds and York Partnership NHS Foundation Trust</p> <p>www.sheffield.ac.uk/scharr/sections/dts/ctru/aspect</p>	<p>One-session therapy, an alternative to usual cognitive–behavioural therapy, is currently used successfully with adults but has not yet been tested for use with children. The researchers plan to compare one-session therapy with multi-session cognitive–behavioural therapy for the treatment of specific phobias in children, which can severely affect quality of life.</p>	<p>NIHR</p> <p>Jul 16 – Jun 20</p> <p>£1,371,954</p>
<p>A pragmatic randomised controlled trial of sensory integration therapy versus usual care for sensory processing difficulties in autism spectrum disorder (ASD) in children: impact on behavioural difficulties, skills and socialisation (SenITA)</p> <p>Cardiff University</p> <p>www.cardiff.ac.uk/centre-for-trials-research/research/studies-and-trials/view/senita</p>	<p>It is common for children with ASD to experience difficulty processing sensory information (sight, touch, sound, smell and taste). These problems can affect a child’s ability to socialise and integrate into everyday life, as well as their behaviour. To address this, the researchers aim to find out whether or not delivered sensory integration using occupational therapists improves outcomes compared with usual care.</p>	<p>NIHR</p> <p>Jan 17 – Dec 20</p> <p>£1,193,553</p>
<p>Improving the Wellbeing of people with Opioid Treated CHronic pain; I-WOTCH</p> <p>University of Warwick</p> <p>https://warwick.ac.uk/fac/med/research/ctu/trials/iwotch/</p>	<p>This research seeks to test the effect of the I-WOTCH intervention, a supportive self-management and information/advice about coming off opioid drugs (the I-WOTCH intervention), on how well people can get on with normal activities (e.g. work, family and social life), and opioid use, compared with usual care.</p>	<p>NIHR</p> <p>Sep 16 – May 20</p> <p>£1,575,854</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>PROvision of braces for Patients with knee OsteoArthritis (PROP OA): a randomised controlled trial</p> <p>North Staffordshire Clinical Commissioning Group</p> <p>www.journalslibrary.nihr.ac.uk/programmes/hta/1616003/#/</p>	<p>This project aims to show whether or not wearing a knee brace provides more relief for people with painful osteoarthritis of the knee than just usual primary care (education, advice and exercise), and whether or not this is good value for money for the NHS.</p>	<p>NIHR</p> <p>Sep 18 – Nov 22</p> <p>£1,622,564</p>
<p>Cost-effectiveness of earlier provision of powered mobility interventions for children with mobility limitations: evidence synthesis and economic model</p> <p>Bangor University</p> <p>www.journalslibrary.nihr.ac.uk/programmes/hta/177001/#/</p>	<p>This cluster randomised controlled trial, cost-effectiveness analysis and process evaluation will assess the provision of powered mobility interventions for children with mobility limitations.</p>	<p>NIHR</p> <p>Apr 18 – Jun 19</p> <p>£251,448</p>
<p>The Project About Loneliness and Social networks (PALS) study</p> <p>University of Southampton</p> <p>www.journalslibrary.nihr.ac.uk/programmes/phr/160841/#/</p>	<p>This research will evaluate the acceptability, effectiveness and cost-effectiveness of implementing the GENIE intervention to reduce loneliness and unwanted social isolation among adults in a community setting.</p>	<p>NIHR</p> <p>Mar 18 – Feb 21</p> <p>£976,212</p>
<p>A trial to evaluate an extended rehabilitation service for stroke patients (EXTRAS)</p> <p>Newcastle University</p> <p>www.journalslibrary.nihr.ac.uk/programmes/hta/103701/#/</p>	<p>The development of longer-term stroke rehabilitation services is limited by a lack of evidence of the effectiveness of specific interventions and service models. This study will evaluate a new extended stroke rehabilitation service that will commence when early supported discharge ends.</p>	<p>NIHR</p> <p>Oct 12 – Aug 18</p> <p>£1,646,334</p>

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Project title, contact and URL	Summary	Organisation, duration and funding
<p>Increasing physical activity in children with long-term physical disabilities using a personalised gaming system</p> <p>MIRA Rehab Limited</p>	<p>This study seeks to build substantially on a clinically validated platform (MIRA) to develop a suite of child-centred interactive video games that can contribute to physical and cognitive development. Children with long-term physical and cognitive disabilities will be able to use the games at home, at school and alongside clinicians.</p>	<p>NIHR</p> <p>Jan 18 – Dec 18</p> <p>£149,836</p>
<p>Immersive virtual reality to transform the lives of patients with psychosis</p> <p>Oxford Health NHS Foundation Trust</p> <p>www.psych.ox.ac.uk/research/oxford-cognitive-approaches-to-psychosis-o-cap/projects-1/copy_of_overcoming-persecutory-delusions</p>	<p>Virtual Reality (VR) therapy involves wearing a headset and interacting with computer-generated people. Uniquely, the VR therapy in this study will use a virtual coach to guide the user through their thoughts, feelings and responses in social situations. People with psychosis and NHS staff will work together to develop the VR therapy to ensure the best user experience. A further consultation process will produce a guide to using VR in NHS psychosis services.</p>	<p>NIHR</p> <p>Jun 18 – May 21</p> <p>£395,7119</p>
<p>Virtual reality prosthetics training system</p> <p>Sheffield Teaching Hospitals NHS Foundation Trust</p>	<p>Building on a VR pilot study, this research will focus on building a VR system that improves the current NHS training for patients to enable them to get a myoelectric prosthetic arm. Once they have the arm, patients could also use the system to learn how to become an advanced user. Digital gaming methods will be used to make the training fun. Therapists will be shown how to set up and use the system in clinics. Patients will also be able to take the system home to practise.</p>	<p>NIHR</p> <p>Oct 17 – Mar 20</p> <p>£445,339</p>
<p>Assessment and treatment of patients with amblyopia using interactive binocular computer games</p> <p>Nottingham University Hospitals NHS Trust</p>	<p>This team has developed a treatment for amblyopia that has shown to improve vision. The current system is hospital based, and the aim is to modify it for home use while developing additional improvements.</p>	<p>NIHR</p> <p>Sep 14 – Dec 18</p> <p>£902,919</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Mechanical Muscle Activity with Real-time Kinematics (M-MARK): a novel combination of existing technologies to improve arm recovery following stroke</p> <p>University of Southampton</p> <p>www.southampton.ac.uk/healthsciences/research/projects/m-mark.page</p>	<p>M-MARK helps stroke patients regain arm function by supporting them in undertaking independent home exercise. M-MARK will provide feedback on an iPad, either using an avatar or through successfully playing games.</p>	<p>NIHR</p> <p>Nov 15 – Jun 18</p> <p>£1,016,576</p>
<p>Enhancing the quality of psychological interventions delivered by telephone (EQUITY)</p> <p>Greater Manchester Mental Health NHS Foundation Trust</p>	<p>This project will focus on improving the way in which psychological interventions are delivered over the telephone so that people can be sure to get the care they need. Improving Access to Psychological Therapies (IAPT) data will be explored to understand which groups of people have the greatest difficulties with telephone-delivered treatments. Patients and professionals will be consulted, and the knowledge gained from these approaches will be used to develop an intervention to help services improve the quality of telephone treatments.</p>	<p>NIHR</p> <p>Apr 18 – Oct 23</p> <p>£2,524,745</p>
<p>Feasibility study of an RCT to investigate the effectiveness of a humanoid robot to support social skills development in children with an autism spectrum disorder</p> <p>Hertfordshire Community NHS Trust</p>	<p>The aim of the research is to conduct a feasibility study of a full-scale trial that will compare the social skills of children with ASD who (1) interact with KASPAR, (2) interact with a researcher only and (3) receive usual care. Sixty children newly diagnosed with ASD will be randomly allocated to one of the three groups.</p>	<p>NIHR</p> <p>Dec 16 – May 19</p> <p>£239,903</p>

Annex. Listing of assistive technology research and development projects 2018–19

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Feasibility of a RCT of the Active Communication Education (ACE) programme plus hearing-aid provision versus hearing-aid provision alone</p> <p>Bradford Teaching Hospitals NHS Foundation Trust</p>	<p>This study will involve new hearing-aid users and a family member or friend. They will be randomly assigned to receive the ACE programme or their usual treatment. Those in the ACE programme will attend five weekly 2-hour sessions of ACE delivered by an audiologist. The study will establish if communication, quality-of-life and hearing-aid benefits can be measured and will ask participants and clinicians what they thought of ACE.</p>	<p>NIHR</p> <p>Feb 17 – Jan 19</p> <p>£249,935</p>
<p>Feasibility of conducting a multi-centre randomised controlled trial to assess the effectiveness and cost-effectiveness of digital hearing aids in patients with tinnitus and hearing loss</p> <p>Nottingham University Hospitals NHS Trust</p> <p>www.nottingham.ac.uk/nctu/trials/hearing.aspx</p>	<p>This study, involving five audiology departments, will seek if it is feasible to undertake a larger randomised control trial to assess whether or not digital hearing aids are effective for participants with tinnitus and hearing loss.</p>	<p>NIHR</p> <p>Apr 18 – Apr 20</p> <p>£249,884</p>
<p>Evaluation of Point OutWords, a motor skills intervention to promote language development in non-verbal children with autism: a feasibility study</p> <p>Cambridgeshire and Peterborough NHS Foundation Trust</p>	<p>In a user-centred design process partnered with clients with ASD and their therapists, this team has developed Point OutWords, an iPad app-based communication training system. This feasibility project will evaluate the ability to recruit and retain families in sufficient numbers, families' ability to accept and to use Point OutWords as recommended, and practicality for families and utility in controlled-trial outcome measurement of several tests that could be used to measure improvements produced by Point OutWords.</p>	<p>NIHR</p> <p>Jul 18 – Jan 19</p> <p>£250,000</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>The feasibility of using BioFeedback to reduce Pain in people with Knee Osteoarthritis (BEPKO)</p> <p>Salford Royal NHS Foundation Trust</p>	<p>Using a technique known as electromyography, patients with knee osteoarthritis can see this muscle activity on easy-to-understand computer software. Patients can then be given specific exercises and instructions (using appropriate imagery) on how to contract the muscles differently to reduce pressure on the knee joints. This study will refine the four components of the intervention by working closely with patients with knee osteoarthritis to understand their views on how it can be improved. This will allow the new treatment to be optimised.</p>	<p>NIHR</p> <p>Apr 18 – Oct 19</p> <p>£161,445</p>
<p>Patient acceptability of a novel prosthetic device: a randomised feasibility study in older patients with vascular-related amputations and multimorbidities</p> <p>Hull and East Yorkshire Hospitals NHS Trust</p>	<p>This study aims to test whether or not it is possible to conduct a large randomised controlled trial comparing a standard foot-ankle prosthesis with a new version in older patients with vascular-related amputations and multimorbidities.</p>	<p>NIHR</p> <p>Apr 18 – Mar 20</p> <p>£248,894</p>
<p>Feasibility of a RCT to examine the effectiveness of auditory-cognitive training to improve hearing aid users' speech perception outcomes, compared with hearing aids alone</p> <p>Nottingham University Hospitals NHS Trust</p>	<p>This research builds on previous work that has shown that computer games designed to help people practise listening to speech can improve the cognition and listening abilities of people with hearing loss and hearing-aid users. These games, termed auditory training, could help patients better understand speech in noise, thereby improving communication, which can in turn improve quality of life. This feasibility study will explore whether or not a large trial could work to understand the benefits of these games for patients.</p>	<p>NIHR</p> <p>Apr 18 – Feb 21</p> <p>£249,414</p>

Annex. Listing of assistive technology research and development projects 2018–19

Project title, contact and URL	Summary	Organisation, duration and funding
<p>A multi-centre randomised controlled trial to assess the effectiveness and cost effectiveness of a home-based self-management standing frame programme in people with progressive MS</p> <p>Plymouth Hospitals NHS Trust</p>	<p>This study will assess the effectiveness of a home-based, self-management standing programme (with advice and support) for people with progressive MS, compared with their usual care alone. A range of outcomes, including motor function and balance, will be measured at intervals throughout the study and compared between the groups.</p>	<p>NIHR</p> <p>May 15 – Jul 18</p> <p>£343,761</p>
<p>Mobilising knowledge to improve assistive technology commissioning, service provision and sustained implementation</p> <p>University of Hertfordshire</p>	<p>The aim of this project is to produce guidance that helps professionals consider what they need to know to develop an assistive technology service to improve the experiences of people using it and improve the delivery of care.</p>	<p>NIHR</p> <p>May 18 – Apr 21</p>
<p>Can smartphone and teleconferencing technology be used to deliver an effective home exercise intervention to prevent falls amongst community dwelling older people? A feasibility RCT</p> <p>University of Manchester</p>	<p>This study will explore whether or not smartphone and teleconferencing technology can help to deliver effective one-to-one and group home exercise to prevent falls in older people.</p>	<p>NIHR</p> <p>Jan 16 – Jul 20</p> <p>£300,929</p>
<p>Exploring the use of the internet as a support tool for older family carers of people with dementia</p> <p>University College London</p> <p>www.spcr.nihr.ac.uk/projects/exploring-the-use-of-the-internet-as-a-support-tool-for-older-family-carers-of-people-with-dementia</p>	<p>This research will involve interviewing older carers (aged 65+ years) about their views on using an internet-based carer support tool at home. Findings will be combined with those of another study exploring the support needs of family carers of people with dementia at the end of life and designing a support tool that will be tested with carers.</p>	<p>NIHR</p> <p>May 16 – Aug 18</p> <p>£38,673</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Autism Spectrum Social Stories In Schools Trial 2 (ASSIST2): a randomised controlled trial and economic evaluation of a Social Stories intervention to address the social and emotional health of children with ASD in primary schools</p> <p>Leeds and York Partnership NHS Foundation Trust</p> <p>www.journalslibrary.nihr.ac.uk/programmes/hta/1611191/#/</p>	<p>This pragmatic cluster randomised controlled trial aims to examine the effectiveness and cost effectiveness of Social Stories for children with autism spectrum disorder and challenging daily behaviour. This design was drawn from the successful Health Technology Assessment (HTA) feasibility study (ASSIST).</p>	<p>NIHR</p> <p>Jun 18 – Nov 21</p> <p>£1,081,529</p>
<p>A pilot randomised controlled trial of one to one befriending by volunteers, compared to usual care, in reducing symptoms of depression in people with intellectual disability</p> <p>University College London</p> <p>www.journalslibrary.nihr.ac.uk/programmes/phr/1612257/#/</p>	<p>This team will carry out a pilot randomised controlled trial of one-to-one befriending by volunteers of people with intellectual disability, compared with usual care and a booklet of community resources.</p>	<p>NIHR</p> <p>Jul 18 – Jun 20</p> <p>£357,767.74</p>
<p>F.R.A.M.E. (facial remote activity monitoring eyewear) An inconspicuous, non invasive, mobile sensor device for real-time control of assistive technologies through facial expression</p> <p>Nottingham Trent University</p>	<p>The aim of the project is to develop an inconspicuous, non-invasive mobile sensor device for the real-time control of assistive technologies using facial expression.</p>	<p>NIHR</p> <p>Jul 16 – Mar 19</p> <p>£846,293</p>

Annex. Listing of assistive technology research and development projects 2018–19

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Development and feasibility of a behavioural intervention to improve the beneficial use of hearing technology for adults with hearing loss</p> <p>University of Nottingham</p>	<p>This project will identify how individuals' behaviours are linked to their use of hearing technologies and will use this knowledge to develop an online tool to improve the use of hearing technologies.</p>	<p>NIHR</p> <p>Oct 18 – Jun 23</p> <p>£593,402</p>
<p>The SAFEST Review: The Shock-Absorbing Flooring Effectiveness SysTematic Review including older adults and staff in care settings</p> <p>University of Portsmouth</p>	<p>This project will aim to summarise what is known about shock-absorbing flooring in hospitals and care homes with regard to reducing injuries from falls. The review will highlight evidence that will support carers of older people. The findings will also be relevant to the design and infrastructure of hospitals and care homes.</p>	<p>NIHR</p> <p>Feb 19 – Mar 20</p> <p>£126,914</p>
<p>Virtual reality supported therapy for the negative symptoms of psychosis</p> <p>King's College London</p>	<p>There are limited evidence-based interventions targeting negative symptoms for psychosis in clinical services. This research aims to introduce a therapy designed to reduce negative symptoms and improve the recovery prospect of people with schizophrenia. The proposed therapy will be a VR environment in which participants will be able to experience and practise everyday life activities, such as talking to a stranger and cooking a meal.</p>	<p>NIHR</p> <p>Mar 19 – Feb 21</p> <p>£184,757</p>
<p>The development and feasibility of m-health technologies to improve hearing aid use and benefit in first-time hearing aid users</p> <p>Nottingham University Hospitals NHS Trust</p>	<p>This research aims to work with hearing-aid users to adapt existing educational videos so that they can be used on people's own mobile devices. The researchers will ask first-time hearing-aid users to try out the videos on their devices, and after 10–12 weeks they will speak to each user to assess the videos' effectiveness.</p>	<p>NIHR</p> <p>Apr 17 – Aug 18</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Unspoken Voices: what are the perspectives of people who use alternative and augmentative communication (AAC) on the impact and effectiveness of AAC equipment?</p> <p>Gloucestershire Health and Care NHS Foundation Trust</p>	<p>The study aims to develop a greater understanding about why people do or do not use communication aids and how they view success with using them.</p>	<p>NIHR</p> <p>Apr 19 – Oct 19</p>
<p>A feasibility study to investigate the effects of a functional standing frame programme in people with severe sub-acute stroke on function, quality of life and neuromuscular impairment; and a systematic review on non- pharmacological interventions for orthostatic hypotension</p> <p>University of Plymouth</p>	<p>The aim of the study is to find out if it is possible and practical to use a functional standing frame programme with people with severe stroke in the subacute hospital setting.</p>	<p>Health Education England (HEE)/NIHR</p> <p>Apr 16 – Mar 19</p> <p>£269,711</p>
<p>Exploring language, behaviour and wellbeing outcomes of a user co-designed digital vocabulary intervention for child language disorder</p> <p>City, University of London</p>	<p>This project will work directly with children who struggle with language and aspects of behaviour, together with their parents and expert professionals, to jointly develop and test a vocabulary intervention designed to be used on tablets.</p>	<p>HEE/NIHR</p> <p>Jun 19 – May 23</p> <p>£376.578</p>
<p>Developing an intervention to reduce sedentary behaviour in non-ambulant young people with long-term disabilities</p> <p>Birmingham Community Healthcare NHS Foundation Trust</p>	<p>The aim of this study is to help young people with long-term disabilities who are unable to walk to spend less time being sedentary. This will be achieved by developing a digital intervention (software) for mobile phones or computers.</p>	<p>HEE/NIHR</p> <p>Jun 19 – May 22</p>

Annex. Listing of assistive technology research and development projects 2018–19

Project title, contact and URL	Summary	Organisation, duration and funding
<p>A feasibility study of facilitated reminiscence for people with dementia</p> <p>Ulster University</p> <p>www.hra.nhs.uk</p>	<p>The aim of this study is to investigate the effects of individual specific reminiscence activity facilitated through the use of bespoke software among people with dementia and their family carers. The study will use MemoryLane software on tablet devices and will examine the impact of facilitated reminiscence activity on both the person with dementia and their family carer.</p>	<p>Public Health Agency and The Atlantic Philanthropies</p> <p>Mar 15 – Aug 18</p> <p>£320,364.00</p>
<p>Development and piloting of a prehabilitation behavioural change and physical activity intervention for fibromyalgia syndrome (FMS)</p> <p>Ulster University</p>	<p>Fibromyalgia syndrome is a chronic pain condition that has a major impact on quality of life. Guidelines emphasise the importance of physical activity in managing it; however, those with the condition find engaging in exercise extremely challenging. Prehabilitation is defined as the process of enhancing the functional capacity of the individual to enable him or her to withstand a future stressful event. This study aims to develop a prehabilitation behaviour change intervention that will give patients the psychological and physical capability to engage in physical activity.</p>	<p>Health and Social Care Northern Ireland R&D Division</p> <p>Public Health Agency (HSC PHA)</p> <p>Jan 2018 – Jul 2019</p> <p>£38,826</p>
<p>CHITIN – The feasibility of a walking intervention to increase activity and reduce sedentary behaviour in people with serious mental illness</p> <p>Ulster University</p> <p>https://research.hscni.net/chitin/trial/walking-mental-illness</p>	<p>People with serious mental illness have mortality rates more than twice as high as those of the general population, leading to 8 million deaths worldwide annually; most of the risk of excess mortality is a result of physical health illnesses, such as cardiovascular disease, respiratory disease and cancer. This is a 17-week programme with an initial group education session, fortnightly coaching sessions, the provision of a pedometer and calendar to enable participants to monitor their daily physical activity, and optional weekly group walks. It will be tested in dispersed rural UK and Ireland healthcare settings to assess its feasibility using NIHR criteria.</p>	<p>HSC PHA</p> <p>Apr 19</p> <p>£353,961</p>

Project title, contact and URL	Summary	Organisation, duration and funding
<p>Tactile Collider: an interactive event for the blind and partially sighted</p> <p>University of Manchester</p> <p>https://gtr.ukri.org/projects?ref=ST%2FP000215%2F1</p>	<p>This first-of-a-kind project aims to communicate the science, encourage excitement, and develop an interest in particle physics, the Large Hadron Collider and the Higgs boson in a large and previously untargeted demographic group. The main target audiences are children (aged 10–18 years) and adults who are blind or visually impaired (collectively VI), along with their carers and teachers, an audience not considered in established particle and accelerator physics public engagement activities but who make up 2 million of the UK's population.</p>	<p>Science and Technology Facilities Council (STFC)</p> <p>Oct 16 – Sep 18</p> <p>£98,179</p>
<p>The Tactile Universe: accessible astrophysics for vision impaired school children</p> <p>University of Portsmouth</p> <p>https://gtr.ukri.org/projects?ref=ST%2FS000119%2F1</p>	<p>The Tactile Universe is an award-winning public engagement project at the Institute of Cosmology and Gravitation, University of Portsmouth. The project aims to make astrophysics research accessible to people with vision impairments, with a particular focus on children aged 9–14.</p>	<p>STFC</p> <p>Apr 18 – Jun 19</p> <p>£44,468</p>

Appendix

Assistive technology

'Assistive technology is any product or service designed to enable independence for disabled and older people'

The setting is any public setting where the user is interacting with the technology and the user has a disability or is older.

Inclusion criteria

- Technology or services that enable independence in people with disabilities or elderly people.
- All settings except clinical.
- Devices to support hygiene (e.g. drying devices, 'carer dryer', shower chair).
- Self-management or devices to allow for social cohesion for older people or people with disabilities.
- Population-based/major infrastructure where the technology or service is for disabilities/older people (e.g. tactile pavement surfaces).
- Technology/services that benefit people who are caring for people with disabilities/older people [*thereby giving indirect benefits to the person, e.g. delaying a move to a care home*].

Exclusion criteria

- Clinical settings.
- Self-management of a chronic condition (e.g. diabetes).
- Assistive technology where the practitioner is using the technology (e.g. healthcare).
- Population-based/major infrastructure (such as street design, housing, transport) where the technology or service is not primarily for people with disabilities or older people [*even though they may benefit – scope too large*].
- A medical device dwelling inside or under the skin that has been surgically inserted.

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Examples of assistive technology

- apps
- assistive technology
- balance technology
- bathing adaptation
- brain stimulation
- communication aid
- communication therapy
- computer game
- computer therapy
- computerised CBT
- digital reasoning
- electrical stimulation
- electronic magnifiers
- environmental assessment
- exercise programme
- gaming environment
- hearing aid
- heel cast
- humanoid robot
- internet-based treatment
- iPad
- Lego-based therapy
- mandibular devices
- mobile sensor
- neck collar
- night positioning equipment
- one-session therapy
- orthosis
- ostomy pouch
- rehabilitation device
- robot-assisted training
- self-management programme
- sensor integration therapy
- shared decision-making
- shower chair
- SMS
- socio-technical solutions
- standing frame
- step highlights
- support mattress
- symbol communication aid
- telehealth
- urinary catheter
- video feedback
- virtual reality environment